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

**EWX13611  
 EWX11831**

**Technical and functional  
 characteristics**

**PILOT 2**

Styling

**P6 - P3.0**

**P49**



# INDEX

1	PURPOSE OF THIS MANUAL .....	6
1.1	Low consumption mode.....	6
1.1.1	P6 P3.0 with universal motor (EWX13611).....	6
1.1.2	P6 P3.0 with three-phase motor and Inverter (EWX11831) .....	7
2	WARNINGS .....	8
3	Styling P6.....	9
3.1	EWX13611 General characteristics.....	9
3.2	EWX11831 General characteristics.....	10
3.3	Control panel.....	11
3.3.1	Display board .....	11
3.3.2	Control panel configuration .....	12
3.3.2.1	Programme configuration.....	12
3.3.2.2	Sensors – LEDs.....	12
3.3.2.3	Buttons – Sensors – LEDs.....	13
3.3.2.4	Buzzer.....	16
4	STYLING P3.0.....	17
4.1	EWX13611 General characteristics.....	17
4.2	EWX11831 General characteristics.....	18
4.3	Control panel.....	19
4.3.1	Display board .....	19
4.3.2	Control panel configuration .....	20
4.3.2.1	Programme configuration.....	20
4.3.2.2	Buttons – Sensors – LEDs.....	20
4.3.2.3	Display .....	21
4.3.2.4	Buzzer.....	21
5	DEMO MODE.....	22
5.1	Accessing the DEMO setting for P6 and P3.0 stylings.....	22
5.2	Exiting DEMO mode .....	22
6	DIAGNOSTICS SYSTEM .....	23
6.1	Accessing the diagnostics for P6 and P3.0 stylings.....	23
6.2	Quitting the diagnostics system .....	23
6.3	Phases of the diagnostics test .....	24
7	ALARMS .....	26
7.1	Displaying user alarms .....	26
7.1.1	Styling P6.....	26
7.1.2	Styling P3.0.....	27
7.2	Alarm reading/display .....	28
7.2.1	Displaying the alarm (P3.0).....	28
7.2.2	Displaying the alarm (P6).....	28
7.2.3	Example of alarm display.....	28
7.2.4	Behaviour of the alarms during diagnostic testing.....	29
7.2.5	Rapid reading of alarms.....	30
7.2.6	Deleting the last alarm .....	30
8	OPERATING TIME COUNTER (styling P3.0 only) .....	31
8.1	Reading the operating time .....	31
8.2	Display of total operating time.....	31
9	OPTIONS.....	32
9.1	Compatibility between options .....	32
9.2	Description of options .....	33
10	TECHNICAL CHARACTERISTICS.....	34
10.1	Construction characteristics (universal motor).....	34
10.2	Construction characteristics (three-phase motor, Inverter).....	35
10.3	Detergent dispenser .....	36
10.4	Detergent drawer.....	37
10.5	Washing unit .....	38
10.6	Water circuit .....	39
10.6.1	OKO/IDB version drain circuit .....	39
10.7	Electronic control.....	40
10.7.1	Programming/Updating the main circuit board.....	40
10.7.2	Electrical characteristics with universal motor.....	41
10.7.3	Electrical characteristics with three-phase motor and Inverter .....	41
11	ELECTRICAL COMPONENTS.....	42
11.1	Noise filter .....	42
11.1.1	General characteristics .....	42

11.2	Display board .....	42
11.3	Drainage pump.....	43
11.3.1	General characteristics .....	43
11.4	Heating element .....	44
11.4.1	General characteristics .....	44
11.5	Temperature probe.....	45
11.5.1	General characteristics .....	45
11.6	Analogue pressure switch.....	46
11.6.1	General characteristics .....	46
11.7	Door safety interlock PTO (Pull To Open) .....	47
11.7.1	General characteristics .....	47
11.7.2	Operating principle .....	47
11.7.2.1	Mechanical operation.....	48
11.7.3	Manual opening of the appliance door.....	49
11.8	Universal motor .....	50
11.8.1	General characteristics .....	50
11.8.2	Operating principle .....	50
11.8.2.1	Motor speed control .....	50
11.8.2.2	Direction of rotation of the motor .....	51
11.8.2.3	Tachometric generator.....	51
11.8.3	Power supply to motor .....	52
11.9	Three-phase asynchronous motor – Inverter.....	53
11.9.1	General characteristics .....	53
11.9.2	Power supply to motor .....	53
11.10	Inverter.....	54
11.10.1	General characteristics .....	54
11.11	Anti-foam control system .....	55
11.12	Solenoid valves .....	56
11.12.1	General characteristics .....	56
11.12.2	Operating principle .....	56
11.12.3	Mechanical jamming of the solenoid valve .....	56
11.12.4	Low water pressure .....	56
12	ALARM SUMMARY TABLE .....	57
13	DIAGRAMS.....	61
13.1	Operating Circuit Diagram EWX13611 (with universal motor).....	61
13.2	Key to operating circuit diagram EWX13611 (with universal motor).....	62
13.3	Operating Circuit Diagram EWX11831 (with three-phase motor).....	63
13.4	Key to operating circuit diagram EWX11831 (with three-phase motor) .....	64
14	ACCESSIBILITY (appliances with universal motor) .....	65
14.1	Worktop.....	65
14.2	From the worktop, you can access.....	65
14.2.1	Main board .....	65
14.2.2	Solenoid valve.....	68
14.2.3	Display board assembly.....	68
14.2.4	Control panel.....	70
14.2.5	Analogue pressure switch.....	73
14.2.6	Detergent dispenser .....	74
14.2.7	Upper counterweight.....	75
14.3	Accessing the front part.....	76
14.3.1	Door hinge – Door .....	76
14.3.2	Door safety interlock.....	76
14.3.3	Blade.....	79
14.3.4	Front panel.....	81
14.4	From the front panel, you can access .....	82
14.4.1	Front counterweight.....	82
14.4.2	Bellow seal .....	82
14.4.3	Welded tub assembly .....	82
14.4.4	Tub suspension springs.....	83
14.5	Accessing the rear part.....	84
14.5.1	Back panel .....	84
14.6	From the back panel, you can access .....	84
14.6.1	Belt.....	84
14.6.2	Plastic pulley (Ø 273 mm).....	85
14.6.3	Motor.....	85
14.6.4	Heating.....	85
14.7	From the base of the appliance, you can access.....	86

14.7.1	Drain water circuit.....	86
14.7.1.1	Drainage pump.....	86
14.7.1.2	Drain filter.....	87
14.7.1.3	IDB (Integrated Drain Body).....	87
14.7.2	Pressure chamber.....	89
14.7.3	Shock absorbers.....	91
14.7.4	Shock absorber pin.....	91
14.7.5	Main drain pipe.....	92
15	ACCESSIBILITY (appliances with INVERTER motor control).....	94
15.1	Worktop.....	94
15.2	From the worktop, you can access.....	94
15.2.1	Main board.....	94
15.2.2	Solenoid valve.....	95
15.2.3	Display board assembly.....	95
15.2.4	Control panel.....	96
15.2.5	Analogue pressure switch.....	96
15.2.6	Detergent dispenser.....	96
15.2.7	Upper counterweight.....	96
15.3	Accessing the front part.....	96
15.3.1	Door hinge - Door.....	96
15.3.2	Door safety interlock.....	96
15.3.3	Blade.....	96
15.3.4	Front panel.....	96
15.4	From the front panel, you can access.....	97
15.4.1	Front counterweight.....	97
15.4.2	Bellow seal.....	97
15.4.3	Welded tub assembly.....	97
15.4.4	Tub suspension springs.....	97
15.5	Accessing the rear part.....	97
15.5.1	Back panel.....	97
15.6	From the back panel, you can access.....	97
15.6.1	Belt.....	97
15.6.2	Plastic pulley (Ø 273 mm).....	98
15.6.3	Motor.....	98
15.6.4	Heating.....	98
15.6.5	UIMC.....	98
15.6.6	Drainage pump.....	100
15.6.7	Drain filter.....	101
15.7	From the base of the appliance, you can access.....	102
15.7.1	Drain water circuit.....	102
15.7.1.1	Drainage pump.....	102
15.7.1.2	Drainage filter.....	102
15.7.1.3	IDB (Integrated Drain Body).....	103
15.7.2	Pressure chamber.....	103
15.7.3	Shock absorbers.....	103
15.7.4	Main drain pipe.....	103

# 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 EWX13611 (P6-P3.0) and EWX11831 (P6-P3.0) electronic control systems.

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

The current electronic appliances manufactured use a heating element with thermal fuses (inside its branches) as safety, which interrupt if the water level drops 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:

### 1.1.1 P6 P3.0 with universal motor (EWX13611)

#### “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.

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

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

### 1.1.2 P6 P3.0 with three-phase motor and Inverter (EWX11831)

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

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

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

The appliances which are not equipped with the Zero Watt (0 Watt) circuit in: “**Stand-Off**” or “**Auto-off**” mode, see para. 1.1.1.

## 2 WARNINGS

Any work on electrical appliances must only be carried out by qualified personnel.

Before carrying out work on the appliance, use suitable instruments to check that the power supply system in the house is fully efficient. For example: refer to the indications provided/illustrated in the <<metrater>> course at the address (<http://electrolux.edvantage.net>) on the Electrolux Learning Gateway portal.

On completing operations, check that the appliance has been restored to the same state of safety as when it came off the assembly line.

If the circuit board has to be handled/replaced, use the ESD kit (Cod. 405 50 63-95/4) to avoid static electricity from damaging the circuit board, see S.B. No. 599 72 08-09 or consult the course <<Electrostatic charges>> at the address (<http://electrolux.edvantage.net>) on the Electrolux Learning Gateway portal.

This platform is not fitted with an ON/OFF switch. Before you access internal components, take the plug out of the socket to cut the power supply.

Make resistance measurements, rather than direct voltage and current measurements.

Warning the sensors located in the display board could be at a potential of 220 Volts.

When replacing the heating element, replace it with one that has the same characteristics (2 thermal fuses) in order not to compromise the safety of the appliance. NEVER remove/switch the NTC sensors between heating elements.



Always empty the appliance of all the water before laying it on its side (see the relevant paragraph).

Never place the appliance on its right side (electronic control system side): some of the water in the detergent dispenser could leak onto the electrical/electronic components and cause these to burn.

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

Do not place any kind of container under the appliance to catch any drips of water.

Make sure you wear gloves, because parts of the cabinet are sharp.





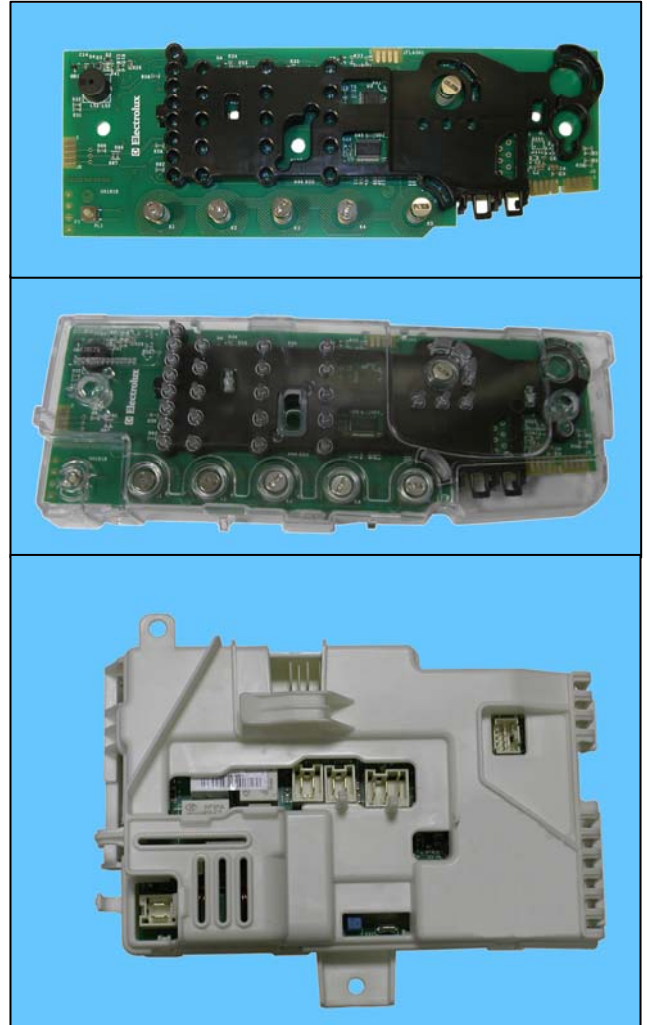
## 3 Styling P6

### 3.1 EWX13611 General characteristics

The electronic control system consists of two circuit boards.

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

↪ The control/display board, which is inserted in a plastic container fixed to the control panel (the figure shows: the display board and the display board assembly).



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

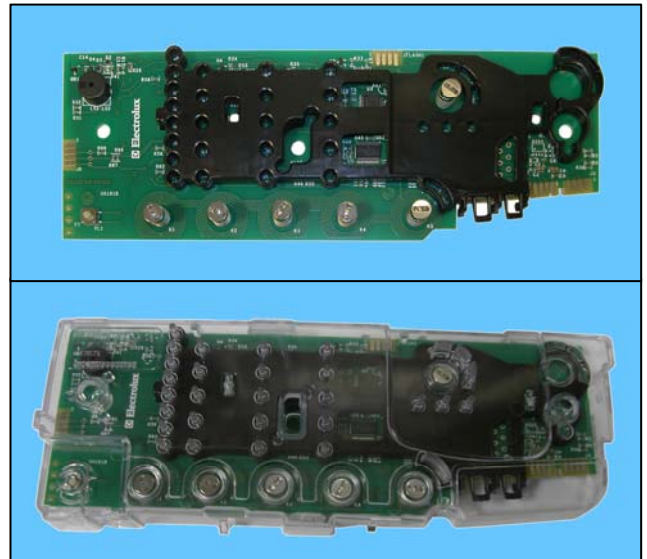
<b>No. buttons</b>	▪ 1 Maximum
<b>No. of touch-sensitive keys</b>	▪ Maximum 6 (5 options + start/pause)
<b>No. LEDs</b>	▪ Maximum 27 yellow + 1 red LED + Digit (made up of 22 LEDs)
<b>Power supply voltage</b>	▪ 220/240 V ▪ 50/60 Hz (configurable)
<b>Washing type</b>	▪ Traditional with "Eco-IDB"
<b>Rinsing system</b>	▪ Traditional with "Eco-IDB"
<b>Motor</b>	▪ Collector, with tachometric generator (Universal)
<b>Spin speed</b>	▪ 1,000÷1,400 rpm
<b>Anti-unbalancing system</b>	▪ AGS
<b>Cold water fill</b>	▪ 1 solenoid valve with 1 inlet – 2 outlets
<b>Detergent dispenser</b>	▪ 2 compartments: wash, conditioners
<b>Control of water level in the tub</b>	▪ Electronic/analogue pressure switch
<b>Door safety interlock</b>	▪ Instant "Pull To Open"
<b>Heating element heat output</b>	▪ 1,750 W with thermal fuses incorporated
<b>Temperature check</b>	▪ NTC probe incorporated in the heating element
<b>Buzzer</b>	▪ Traditional incorporated in the PCB

### 3.2 EWX11831 General characteristics

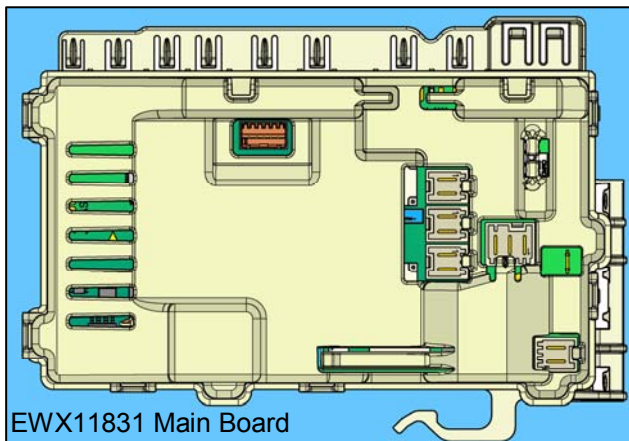
The electronic control system consists of three circuit boards.

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

- ↪ The control/display board, which is inserted in a plastic container fixed to the control panel (the figure shows: the display board and the display board assembly).



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



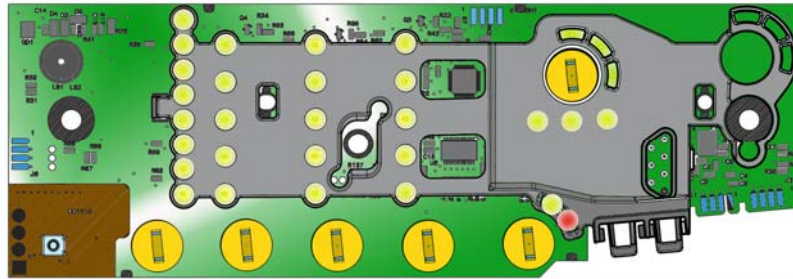
<b>No. of buttons</b>	<ul style="list-style-type: none"> <li>▪ Maximum 1</li> </ul>
<b>No. of touch-sensitive keys</b>	<ul style="list-style-type: none"> <li>▪ Maximum 6 (5 options + start/pause)</li> </ul>
<b>No. LEDs</b>	<ul style="list-style-type: none"> <li>▪ Maximum 27 yellow + 1 red LED + Digit (made up of 22 LEDs)</li> </ul>
<b>Power supply voltage</b>	<ul style="list-style-type: none"> <li>▪ 220/240 V</li> <li>▪ 50/60 Hz (configurable)</li> </ul>
<b>Washing type</b>	<ul style="list-style-type: none"> <li>▪ Traditional with "Eco-IDB"</li> </ul>
<b>Rinsing system</b>	<ul style="list-style-type: none"> <li>▪ Traditional with "Eco-IDB"</li> </ul>
<b>Motor</b>	<ul style="list-style-type: none"> <li>▪ Two-pole asynchronous (three-phase)</li> </ul>
<b>Spin speed</b>	<ul style="list-style-type: none"> <li>▪ 1,000÷1,600 rpm</li> </ul>
<b>Anti-unbalancing system</b>	<ul style="list-style-type: none"> <li>▪ AGS</li> </ul>
<b>Cold water fill</b>	<ul style="list-style-type: none"> <li>▪ 1 solenoid valve with 1 inlet – 2 outlets</li> </ul>
<b>Detergent dispenser</b>	<ul style="list-style-type: none"> <li>▪ 2 compartments: wash, conditioners</li> </ul>
<b>Control of water level in the tub</b>	<ul style="list-style-type: none"> <li>▪ Electronic/analogue pressure switch</li> </ul>
<b>Door safety interlock</b>	<ul style="list-style-type: none"> <li>▪ Instant "Pull To Open"</li> </ul>
<b>Heating element heat output</b>	<ul style="list-style-type: none"> <li>▪ 1,750 W with thermal fuses incorporated</li> </ul>
<b>Temperature check</b>	<ul style="list-style-type: none"> <li>▪ NTC probe incorporated in the heating element</li> </ul>
<b>Buzzer</b>	<ul style="list-style-type: none"> <li>▪ Traditional incorporated in the PCB</li> </ul>

### 3.3 Control panel

Max. 1 Button  
Max. 6 touch sensors  
30 yellow LEDs + 1 red LED

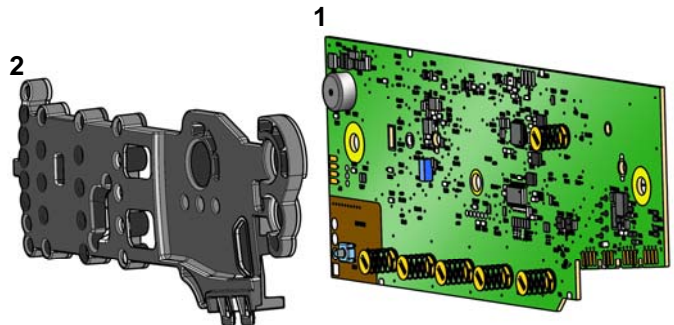


#### 3.3.1 Display board

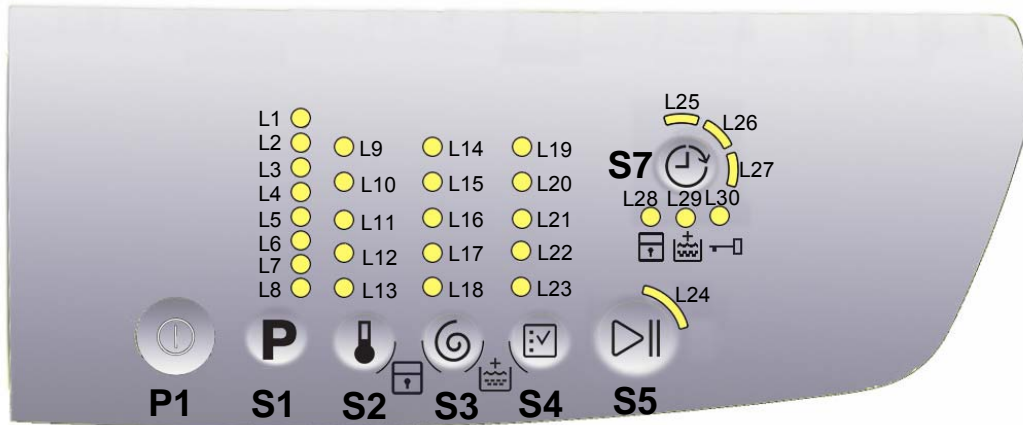


↙ Display board assembly, exploded view

- 1 Display board
- 2 Light divider



### 3.3.2 Control panel configuration



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

#### 3.3.2.1 Programme configuration

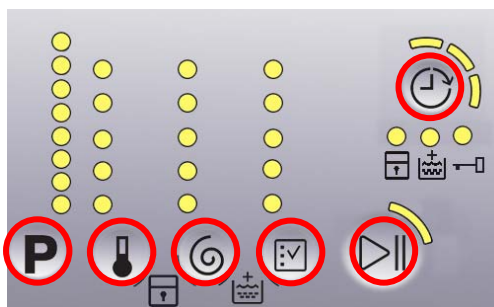
The table below lists the parameters that can be used to define the washing programmes.

<b>Types of fabric</b>	Cotton/linen, Synthetic fabrics, Delicates, Wool, Hand-wash, Shoes, Jeans, Duvet, Silk.
<b>Special programmes</b>	Cotton/linen + pre-wash, Soak, Miniprogramme, Easy-Iron, Conditioner, Rinse, Drain, Spin, Economy.
<b>Temperature</b>	Normal, Minimum, Maximum: the initial temperature is the one proposed for the washing programme.
<b>Spin</b>	Normal, Minimum, Maximum.
<b>Options (Normal/Possible)</b>	Rinse Hold, Pre-wash, Extra rinse, Easy-Iron, Economy (energy label), Normal, Super quick, Reduced spin speed, No spin.
<b>Programme phases</b>	Pre-wash, Wash, Rinses, Spin, Delayed start.

#### 3.3.2.2 Sensors – LEDs

The function of each touch sensor is defined via the configuration of the appliance (the data and images are for guidance only).

The touch sensors are positioned under the silk-screen printed symbols on the control panel (circled here in red).



A light touch on the centre of the symbol is enough to activate/deactivate the function linked to the sensor with the switching on/off of the relative Led confirming that the enabling/disabling has taken place.

At the same time as the enabling/disabling of options, the cycle duration time is updated via the digits (styling P3.0 only).

You need to keep your finger pressed down for a longer period of time with the Start/Pause sensor to confirm both the cycle's start and pause, in order to avoid unwanted starts or accidental pauses.

Every time you touch a sensor, you need to lift your finger up by a centimetre and half a second needs to elapse before touching it again, otherwise the electronic system does not recognise that the sensor has been touched for a second time.

The sensors used for adjusting the: Temperature, Spin, delayed Start and Time Manager have a continued variation of values as long as your finger is in contact with the sensor.

### 3.3.2.3 Buttons – Sensors – LEDs

#### • **Button no. 1: ON/OFF – ON**

Press it to turn the appliance on, at the same time the buzzer will sound a tone (if enabled), the LEDs of the first four touch sensors (S1+S4) will light up from the bottom up, then the LEDs relating to the following will stay on: the main programme, the recommended spin speed and temperature.

The operation of the ON/OFF depends on the configuration of the main circuit board. It can cut the appliance off from the electricity mains completely (0 Watt circuit) or set the appliance to low energy consumption mode (without 0 Watt circuit) in which case you will need to take the plug out of the socket to cut off the electricity supply completely.

Press the ON/OFF button to cancel the chosen programme.

To switch the appliance off, hold down the button for 1 second, at the same time the buzzer will sound a tone (if enabled), all the LED will switch off, all the options selected and any programme that is running will be cancelled.



#### ↳ **Sensor no. 1: PROGRAMMES**

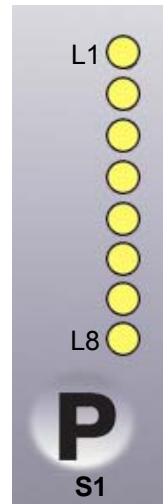
The programmes are associated with the second sensor, combined with eight LEDs (L1+L8).

As soon as the appliance is switched on, the first LED at the top corresponding to the main programme lights up.

To the left of each LED, there is a description of the programme and each time the sensor is touched, the LED underneath it lights up, so the programme selection occurs from the top down; once the last programme has been reached, if you touch the sensor again, the selection returns to the top, i.e. the initial programme.

The selected programme is shown by the LED beside the description silk-screen printed on the control panel lighting up.

For a quicker selection, hold your finger down on the sensor for longer.



#### ↳ **Sensor no. 2: TEMPERATURE**

The temperature is associated with the second sensor, combined with five LEDs (L9+L13).

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

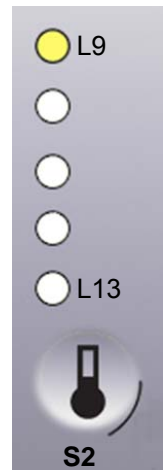
By touching the sensor you can lower the temperature. Once this has been reached the selection starts again from the highest available one for the selected programme.

The selected temperature is shown by turning on the LEDs near the silk-screen printed value on the control panel.

The temperatures available are: **90 °C, 60 °C, 40 °C, 30 °C, cold cycle.**

The initial temperature set for each programme is configurable;


For a quicker selection, hold your finger down on the sensor for longer.



### ↵ **Sensor no. 3:** SPIN SPEED (configurable)

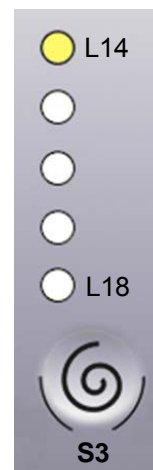
The function of the third sensor is dedicated to the spin speed selection, combined with the five LEDs (L14÷L18) above; the related speed is silk-screen printed beside them on the control panel.

The initial spin speed is that set for the chosen programme.

Touch the sensor to reduce the spin speed, indicated by the LED near the silk-screen printed value on the control panel lighting up at the same time to confirm your selection. Once the lowest speed has been reached, you can, if you wish, select “Rinse hold” and the related LED beside the symbol  silk-screen printed on the control panel lights up. The next selection will be the highest speed available for the selected programme.

For a quicker selection, hold your finger down on the sensor for longer.

The speeds that can be combined with the five LEDs are shown in the following table.



Max spin speed (rpm)	800	1,000	1,000	1,200	1,200÷1,400	1,200÷1,400	1,400-1,600	1,400-1,600	1,400-1,600
Intermediate	600	800	800	800	1,000	1,000	1,200	1,200	1,200
Intermediate	400	400	600	400	800	800	800	800	1,000
Intermediate	0	0	400	0	0	400	0	400	800
Min. speed	Rinse hold	Rinse hold	0	Rinse hold	Rinse hold	0	Rinse hold	0	0

The recommended intermediate spin speeds are:

800 rpm for the following programmes: Lingerie, Duvet, Shirts, Sport, 14 min., Silk, etc...

1,000 rpm for the Easy-Iron option

1,200 rpm for synthetic fabrics, delicates, wool

If you select the “Rinse hold” option when the cycle ends, the related LED flashes to remind the end user to drain the water before opening the appliance door.

With the “Easy-Iron” option, the spin speed is reduced to 1000 rpm even if the spin speed selected is higher; if the option is deselected, the speed automatically returns to the chosen value.

### ↵ **Sensor no. 4:** OPTIONS (configurable)

The function of the fourth sensor is dedicated to the choice of option to combine with the programme, combined with five LEDs (L19÷L23) above, beside which the name of the related option is silk-screen printed on the control panel.

Touch the sensor when no option has been enabled (all the LEDs are switched off) to light up the first LED relating to the most important option in the list.

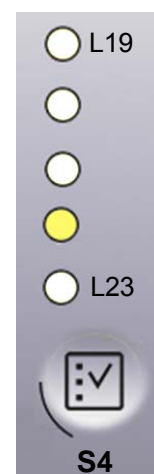
Continue your selection to light up the subsequent option LED (from the top down) and the previous one is switched off, all the way to the last option at the bottom. The next time you press the sensor all the LEDs will remain switched off.

You can only select one option per programme, as no combinations are possible.

For a quicker selection, hold your finger down on the sensor for longer.

The following options can be combined with the first three LEDs (at the top):

- Super Quick
- Easy Iron
- Intensive
- Pre-wash
- Daily
- Half-load
- Soak



The two LEDs (at the bottom) are combined with:

Rinse Only – performs the last rinse cycle for the selected programme. If “Extra Rinse” is set, two or more rinse cycles are added (depending on the configuration).

Spin/Drain – performs the spin cycle for the selected programme, if the selected option is “No Spin” it only drains off the water.

### ↳ **Sensor no.5: START/PAUSE**

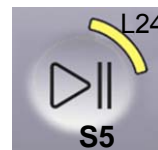
This sensor has the START/PAUSE function, used to start up a washing programme, after selecting the washing cycle and required options; it can also pause a cycle that has already started: to allow you to change selected option or open the door (if the temperature conditions or water level allow for this).

The cycle re-starts if you touch the sensor again.

The (L24) LED combined with this sensor flashes slowly: in the selection phase, during the pause and at the end of a cycle with water in the tub.

It stays lit when a cycle is running and turns off when the cycle has ended and the door is unlocked.

While other sensors when touched immediately change from selected to de-selected, in the case of this sensor, more time is needed to avoid unwanted start ups or pauses.



In the event of an incorrect selection by the end user, such as: an option that is not compatible with the selected programme or that has been made after the programme has commenced, this is indicated by three quick red flashes. The same LED is used to notify the user of any specific problems with the appliance. The buzzer does not play any particular tune.



### ↳ **Sensor no.6:- DELAYED START (configurable)**

This sensor works as the DELAYED START and it is combined with the three LEDs (L25÷L27) that surround it.

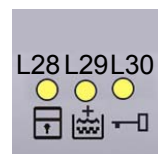
Touch it in sequence to choose from one of the three delayed start options: 3 h- 6 h-9 h with the related LED coming on.

In order to reset the delay time, reach the maximum delay time and the next time the sensor is pressed the delay time is cancelled and no LED is lit up, or if the delayed start has already been set, put the appliance on PAUSE and reset the time as described earlier.



### ↳ **Indicator LEDs**

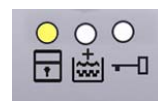
In addition to lighting up when their functions have been enabled, in combination with the red LED of the START/PAUSE sensor, they notify the end user of any specific problems with the appliance that may be solved without having to call for technical assistance (see page 26).



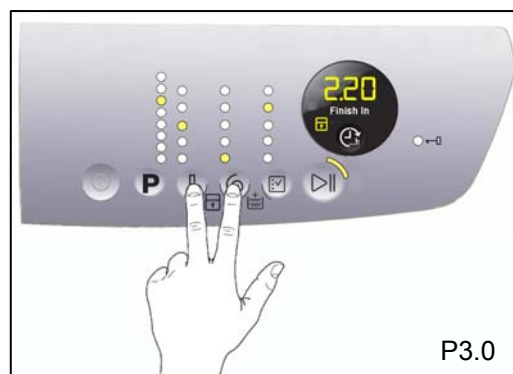
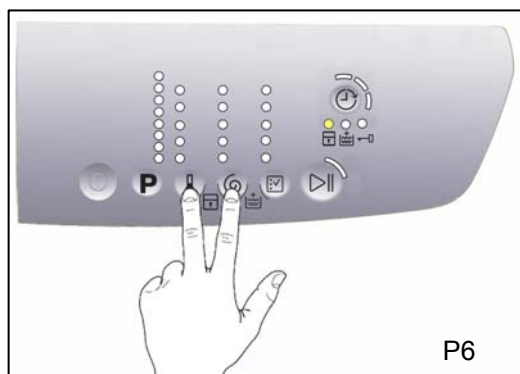
### ↳ **Padlock:**

When the related LED (L28) is lit, it indicates that all the sensors are disabled to prevent children from altering, starting or pausing the cycle.

When enabled, touch any sensor and the LED flashes three times to remind the end user that the appliance is locked.

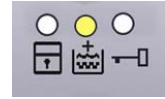


Use the combination of two sensors (touch for approximately 5 seconds) illustrated in the figure below to enable/disable this option.

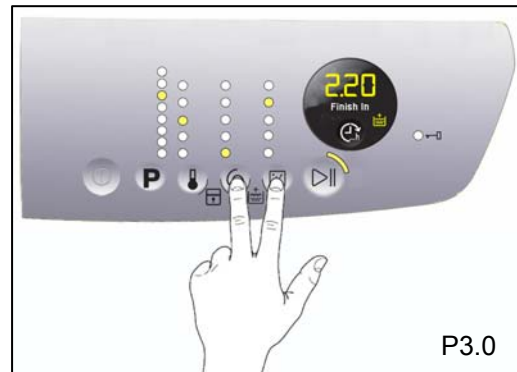
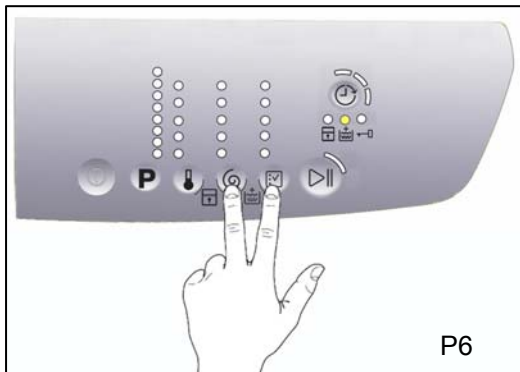


### ↩ Extra Rinse:

When the related LED (L29) is lit up, this indicates that the option is enabled (it lights up during the washing and rinse cycles, and it remains switched off during the drain and spin cycle). The option remains enabled even after the appliance has been turned off (for subsequent programmes).

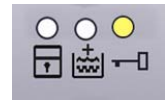


Use the combination of two sensors illustrated in the figure below to enable/disable this option.



### ↩ Door lock:

When the related LED (L30) is lit up, the safety device prevents the 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).



#### 3.3.2.4 Buzzer

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

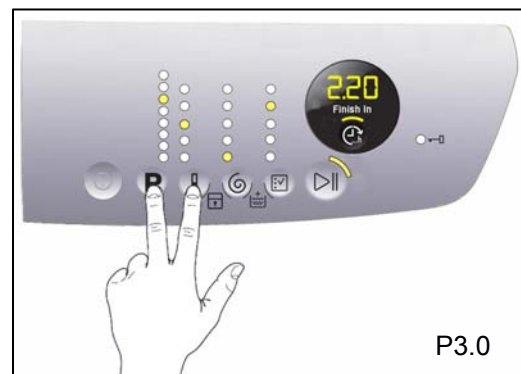
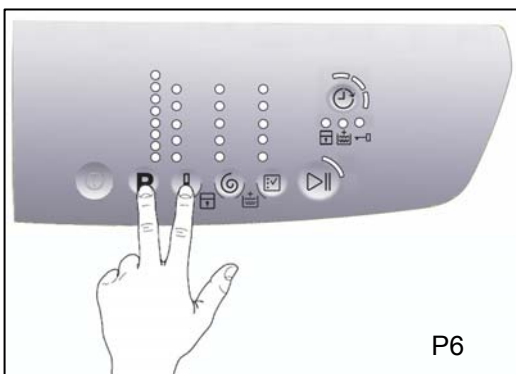
- When the machine is turned on and off it emits two different tunes.
- When a sensor is pressed it emits a short **“Click”**
- When the cycle ends this is indicated by a special sequence of **“three long beeps”** repeated at intervals of 15” for a total of 2 minutes. The sequence can only be stopped by opening the door in appliances where the instant door safety device with micro-switch is fitted.
- 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 sensors.

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

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

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



To enable it, touch the sensors simultaneously for 3 seconds. A short beep will confirm that it has been enabled, whereas two short beeps will confirm that it has been disabled.



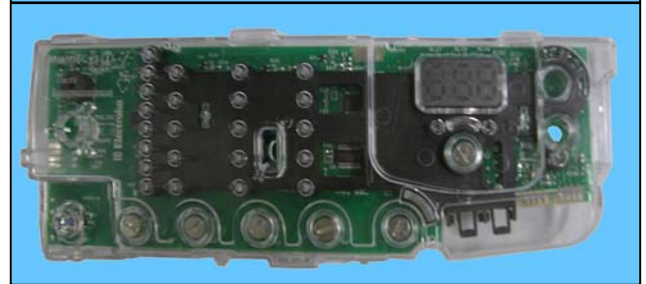
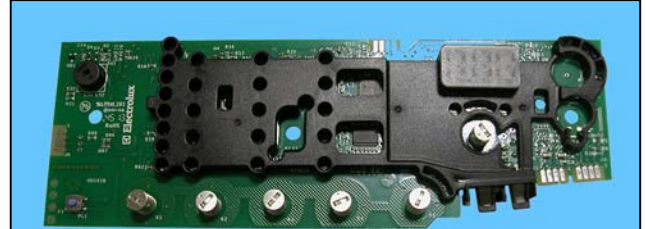
## 4 STYLING P3.0

### 4.1 EWX13611 General characteristics

The electronic control system consists of two circuit boards.

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

↪ The control/display board, which is inserted in a plastic container fixed to the control panel (the figure shows: the display board and the display board assembly).



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



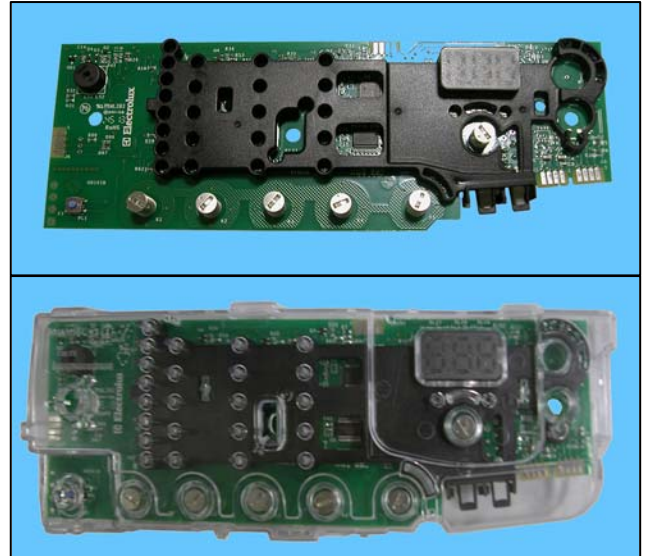
<b>No. of buttons</b>	<ul style="list-style-type: none"> <li>▪ 1 Maximum</li> </ul>
<b>No. of touch-sensitive keys</b>	<ul style="list-style-type: none"> <li>▪ Maximum 6 (5 options + start/pause)</li> </ul>
<b>No. LEDs</b>	<ul style="list-style-type: none"> <li>▪ Maximum 24 yellow + 1 red LED + Digit (made up of 22 LEDs)</li> </ul>
<b>Power supply voltage</b>	<ul style="list-style-type: none"> <li>▪ 220/240 V</li> <li>▪ 50/60 Hz (configurable)</li> </ul>
<b>Washing type</b>	<ul style="list-style-type: none"> <li>▪ Traditional with "Eco-IDB"</li> </ul>
<b>Rinsing system</b>	<ul style="list-style-type: none"> <li>▪ Traditional with "Eco-IDB"</li> </ul>
<b>Motor</b>	<ul style="list-style-type: none"> <li>▪ Collector, with tachometric generator (Universal)</li> </ul>
<b>Spin speed</b>	<ul style="list-style-type: none"> <li>▪ 1,000÷1,600 rpm</li> </ul>
<b>Anti-unbalancing system</b>	<ul style="list-style-type: none"> <li>▪ AGS</li> </ul>
<b>Cold water fill</b>	<ul style="list-style-type: none"> <li>▪ 1 solenoid valve with 1 inlet – 2 outlets</li> </ul>
<b>Detergent dispenser</b>	<ul style="list-style-type: none"> <li>▪ 2 compartments: wash, conditioners</li> </ul>
<b>Control of water level in the tub</b>	<ul style="list-style-type: none"> <li>▪ Electronic/analogue pressure switch</li> </ul>
<b>Door safety interlock</b>	<ul style="list-style-type: none"> <li>▪ Instant "Pull To Open"</li> </ul>
<b>Heating element heat output</b>	<ul style="list-style-type: none"> <li>▪ 1,750 W with thermal fuses incorporated</li> </ul>
<b>Temperature check</b>	<ul style="list-style-type: none"> <li>▪ NTC probe incorporated in the heating element</li> </ul>
<b>Buzzer</b>	<ul style="list-style-type: none"> <li>▪ Traditional incorporated in the PCB</li> </ul>

## 4.2 EWX11831 General characteristics

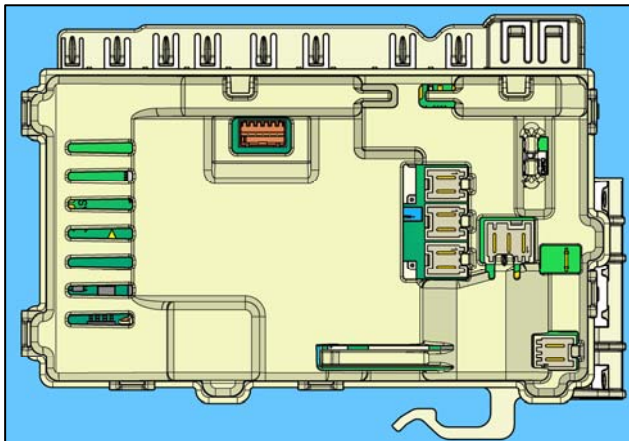
The electronic control system consists of three circuit boards.

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

- ↖ The control/display board, which is inserted in a plastic container fixed to the control panel (the figure shows: the display board and the display board assembly).



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



<b>No. of buttons</b>	<ul style="list-style-type: none"> <li>▪ 1 Maximum</li> </ul>
<b>No. of touch-sensitive keys</b>	<ul style="list-style-type: none"> <li>▪ Maximum 6 (5 options + start/pause)</li> </ul>
<b>No. LEDs</b>	<ul style="list-style-type: none"> <li>▪ Maximum 24 yellow + 1 red LED + Digit (made up of 22 LEDs)</li> </ul>
<b>Power supply voltage</b>	<ul style="list-style-type: none"> <li>▪ 220/240 V</li> <li>▪ 50/60 Hz (configurable)</li> </ul>
<b>Washing type</b>	<ul style="list-style-type: none"> <li>▪ Traditional with "Eco-IDB"</li> </ul>
<b>Rinsing system</b>	<ul style="list-style-type: none"> <li>▪ Traditional with "Eco-IDB"</li> </ul>
<b>Motor</b>	<ul style="list-style-type: none"> <li>▪ Two-pole asynchronous (three-phase)</li> </ul>
<b>Spin speed</b>	<ul style="list-style-type: none"> <li>▪ 1,000÷1,600 rpm</li> </ul>
<b>Anti-unbalancing system</b>	<ul style="list-style-type: none"> <li>▪ AGS</li> </ul>
<b>Cold water fill</b>	<ul style="list-style-type: none"> <li>▪ 1 solenoid valve with 1 inlet – 2 outlets</li> </ul>
<b>Detergent dispenser</b>	<ul style="list-style-type: none"> <li>▪ 2 compartments: wash, conditioners</li> </ul>
<b>Control of water level in the tub</b>	<ul style="list-style-type: none"> <li>▪ Electronic/analogue pressure switch</li> </ul>
<b>Door safety interlock</b>	<ul style="list-style-type: none"> <li>▪ Instant "Pull To Open"</li> </ul>
<b>Heating element heat output</b>	<ul style="list-style-type: none"> <li>▪ 1,750 W with thermal fuses incorporated</li> </ul>
<b>Temperature check</b>	<ul style="list-style-type: none"> <li>▪ NTC probe incorporated in the heating element</li> </ul>
<b>Buzzer</b>	<ul style="list-style-type: none"> <li>▪ Traditional incorporated in the PCB</li> </ul>

### 4.3 Control panel

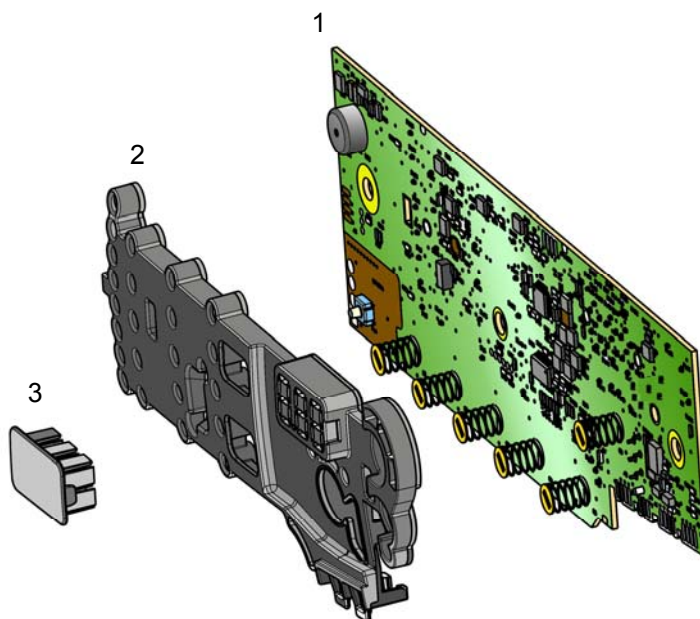
- Max. 1 Button
- Max. 6 sensors
- 25 LEDs
- 1 LCD



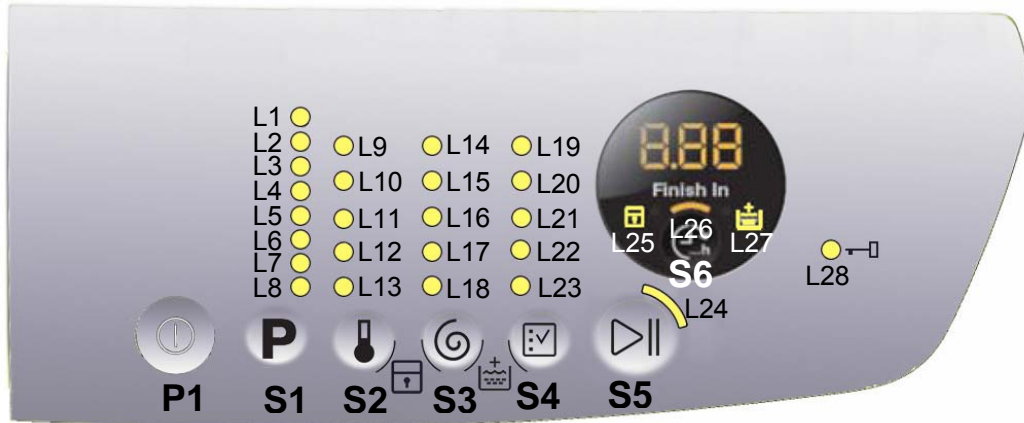
#### 4.3.1 Display board

↳ Display board assembly, exploded view

- 1 Display board
- 2 Light divider
- 3 Light diffuser



### 4.3.2 Control panel configuration



All the functions of button P1 and of sensors S1 to S5 are the same as those described for styling P6 (see page 12).

#### 4.3.2.1 Programme configuration

(See page 12.)

#### 4.3.2.2 Buttons – Sensors – LEDs

All the functions: of button P1, of sensors S1 to S5 are the same as those described for styling P6 (see page 13).

##### **Sensor no.6:** THE CYCLE FINISHES IN (Finish In)

This sensor allows the end user to programme in how many hours' time the washing cycle will finish.

In detail, the cycle start can be delayed so as to have the cycle end at the desired time.

You can select from a minimum of 3 hours to a maximum of 20 hours.

The first time you press the sensor, the display indicates 3 hours and the related LED (26) lights up to indicate the option is enabled. The next time you press it, the time increases by 1 hour, up to a total of 10 hours. The increase is of 2 hours every time you press the button for the range between 10 and 20 hours.

If the display indicates 20 hours, the next time you press the sensor, "Finish In" will be disabled and the washing cycle time will be displayed and the LED (26) will switch off.



For a quicker selection, hold your finger down on the sensor for longer.

##### 👉 Setting an option after selecting "Finish In"

"Finish In" must be enabled after an option has been selected (if necessary) and before you start the cycle. If the end user, after setting "Finish In", modifies the programme settings, "Finish In" will be disabled, the LED (26) will flash once and the display will once again indicate the washing cycle time.

##### 👉 "Finish In" after touching the START sensor

Once you have selected the programme and the option (if necessary) and set "Finish In", the washing cycle starts when you touch the START sensor; the appliance door is locked and the countdown begins, and is indicated on the display at one-hour intervals until the start of the washing cycle. Once the "Finish In" time is up, the display indicates the amount of time necessary to perform the washing cycle, starting the countdown of the cycle with one-minute intervals, until the end of the cycle.

If the appliance is paused during the countdown of the "Finish In" option to change the option and including "Finish In", the delay time is deleted and "Finish In" is disabled; touch the sensor and the display will indicate "error".

#### 4.3.2.3 Display

↵ **Padlock**  
(See page 15.)

↵ **Extra Rinse**  
(See page 16.)

The following information also appears on the display:

↵ **Washing programme time**

This appears after a washing programme has been selected. This time corresponds to the time required for the maximum wash load for each type of programme.

After the programme has started, the time decreases (and is updated) minute by minute.

When the time is less than an hour, the initial zeros are not displayed.



↵ **End of cycle**

**End of the programme** is indicated by a **permanently lit zero** (when the door can be opened).



↵ **Selection incorrect**

Displays the flashing message "Err", for one second.

Appears on selecting option that is incompatible with the programme selected, or when the selector is turned while a cycle is running.



↵ **Alarm code**

Indicates an anomaly during operation of the machine. Simultaneously to the displaying of the code on the LCD display, the LED above the START/PAUSE sensor flashes.



↵ **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.



#### 4.3.2.4 Buzzer

(See page 16.)

## 5 DEMO MODE

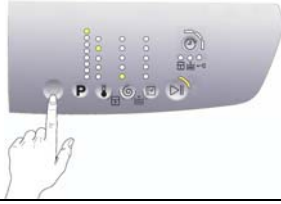
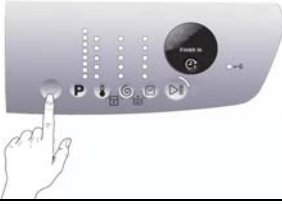
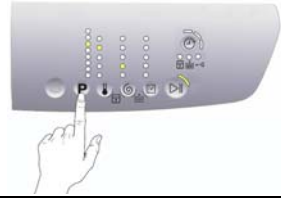
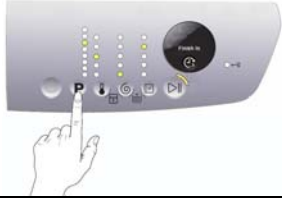
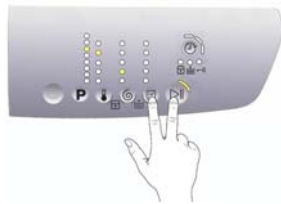

A special cycle is designed to demonstrate the operation of these appliances in shops, without connecting them to the water mains. This way, any one of the programmes can be selected and, once the start button/sensor has been pressed/touched (START/PAUSE), the appliance will only perform some of the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

The cycle takes place as follows:

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

### 5.1 Accessing the DEMO setting for P6 and P3.0 stylings

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

STEPS	P6	P3.0
1		
	Switch on the appliance using the ON/OFF button	
2		
	Use sensor S1 to select the third LED from the top down	
3		
	Simultaneously press the <b>START/PAUSE</b> button and the nearest <b>option sensor</b> (as shown in the diagram). Keep your finger above the sensors (for approximately three to five seconds) until: P6 all the LEDs relating to Sensors S2/S3/S4 flash. P3.0 the display indicates a flashing "dEM" for a short while.	

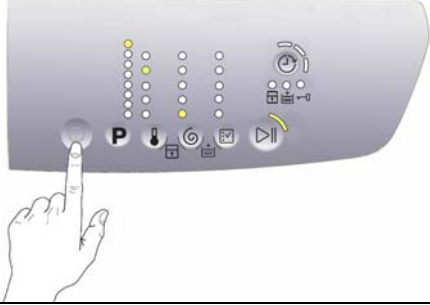

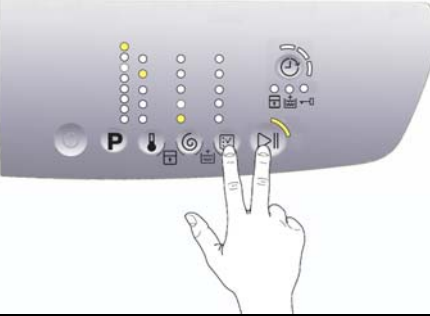

### 5.2 Exiting DEMO mode

Disconnect the power supply to exit demo mode.

## 6 DIAGNOSTICS SYSTEM

### 6.1 Accessing the diagnostics for P6 and P3.0 stylings

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

STEPS	P6	P3.0
<p><b>1</b></p>		
	<p>Switch on the appliance using the ON/OFF button and wait for the main programme LED to light up.</p>	
<p><b>2</b></p>		
	<p>Simultaneously press the <b>START/PAUSE</b> button and the nearest <b>option sensor</b> (as shown in the diagram).</p> <p>Keep your fingers on the sensors (for approximately 3 seconds) until the LEDs begin to flash in sequence (P3.0, also the symbols inside the display).</p>	

### 6.2 Quitting the diagnostics system

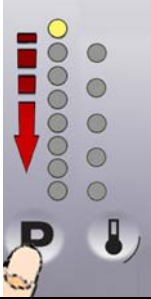
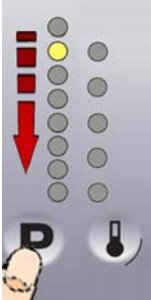
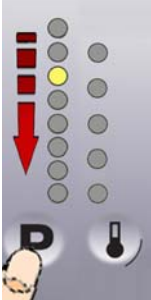
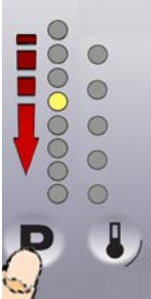
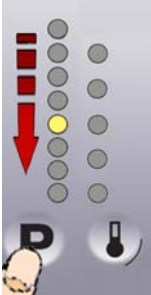
In order to exit the diagnostic system turn the appliance off and on again using the ON/OFF button.

If "ELE" appears on the display (P3.0) when you turn the appliance on, repeat the operation of switching it on and off.

### 6.3 Phases of the diagnostics test

Irrespective of the type of electronic board and of the configuration, once the diagnostics system has been activated, touch sensor S1 to run a diagnostic check of the various components and the alarm reading (touch sensor S1 (Programme) to progress in sequence from the top down, or touch sensor S2 (Temperature) to go back).

Where featured, the Display (P3.0) indicates the description provided in the last column of the table below. (All alarms are enabled in the diagnostic cycle.)

LED lit up	Components activated	Working conditions	Function tested	Display
	<ul style="list-style-type: none"> <li>- Door safety interlock</li> <li>- Wash solenoid valve</li> </ul>	Door closed Water level below anti-flooding level Maximum time 5 min.	Water fill to wash compartment	Water level in the tub (mm)
	<ul style="list-style-type: none"> <li>- Door safety interlock</li> <li>- Pre-wash solenoid valve</li> </ul>	Door closed Water level below anti-flooding level Maximum time 5 min.	Water fill to pre-wash compartment	Water level in the tub (mm)
	<ul style="list-style-type: none"> <li>- Door safety interlock</li> <li>- Pre-wash and wash solenoid valves</li> </ul>	Door closed Water level below anti-flooding level Maximum time 5 min.	Water fill to conditioner compartment	Water level in the tub (mm)
	<ul style="list-style-type: none"> <li>- Door safety interlock</li> <li>- Third solenoid valve</li> </ul>	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)
	<ul style="list-style-type: none"> <li>- Door safety interlock</li> <li>- Fourth solenoid (hot water, if present)</li> </ul>	Door closed Water level below anti-flooding level Maximum time 5 min.	Water fill to Fourth solenoid valve compartment	Water level in the tub is displayed (mm)



LED lit up	Components activated	Working conditions	Function tested	Display
	<ul style="list-style-type: none"> <li>- Door safety interlock</li> <li>- Wash solenoid, if the water in the tub is not enough to cover the heating element</li> <li>- Heating element</li> <li>- Recirculation pump</li> </ul>	<p>Door closed Water level above the heating element Maximum time 10 min. up to 90 °C (*)</p>	<p>Reheating Circulation</p>	<p>Temperature in °C measured using the NTC probe</p>
	<ul style="list-style-type: none"> <li>- Door safety interlock</li> <li>- Wash solenoid, if the water in the tub is not enough to cover the heating element</li> <li>- Motor (55 rpm clockwise, 55 rpm anti-clockwise, 250 rpm pulse)</li> </ul>	<p>Door closed Water level above the heating element</p>	<p>Check for leaks from the tub.</p>	<p>Drum speed in rpm/10</p>
	<ul style="list-style-type: none"> <li>- Door safety interlock</li> <li>- Drainage pump</li> <li>- Motor up to 650 rpm then at maximum spin speed (**)</li> </ul>	<p>Door closed Water level lower than anti-boiling level for spinning</p>	<p>Drain, calibration of analogue pressure switch and spin.</p>	<p>Drum speed in rpm/10</p>
	-----	-----	-----	-----
	Reading/Deleting the last alarm	-----	-----	-----
	<ul style="list-style-type: none"> <li>- The LEDs light up in sequence, the symbols on the LCD display light up in groups and the backlighting comes on</li> <li>- Touch a sensor to turn on the group of icons in the LCD screen or the corresponding LED and the buzzer sounds at the same time</li> </ul>	<p>Always active</p>	<p>User interface functions</p>	

(\*) 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

#### 7.1.1 Styling P6

The alarms are displayed by the flashing red LED of the START/PAUSE button; the three codes E10, E20, E40 are also shown in combination with one of the three LEDs above the START/PAUSE sensor. Alarms E9x and EHx show the entire code with the red LED + yellow LED, only alarm EHx is not accompanied by the buzzer sounding.

The table below illustrates the various combinations of LED lightings.

E10		E20		E40	
<b>Water fill difficulty (tap closed)</b>		<b>Drain difficulty (filter fouled)</b>		<b>Door open</b>	

The aforementioned alarms (for both versions) can be remedied directly by the end user.

Once the problem has been remedied, the alarm is no longer displayed, the red LED is switched off, returning to normal operation with the lighting of the yellow LED.

On the other hand, the alarms listed below (for both versions):

#### ↪ **EF0 – Water leakage (Aqua Control System)**

It is displayed to the user, but technical assistance is required to resolve it.

#### ↪ **EH0 – Voltage or frequency outside the normal values**

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

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

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

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

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

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

### 7.1.2 Styling P3.0

When a problem arises with the appliance, "WARNING" appears on the LCD screen, represented by a code (three digits, indicating the time required for the cycle to end). At the same time the buzzer gives off three short "beeps" every 20" for a period of 5 minutes.

Once the fault has been repaired the buzzer does not give off any "beeps" and the selected programme appears on the LCD screen.

Alarms E9x and EHx show the entire code with the red LED + yellow LED, only alarm EHx is not accompanied by the buzzer sounding.



**The alarms displayed to the user are listed below and can also be eliminated by the user:**

E10 – Water fill difficulty (tap closed)
E20 – Drain difficulty (filter dirty)
E40 – Door open
EF0 – Excessive detergent (if displayed)
E91 – No communication between the display board and the main board.Switch ON/OFF
E92/E93/E94 – Main board not configured correctly.

↪ **EF0 – Water leakage (Aqua Control System)**

It is displayed to the user, but technical assistance is required to resolve it.

↪ **EH0 – Voltage or frequency outside the normal values**

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

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

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

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

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

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

## 7.2 Alarm reading/display

### 7.2.1 Displaying the alarm (P3.0)

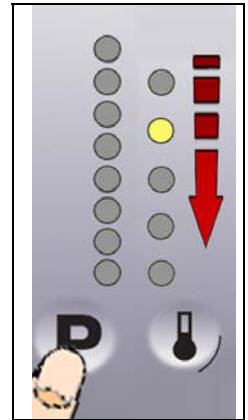
The last three alarms stored in the FLASH memory of the PCB can be displayed:

Enter the diagnostic mode (para. 6.1).

Irrespective of the type of circuit board and of the configuration, use sensor S1 to select the LED (see figure opposite) and the display indicates the last alarm.

To display previous alarms, touch the sensor closest to the START/PAUSE sensor in sequence (as shown in the figure)

To return to the last alarm, touch the START/PAUSE sensor.



### 7.2.2 Displaying the alarm (P6)

The alarm is displayed by a repeated flashing sequence of the START/PAUSE button red and green lights (0.5 seconds on, 0.5 seconds off with a 2.5 second pause between sequences).

- START/PAUSE button indicator with red light → indicates the first digit of the alarm code (family).
- START/PAUSE button indicator with yellow light → indicates the second digit of the alarm code (number inside the family).

These two LEDs can be found on all models.



#### Notes:

The first letter of the alarm code “E” (Error) is not displayed, since this letter is common to all alarm codes. Alarm code families are expressed in hexadecimals; and therefore the letters:

**A** is represented by **10** flashes

**B** is represented by **11** flashes

→ ...

**F** is represented by **15** flashes

















- Configuration errors are displayed by all LEDs flashing (user interface not configured).

### 7.2.3 Example of alarm display

If we take alarm E43 (problem with the door safety TRIAC) as an example; the following will be displayed:

The sequence of four flashes of the START/PAUSE button with the red light indicates the first number **E43**.

The sequence of three flashes of the START/PAUSE button with the yellow light indicates the second number **E43**.

START/PAUSE button with red light			START/PAUSE button with yellow light		
On/off	Time (Sec.)	Value	On/off	Time (Sec.)	Value
	0.5	1		0.5	1
	0.5			0.5	
	0.5	2		0.5	2
	0.5			0.5	
	0.5	3		0.5	<b>3</b>
	0.5			0.5	
	0.5	<b>4</b>		2.5	Pause
	0.5				
	1.5	Pause			

#### 7.2.4 Behaviour of the alarms during diagnostic testing

All alarms are enabled during diagnostic testing of the components.

### 7.2.5 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):

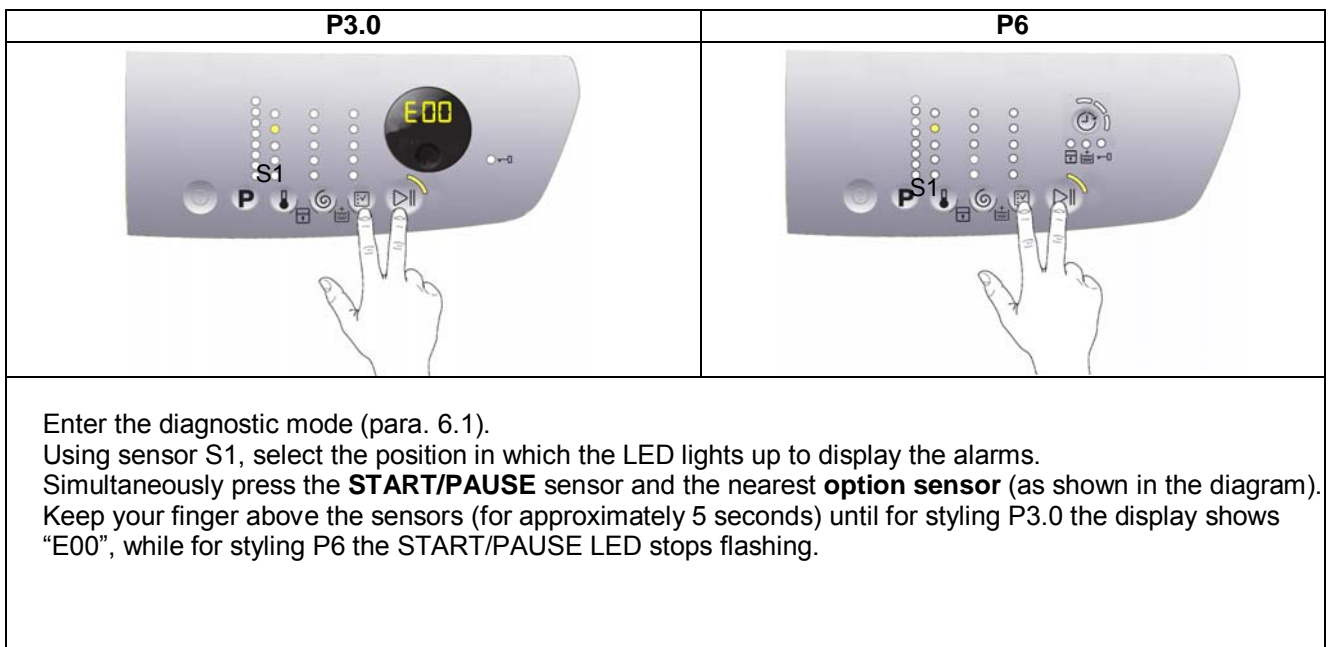
- Touch the **START/PAUSE** sensor and the nearest **option sensor** simultaneously (as if you were entering DIAGNOSTIC mode) and hold for at least 2 seconds: the LCD display shows the last alarm.
- The alarm will continue to be displayed until a sensor is touched.
- The alarm reading system is as described in para. 7.2.
- While the alarm is being displayed, the appliance continues to perform the cycle or, if in the programme selection phase, it stores the previously selected options.

### 7.2.6 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 (styling P3.0 only)

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

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

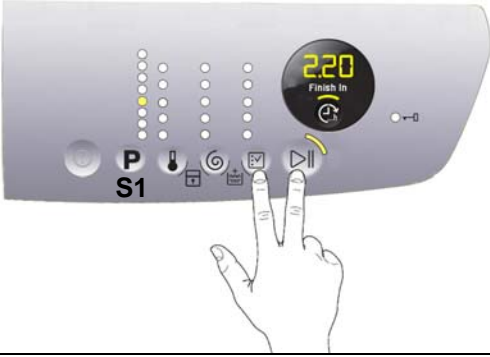
Only the operating time of normal programmes (and not diagnostic cycles) is counted.

The actual operating time for the cycle is counted (which does not include pauses, delayed start time, rinse hold time and soaking phases).

- The precision of the counter is 30 seconds per programme.
- Only whole hours of operation are counted (1hr and 59 min. = 1 hr).

### 8.1 Reading the operating time

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






Switch on the appliance using the ON/OFF button  
 Use sensor **S1** to select the position which lights up the **fifth** LED.  
 Simultaneously press the **START/PAUSE** button and the nearest **option sensor** (as shown in the diagram).  
 Keep your fingers over the sensors 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 example, if the operating time is **6,550** hours, the display will show the following sequence:

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

At the end of phase three (after the tens and units are displayed), the cycle is repeated.  
 To return to normal mode, either: switch off the appliance, press a key.

## 9 OPTIONS

### 9.1 Compatibility between options

		OPTIONS								
		Rinse hold	Pre-wash	Extra-rinse	Easy-iron	Economy	Cupboard Dry	Super Quick	Spin Speed Reduction	No Spin
Compatibility with OPTIONS	Rinse hold		X	X	X	X	X	X		
	Pre-wash	X		X	X	X	X	X	X	X
	Extra-rinse	X	X		X	X	X	X	X	X
	Easy Iron	X	X	X		X	X	X	X	X
	Economy	X	X	X	X			X	X	X
	Cupboard Dry	X	X	X	X				X	X
	Super Quick	X	X	X	X	X			X	X
	Spin Speed Reduction		X	X	X	X	X	X		
	No Spin		X	X	X	X	X	X		
Phases where selection/ modification is possible	Selection	X	X	X	X	X	X	X	X	X
	Pre-wash	X		X	X				X	X
	Wash	X		X	X				X	X
	Rinses	X								
	Spin									

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



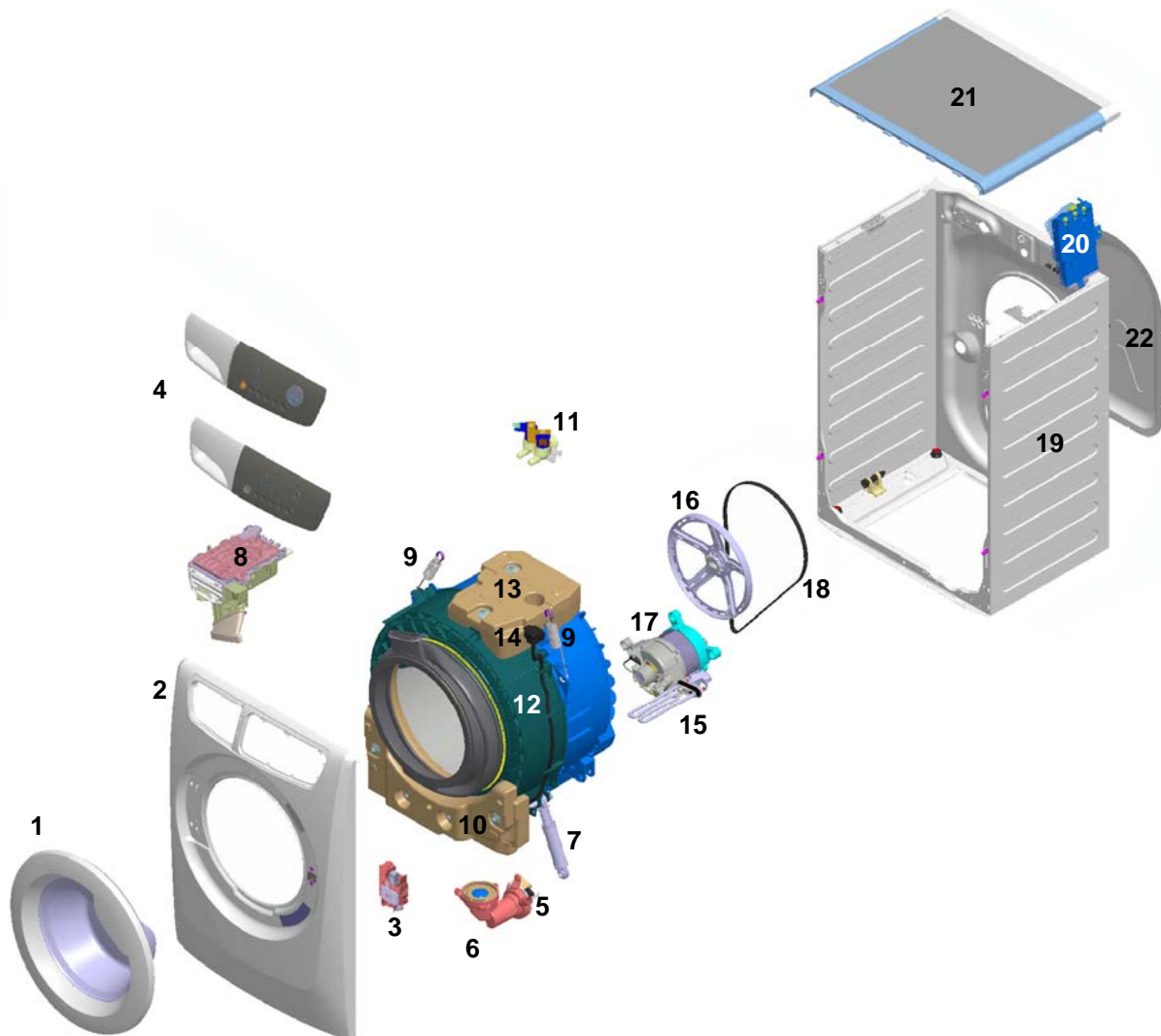
## 9.2 Description of options

- **Rinse hold**
  - During the cycle the intermediate rinses and spins are performed.
  - Stops the appliance with water in the tub before the final spin cycle.
  - Once the Rinse Hold has ended, the appliance rotates the drum every two minutes for up to a maximum of 18 hours, after which it stops.
  - To drain the water, simply press the START/PAUSE button to run the drain and spin cycles.
- **Pre-wash**
  - Adds a pre-wash phase at the start of the cycle with water heating to 30 °C (or cold, if selected).
  - In COTTONS and SYNTHETICS cycles, performs a short spin before passing on to the washing phase.
  - This option cannot be selected for WOOL and HAND WASH cycles.
- **EXTRA-rinse**
  - Add **two** rinses to the cycles where featured.
  - Eliminates the spin at the end of washing.
- **No spin**
  - It eliminates all the spin phases.
  - It adds three rinses to the COTTON cycle and one to the SYNTHETIC FABRICS 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.
- **No spin**
  - It eliminates all the spin phases.
  - It adds three rinses to the COTTON CYCLE and one to the SYNTHETIC FABRICS cycle.
- **Daily**

Modifies the structure of the COTTONS – SYNTHETICS – DELICATES cycles to obtain good washing performance in a short space of time.
- **Super quick**
  - Modifies the structure of the wash phase of the COTTONS – SYNTHETICS – DELICATES cycles by half a load.
- **Delayed start time**
  - Adds a pause before the start of the programme:
  - Styling P6 the delay time is displayed by the corresponding LEDs see page 15.
  - Styling P3.0 see description on page 20 “Finish In”.
  - 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.
- **Easy-iron**
  - In COTTON programmes:
  - Adds three rinse cycles
  - Eliminates intermediate spin cycles
  - Performs a pulse spin phase before the final spin
  - Adds an “untangling” phase after the spin cycle
  - In SYNTHETIC FABRICS programmes:
  - Reduces the heating temperature in 50/60 °C cycles to 40 °C
  - Increases the wash time
  - Prolongs the cooling phase at the end of the wash phase
  - Adds one rinse cycle
  - Adds an “untangling” phase after the pulse spin cycle

## 10 TECHNICAL CHARACTERISTICS

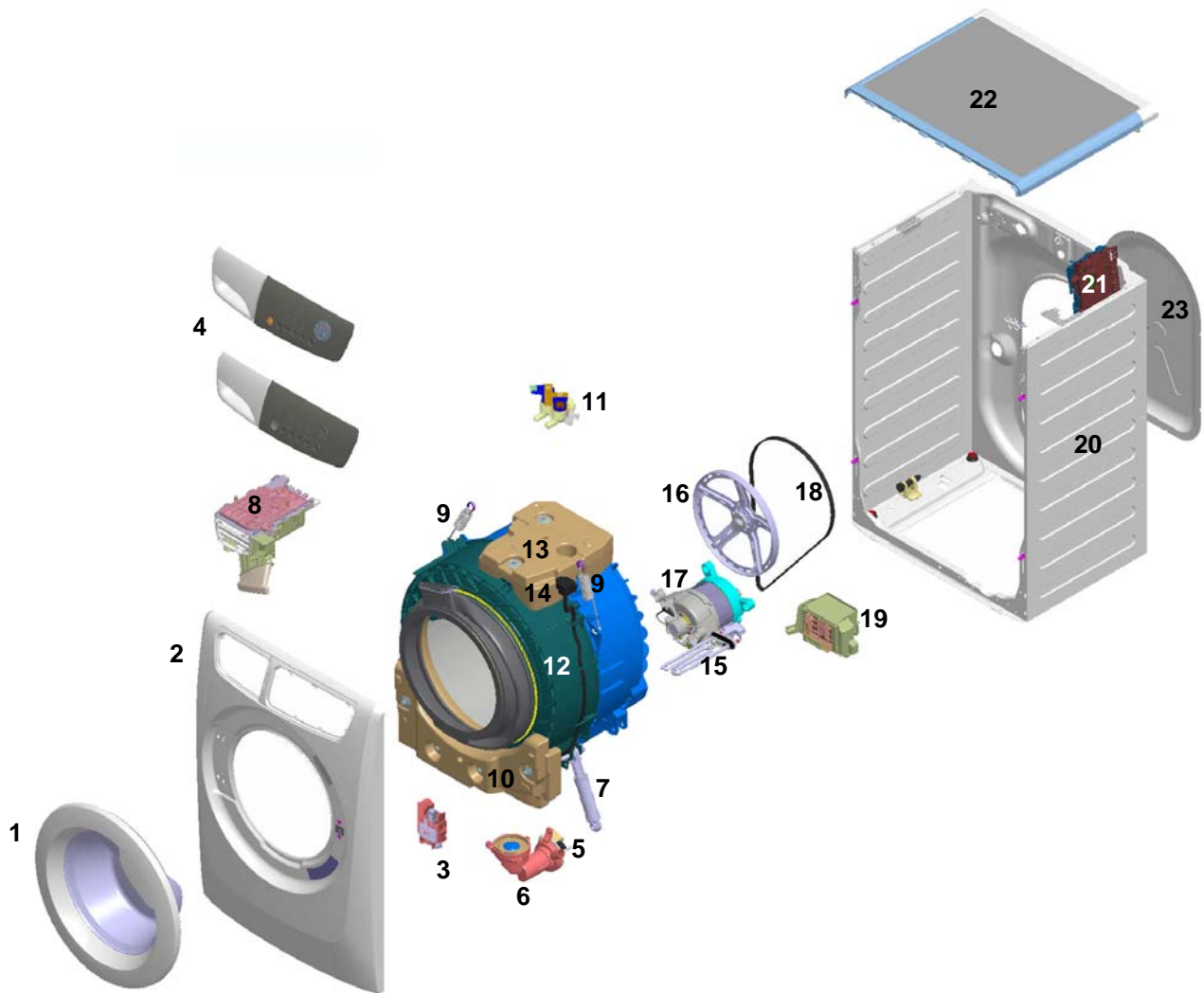
### 10.1 Construction characteristics (universal motor)



1. Door
2. Front panel
3. Door Lock
4. Control panel
5. Drainage pump
6. IDB (with drain filter)
7. Shock absorbers
8. Detergent dispenser
9. Washing unit suspension springs
10. Front counterweight
11. Solenoid valves

12. Upper counterweight
13. Analogue pressure switch
14. Heating
15. Pulley
16. Motor
17. Belt
18. Back unit casing
19. Main electronic circuit board
20. Worktop
21. Back panel

## 10.2 Construction characteristics (three-phase motor, Inverter)



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

### 10.3 Detergent dispenser

New detergent dispenser assembly, with a dispenser assembly incorporated at the front, which is inserted into the detergent inlet pocket of the appliance door bellow seal.

Operating principle of the conveyor.

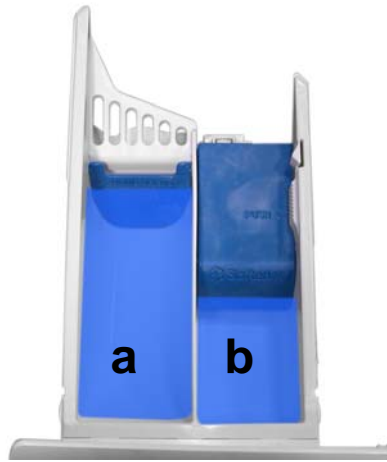


<p style="text-align: center;"><b>Water fill directly to tub (pre-wash solenoid)</b></p> <p>There is no pre-wash compartment. If necessary, the detergent must be introduced directly into the drum.</p>	
<p style="text-align: center;"><b>Water fill to wash compartment (wash solenoid)</b></p> <p>In all models: compartment "a" is used to contain the detergent loaded at the start of the washing. In the event of stains, mix stain removers with the washing detergent (for powder detergent).</p>	
<p style="text-align: center;"><b>Water fill to conditioner compartment (pre-wash and wash solenoid valves)</b></p> <p>In all models: compartment "b" is used to contain the conditioner, which is removed with the water of the last rinse.</p>	

## 10.4 Detergent drawer

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

A flap has been fitted inside compartment “a” 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 page 70).

Flip the flap down to use liquid detergent.



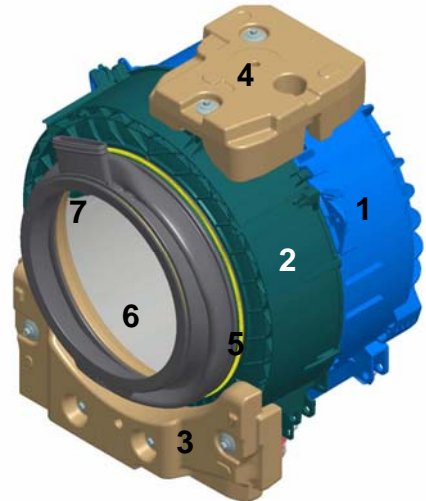
For further details, read the instruction manual.

## 10.5 Washing unit

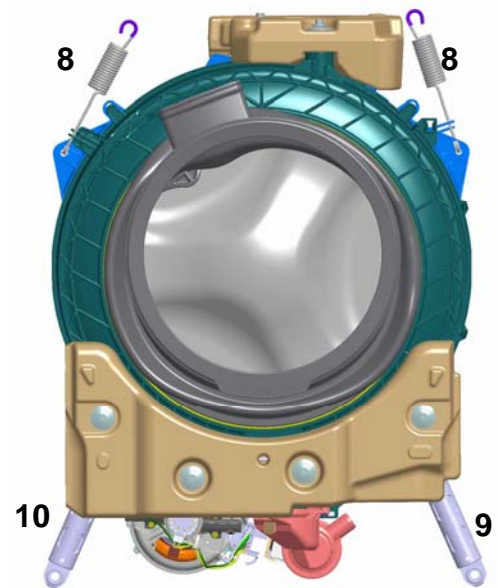
WASHING UNIT		
Type	Load capacity (cottons)	Drum volume
	max.	
P49	7/8 kg	53 litres

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 the washing movements and during the spin phases, the two counterweights are secured in place with screws: one at the front (3) and one at the top (4). The bellow seal (5) is fixed at the front.



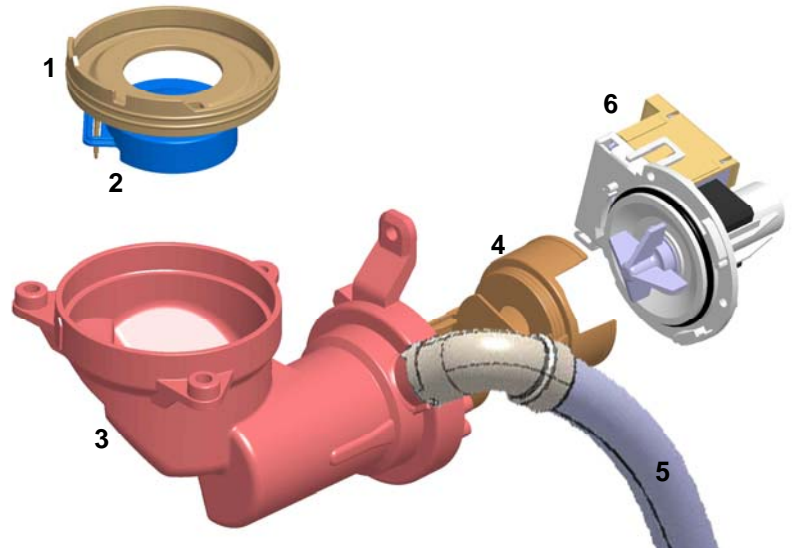
The washing unit is suspended by two coil springs (8) attached to the top crosspiece, and the oscillations are dampened by two shock absorbers, one on the right (9) and one on the left (10) (looking straight at the front of the appliance).



## 10.6 Water circuit

### 10.6.1 OKO/IDB version drain circuit

1. Diaphragm ring
2. Floating valve
3. IDB (Integrated Drain Body)
4. Filter or needle trap
5. Drain pipe
6. Drainage pump

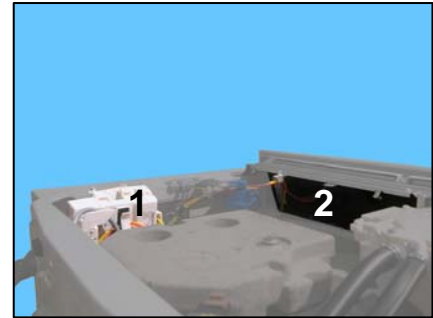


For further details, see page 87

## 10.7 Electronic control

The electronic control is made up of:

1. Main electronic circuit board.
2. Control/display circuit board.
3. INVERTER motor control board where featured (not shown in the figure).



The control/display PCB contains: the display (where featured), to display the programme information; the touch sensors, to adjust the temperature, the spin speed and possibly select an option, the START/PAUSE button, the ON/OFF button and lastly the LEDs which (when lit) indicate the selections made.

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

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

It controls the state of the door.

It controls the speed of the motor.

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

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

It controls the flow of water through the solenoid valve via the flowmeter (where featured).

To guarantee proper performance of the washing cycle.

### 10.7.1 Programming/Updating the main circuit board



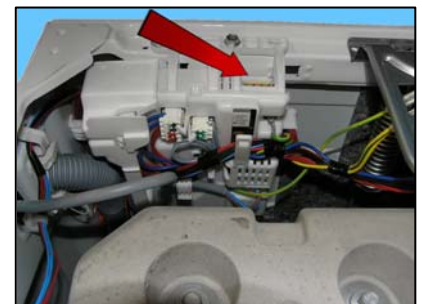
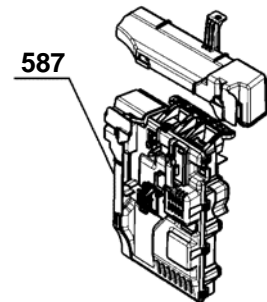
- Any programming/updating/diagnostics operation carried out with the board installed on the appliance and the mains plug disconnected from the socket.
- If one of these operations is accidentally carried out when plugged in to the socket, on completing the operation, the appliance will remain turned 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.

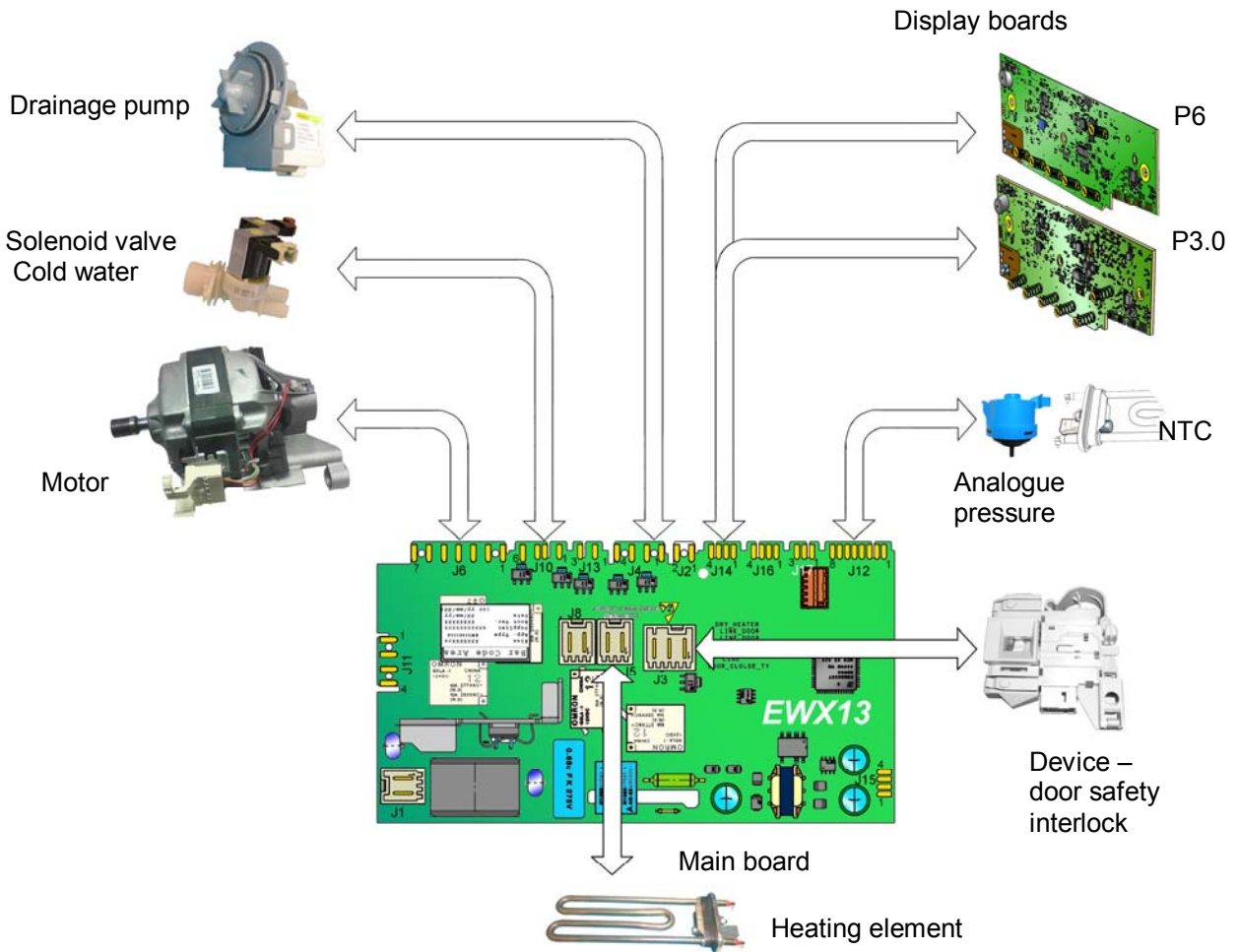
The circuit board can be programmed/updated using the **Sidekick** application. For further information, please refer to the instructions provided/illustrated in the course entitled << **Sidekick Guide** >> at the link (<http://electrolux.edvantage.net>) on the Electrolux Learning Gateway portal.

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

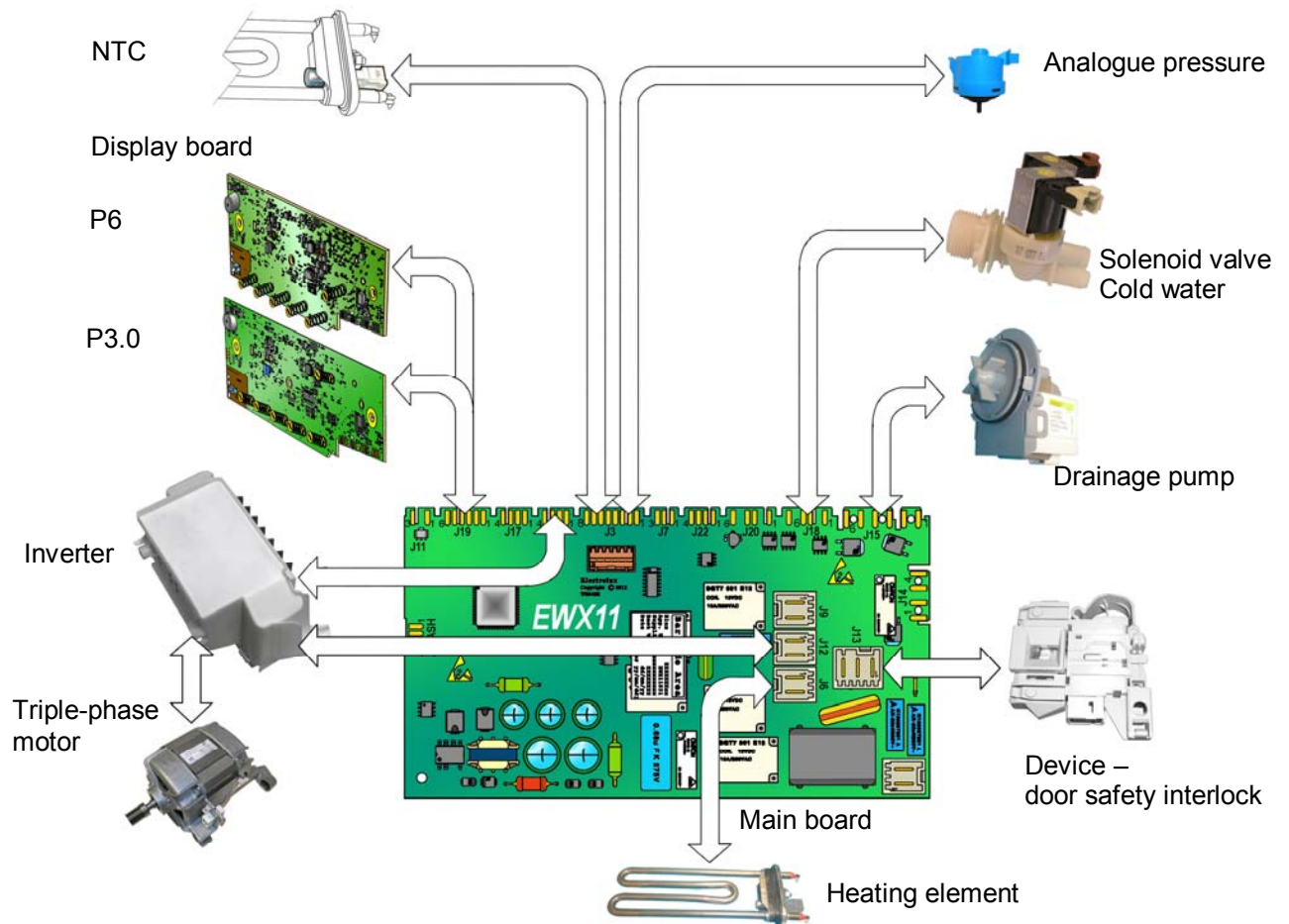




**10.7.2 Electrical characteristics with universal motor**



**10.7.3 Electrical characteristics with three-phase motor and Inverter**



# 11 ELECTRICAL COMPONENTS



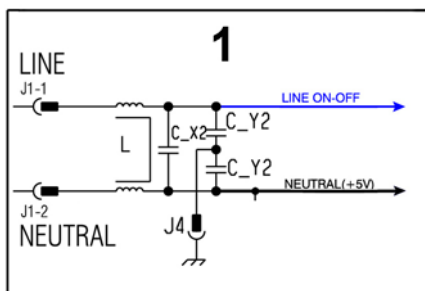
- **When replacing any of the components, please refer to the code shown in the list of spare parts relating to the appliance being repaired.**

## 11.1 Noise filter

### 11.1.1 General characteristics

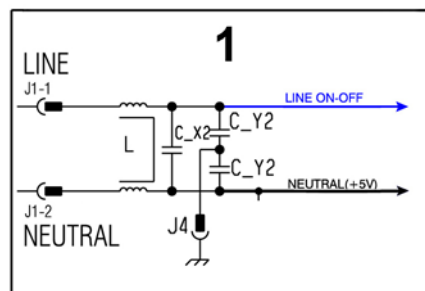
This device is connected to the electricity power line input of the appliance and avoids the emission of radio frequency disturbances in the power network. It is incorporated into the main board.

Diagram with universal Motor



1. Main electronic circuit board

Diagram with Inverter



1. Main electronic circuit board

## 11.2 Display board



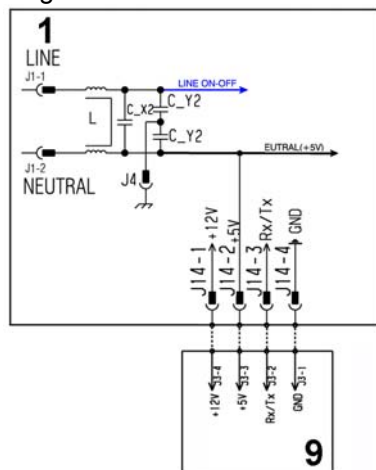
- **Warning the sensors located in the display boards could be at a potential of 220 Volts.**

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

The programmes can be selected by touching the related touch sensor, which can also be used to: Select options, start or pause the appliance.

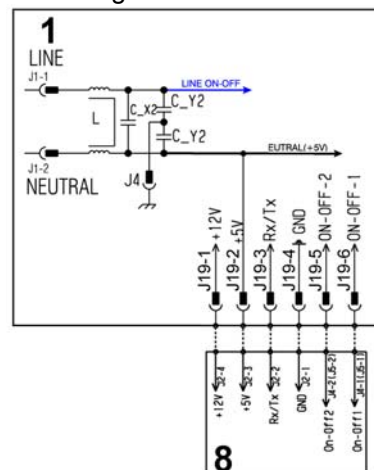
The buzzer - where featured - is powered by the display board.

Diagram with universal Motor



1. Main electronic circuit board  
9. Display board

Diagram with Inverter



1. Main electronic circuit board  
8. Display board

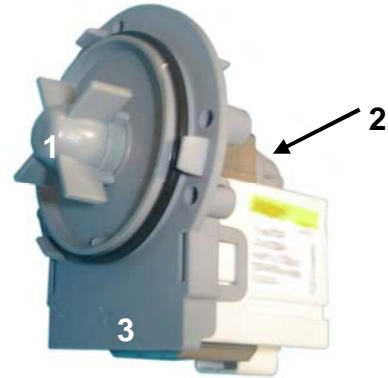
### 11.3 Drainage pump



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

#### 11.3.1 General characteristics

1. Wheel
2. Rotor
3. Stator



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

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

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

#### Important

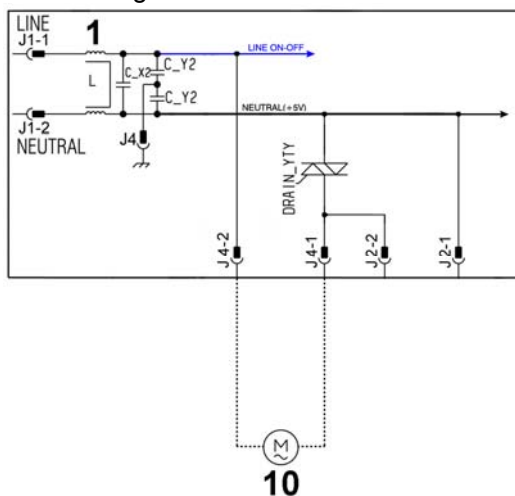
*Synchronous pumps, when powered on empty (disconnected from the water circuit), may not start in some cases because their very construction makes them need an antagonist torque on the wheel to allow the rotor to move in one of the two directions.*

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

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

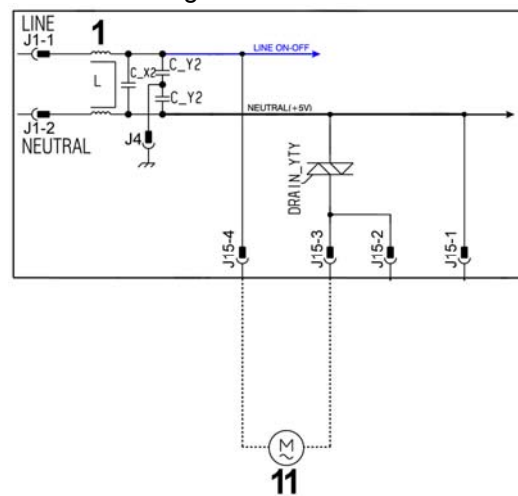
- ↪ For a pre-determined period (and an alarm might be displayed - see table of alarms).
- ↪ Until the electronic pressure switch closes on empty, after which the pump is actuated for a brief period or passes to the subsequent phase.

Diagram with universal Motor




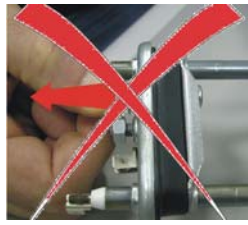
- 1 Main electronic circuit board  
10 Drainage pump

Diagram with Inverter



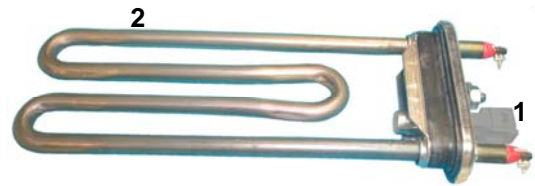
- 1 Main electronic circuit board  
11 Drainage pump

## 11.4 Heating element

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

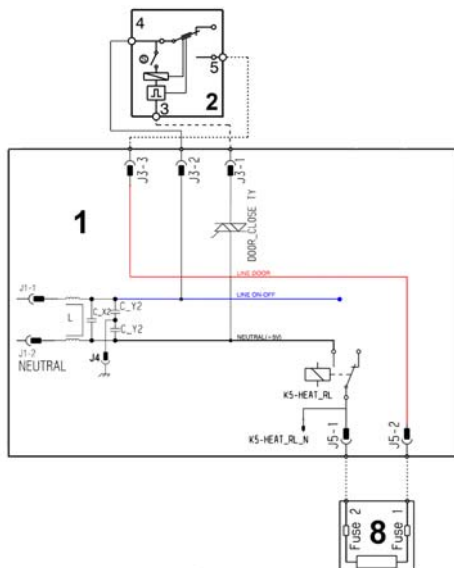
4. NTC probe
5. Heating element



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

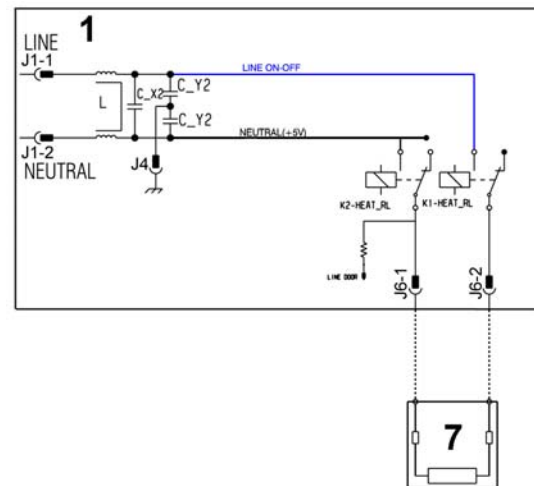
It is powered by the relays located on the circuit board. It is fitted with two thermal fuses which trip if the temperature of the heating element exceeds the values for which they were calibrated. (In the event of a fault an alarm will be displayed - see table of alarms.)

Diagram with universal Motor




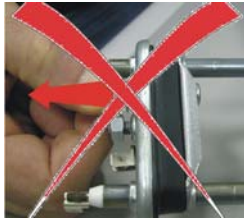
1. Main electronic circuit board
2. Door safety interlock
8. Heating element

Diagram with Inverter

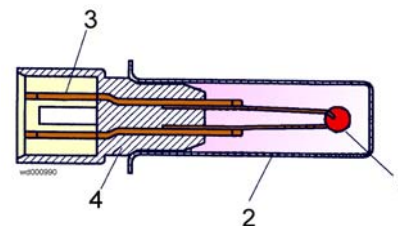


1. Main electronic circuit board
7. Heating element

## 11.5 Temperature probe

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

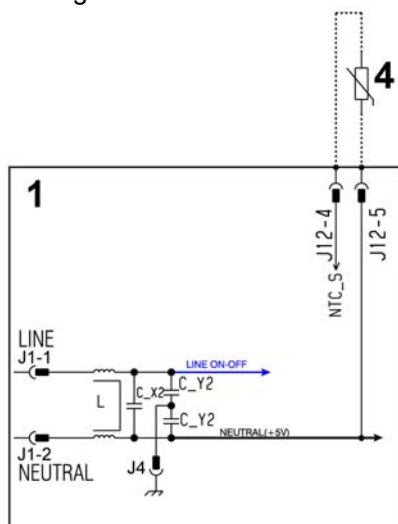


1. *NTC heating element*
2. *Metal capsule*
3. *Terminals*
4. *Plastic casing*

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

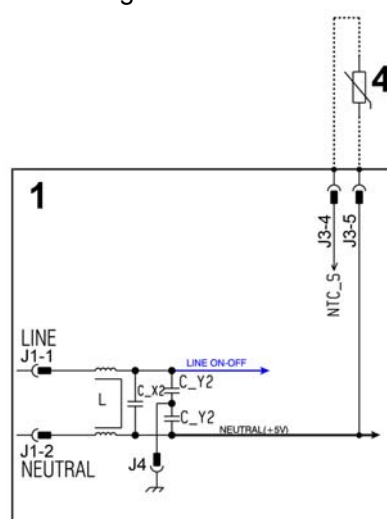
The temperature of the water is controlled by the circuit board by means of an NTC temperature probe incorporated in the heating element.

Diagram with universal Motor



1. *Main electronic circuit board*
4. *NTC probe*

Diagram with Inverter



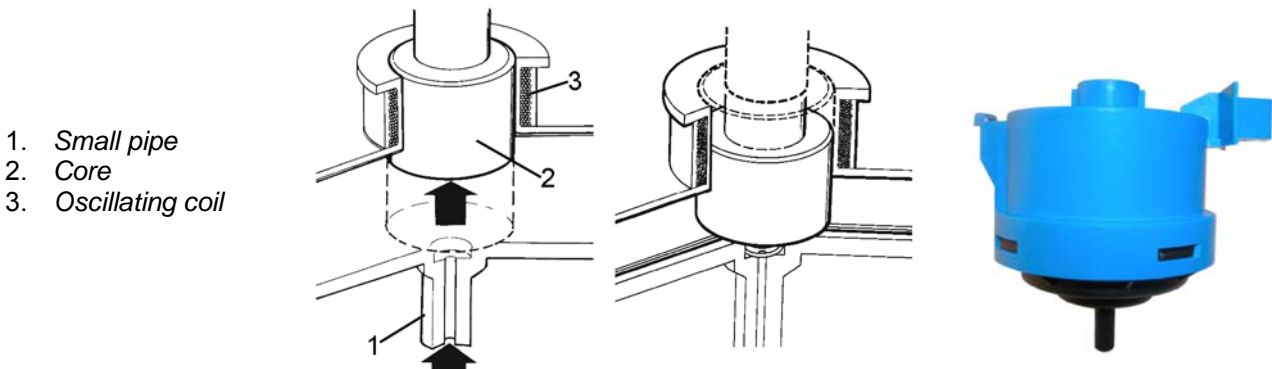
1. *Main electronic circuit board*
4. *NTC probe*

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

## 11.6 Analogue pressure switch

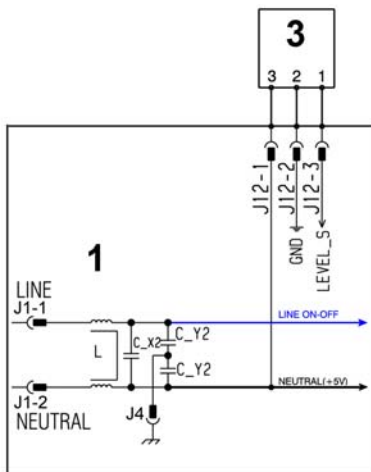
### 11.6.1 General characteristics

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.



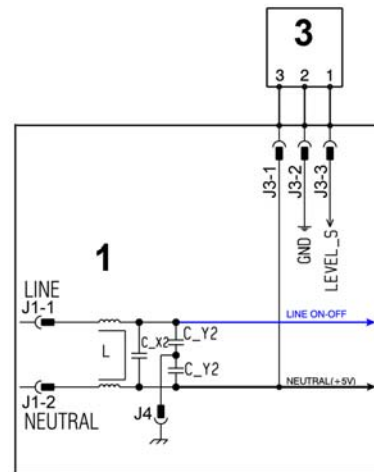
The pressure switch is connected via a pipe to the pressure chamber. When water is introduced into the tub, this creates a pressure inside the hydraulic circuit that causes the membrane to change position. This in turn modifies the position of the core inside the coil, thus changing the inductance and the frequency of the oscillating circuit. The PCB recognises how much water has been introduced into the tub according to the frequency.

Diagram with universal Motor



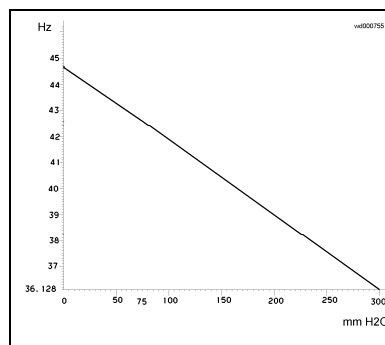
1. Main electronic circuit board  
3. Analogue pressure switch

Diagram with Inverter



1. Main electronic circuit board  
3. Analogue pressure switch

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



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

## 11.7 Door safety interlock PTO (Pull To Open)

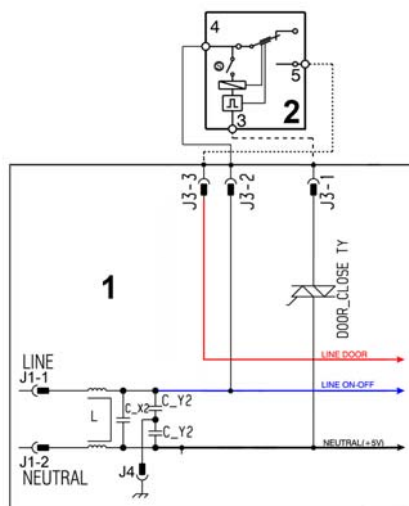
### 11.7.1 General characteristics

This appliance is not fitted with a safety device featuring the traditional fastening latch which necessitated the removal of the handle to open the appliance door. The new safety device uses a new hook version with a hole in the middle, shown by the arrow (see figure) and you pull the handle to open the appliance door.



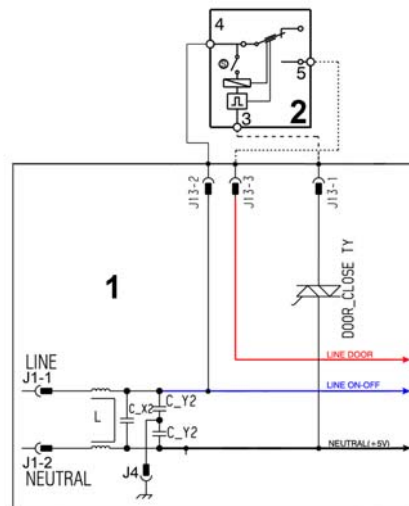
The instantaneous door interlock allows the door to be opened as soon as the drum stops, if the conditions described hereafter are met.

Diagram with universal Motor



1. Main electronic circuit board  
2. Door safety interlock

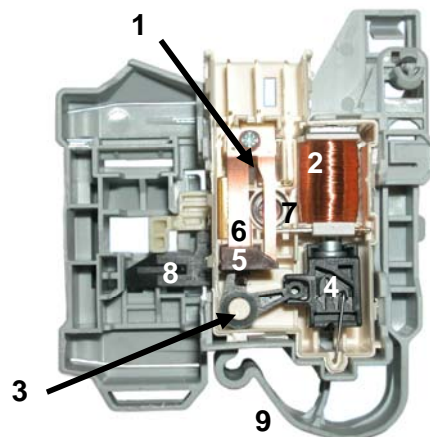
Diagram with Inverter



1. Main electronic circuit board  
2. Door safety interlock

### 11.7.2 Operating principle

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



When the programme starts (start/pause button) the main circuit board sends a voltage pulse, lasting 20msec., to the solenoid valve (2) (at least 6 seconds should have passed since turning it on), which moves the cam (4) to a locking position; the blocking pin (5) is pushed, locking the cursor (8), which moves behind the ratchet (2) to prevent it from turning, locking the latch inside the lock (see subsequent figures); simultaneously the main switch contacts are shut (6).

- ↩ When the programme ends or the Start/Pause button is pressed, the circuit board sends two additional 20 msec pulses (200 msec apart):
- 2. The first pulse moves the cam (4) by another position, without releasing the pin (5).
- 3. The second pulse (which is only sent if everything is in working order) moves the cam (4) to another position, which causes the pin (5) to return to its position and therefore release the interlock; the contacts of the main switch are simultaneously opened.

#### Solenoid protection

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

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

#### Appliance door/door open conditions

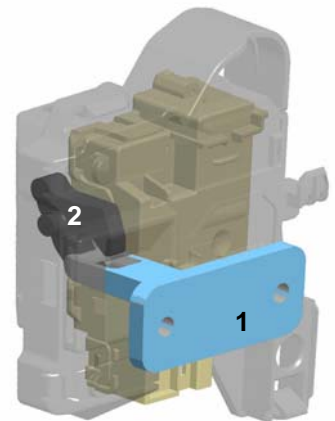
Before pulses are sent to release the door, the PCB checks for the following conditions:

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

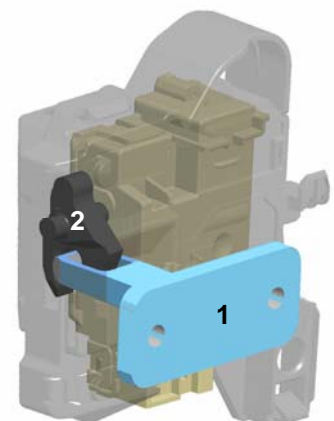
#### 11.7.2.1 Mechanical operation

- 1 *Hook*
- 2 *Ratchet*

When the appliance door closes, the hook (1) fits inside the ratchet (2).



Which, turning on itself, hooks onto and locks the ratchet in place.



If the appliance is switched off or paused and the appliance handle is pulled, the hook is released from the ratchet (2), effortlessly, whereas if the START/PAUSE button has been pressed, the cursor (8) - being locked - does not allow the ratchet to turn (2) so the fastening latch is locked for the entire wash cycle.



### 11.7.3 Manual opening of the appliance door

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

With the new safety device (PTO) the appliance door remains closed and necessitates manual door opening, according to the instructions provided below:

Before proceeding with the manual opening of the appliance door, check:

- 1 That the drum is stationary.
- 2 If the water is above the lower level of the appliance door, drain off the water; if possible set a drainage programme (see point 4) or unplug the appliance from the mains socket, disconnect the main drain pipe, lay it on the ground and drain off the water (see point 5).
- 3 If the water is not above the lower level of the door, then it can be opened manually.
- 4 Unplug the appliance from the socket.
- 5 Activate the manual opening system.

To access the manual opening, proceed as follows:

Remove the worktop (see para. 65).

Press the plastic arch placed above the door safety device twice (shown by the dotted arrow) in order to trigger the cam which leverages and releases the cursor to allow the hook to be removed from the fastening latch.



Pull the handle

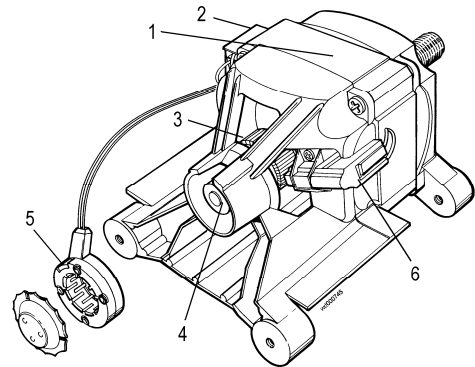


## 11.8 Universal motor

### 11.8.1 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



### 11.8.2 Operating principle

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

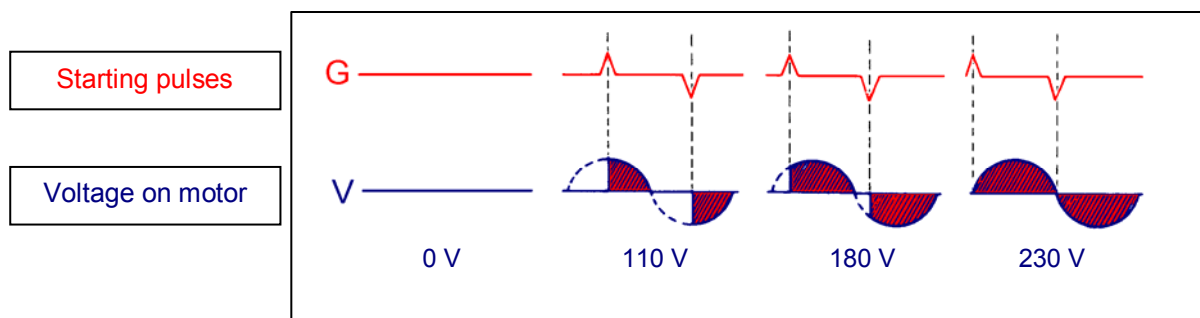
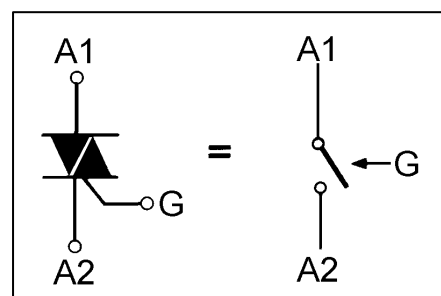
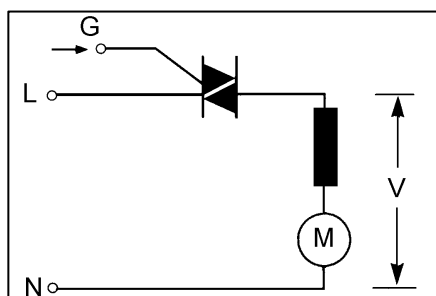
Every section of the rotor winding is connected to a pair of collector blades (also referred to as a switching device). The electrical contact between the collector and the fixed circuit is made by two static brushes on the collector blades.

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.

#### 11.8.2.1 Motor speed control

- This is achieved by an electronic control, by varying the voltage (V) applied to the motor.
- The method adopted is the “phase partialization” command of the TRIAC. The TRIAC is an electronic bidirectional switch. Closing of the circuit between A1-A2 (anodes) occurs when there are appropriate starting pulses on gate (G).



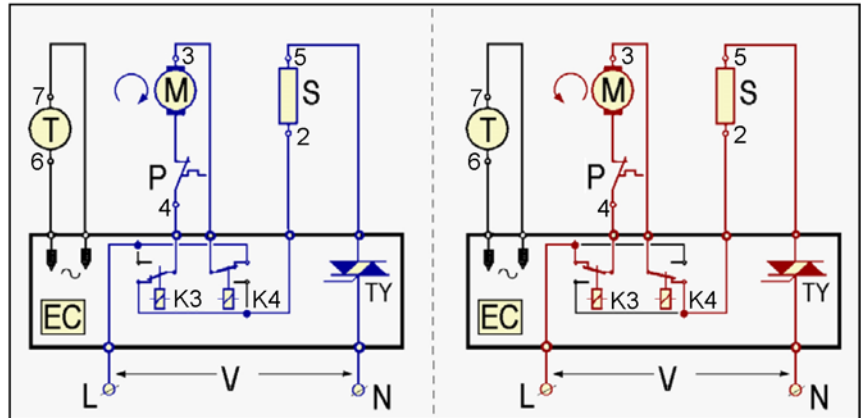
### 11.8.2.2 Direction of rotation of the motor

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 circuit board relay contacts.

**Clockwise rotation**

**Anti-clockwise rotation**

- EC Electronic control
- P Overheating cut-out (motor)
- S Stator
- M Rotor
- T Tachometric generator
- TY TRIAC
- K3, 4 Inversion relay



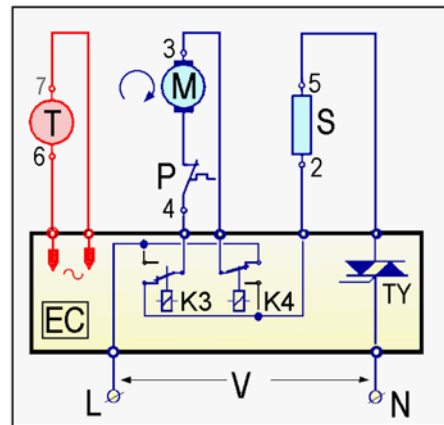
### 11.8.2.3 Tachometric generator

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.

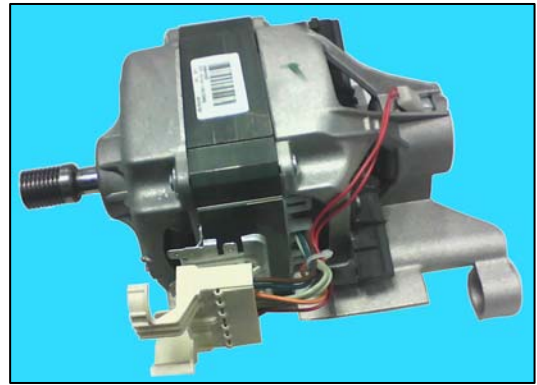
A tachometric generator, consisting of a magnet secured to the shaft and a coil, generates a voltage depending on the speed of the rotor, which is sent to the electronic control.

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.

- EC Electronic control
- P Overheating cut-out (motor)
- S Stator
- M Rotor
- T Tachometric generator
- TY TRIAC
- K3, 4 Inversion relay

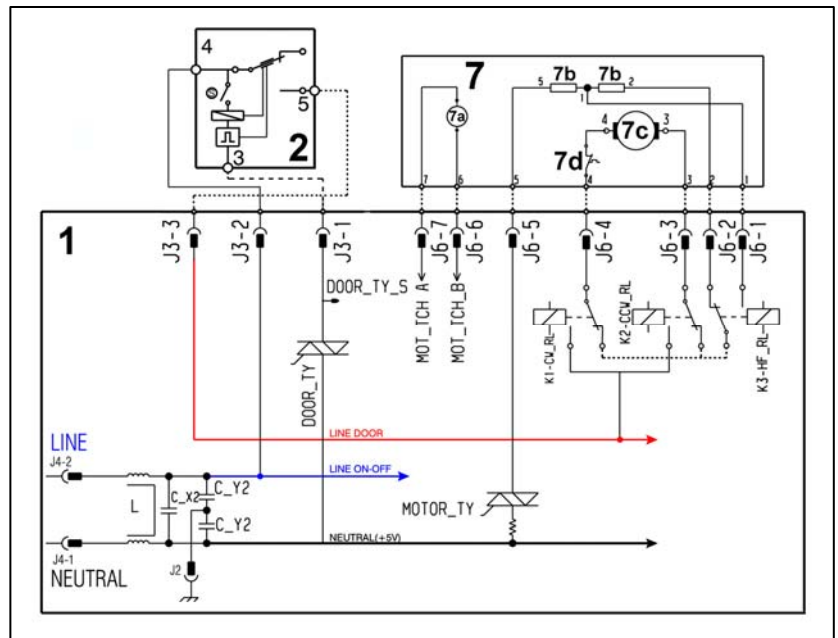


### 11.8.3 Power supply to motor



The PCB powers the motor via a TRIAC switch; the direction of rotation is reversed by switching the contacts on the two relays (K1-K2), which modify the connection between the rotor and the stator. In certain models, a third relay (K3) is used to power the stator (full or half) according to the spin speed. The motor speed is controlled by the signal from the tachometric generator. During the spin phases, the micro-processor performs the anti-foam and the anti-balancing check procedure.

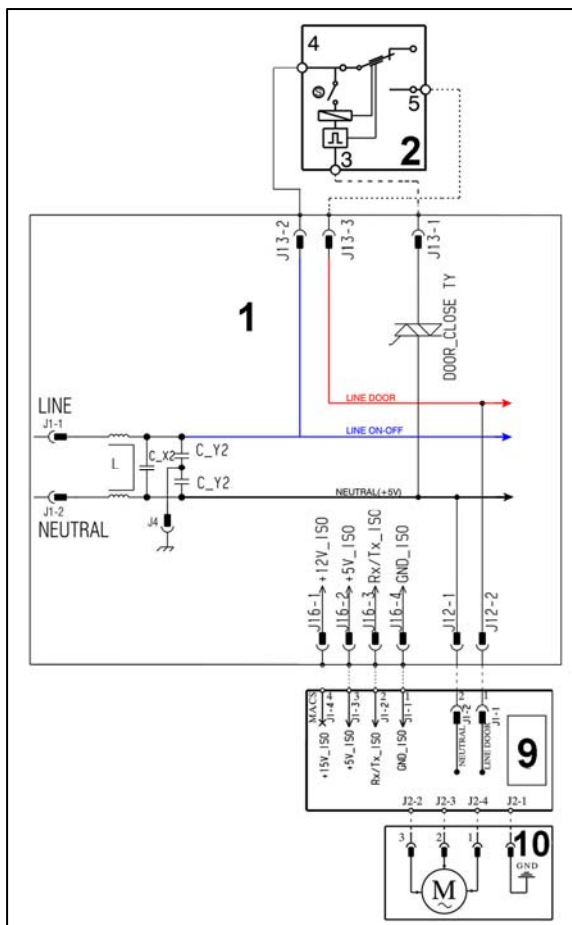
- 1. Main electronic circuit board
- 2. Door safety interlock
- 7. Universal motor
- 7a. Tachometric generator (motor)
- 7b. Stator (motor)
- 7c. Rotor (motor)
- 7d. Thermal cut-out (motor)



## 11.9 Three-phase asynchronous motor – Inverter

### 11.9.1 General characteristics

- 1 Main electronic circuit board
- 2 Door safety interlock
- 9 Inverter
- 10 Motor



### 11.9.2 Power supply to motor

Three-phase power is fed by the inverter (10), which sends through the connectors J2-2 J2-3 J2-4 the three phases to connectors 1-2-3 on the motor (nodes U-W-V), where the windings (Y-X-Z) are connected. The phase shift between the phases is  $120^\circ$  and peak amplitude is 310 V.

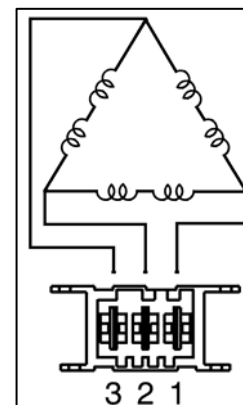
It is possible to get an idea of the efficiency of the motor by measuring the resistance of the coils:

Coil y ohm 5.35  $\sim \pm 7\%$  (contacts 2-3)

Coil x ohm 5.35  $\sim \pm 7\%$  (contacts 1-2)

Coil z ohm 5.35  $\sim \pm 7\%$  (contacts 1-3)

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



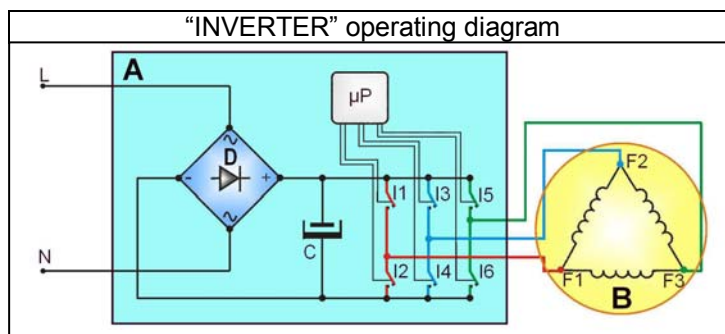
## 11.10 Inverter

### 11.10.1 General characteristics

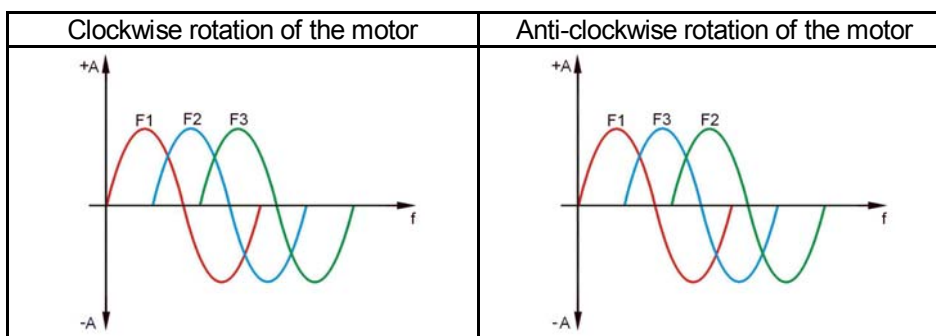
The EWX11831 electronics use a new asynchronous motor, with 2 poles, three-phase, with high performance and low noise levels.



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



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



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



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

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

## 11.11 Anti-foam control system

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

- **Spin with little foam:** if the pressure switch senses a “full” level, the spin phase is interrupted, the drain pump continues to operate and, when the pressure switch senses “empty”, the spin phase is resumed.
- **Spin with excess 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.

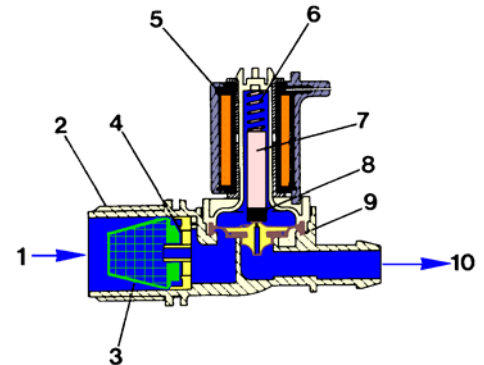
## 11.12 Solenoid valves

### 11.12.1 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.

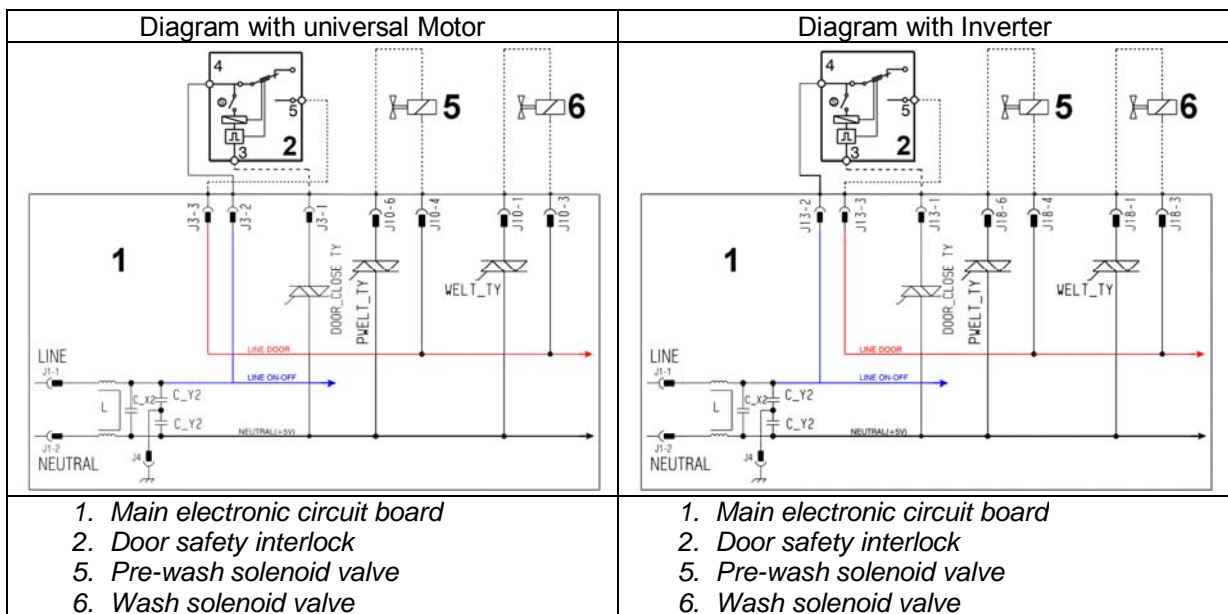
1. Water inlet
2. Solenoid valve body
3. Filter or needle trap
4. Flow reducer
5. Coil
6. Spring
7. Moving core
8. Rubber
9. Membrane
10. Water outlet



### 11.12.2 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.



### 11.12.3 Mechanical jamming of the solenoid valve

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

### 11.12.4 Low water pressure

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



## 12 ALARM SUMMARY TABLE

Alarm	Description	Possible fault	Machine status/action	Reset
E00		No alarm		
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
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 is paused (after 2 attempts)	START ON/OFF 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" circuit faulty	Main circuit board faulty.	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 is 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
E41	Door open	Check whether the door is closed properly; Wiring faulty; Door safety interlock faulty; Main circuit board faulty.	Cycle is 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 is 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

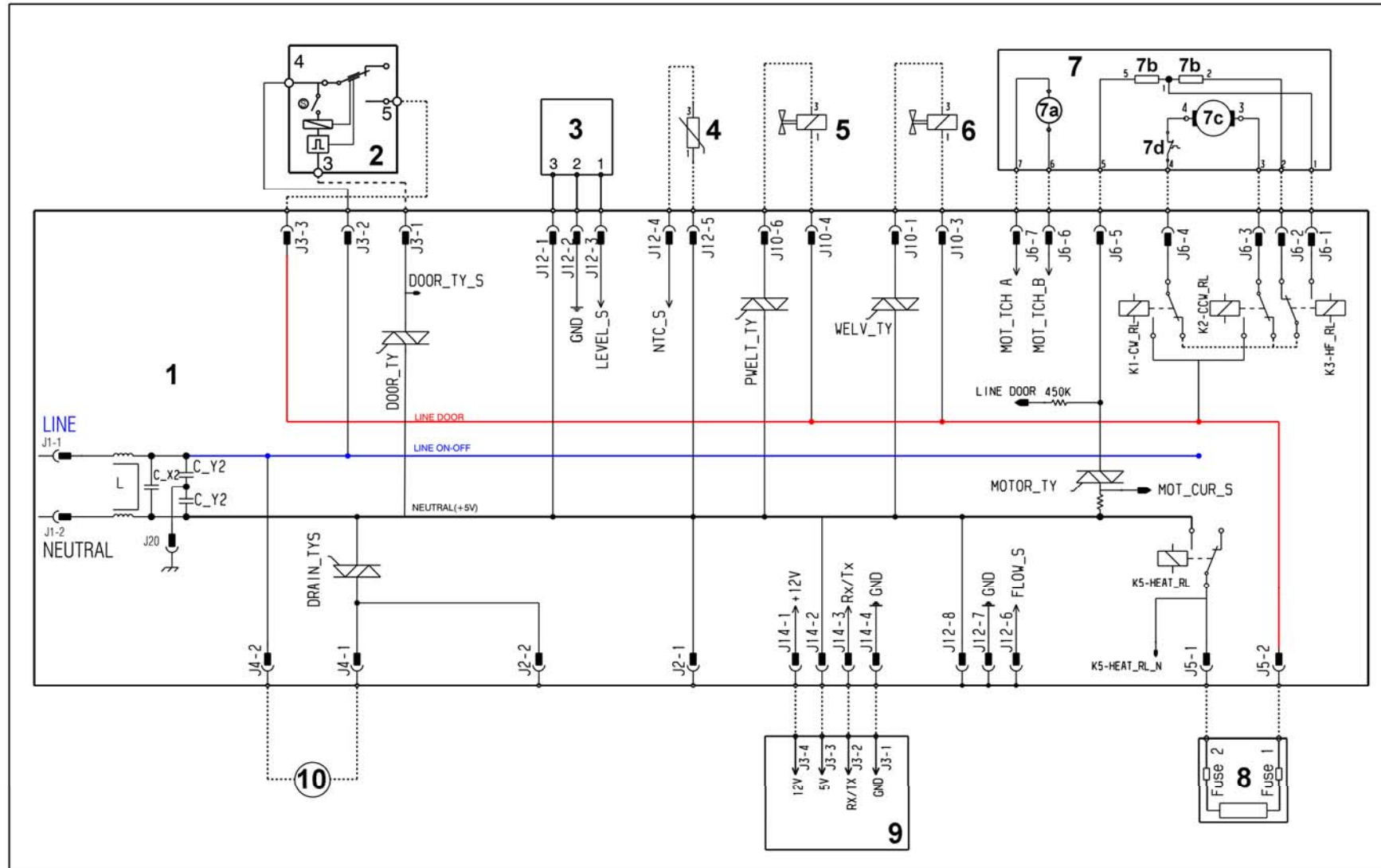
Alarm	Description	Possible fault	Machine status/action	Reset
E52	No signal from motor tachometric generator	Wiring faulty; Motor faulty; Inverter board faulty.	Cycle stops with door locked (after 5 attempts)	ON/OFF RESET
E53	Faulty sensing by motor TRIAC	Main circuit board faulty.	Cycle blocked	RESET
E54	Motor relay contacts sticking	Current leakage from motor or from wiring; Main PCB faulty.	Cycle blocked (after 5 attempts)	RESET
E57	Inverter is drawing too much current (>15°)	Wiring faulty on inverter for motor; Inverter PCB faulty; Motor faulty.	Cycle stops with door locked (after 5 attempts)	ON/OFF RESET
E58	Inverter is drawing too much current (>4.5°)	Motor malfunction (overload); Wiring faulty on inverter faulty; Motor faulty; Inverter PCB faulty.	Cycle stops with door locked (after 5 attempts)	ON/OFF RESET
E59	No rotation of the motor	Wiring faulty on inverter for motor; Inverter PCB faulty; Motor faulty.	Cycle stops with door locked (after 5 attempts)	ON/OFF RESET
E5A	Overheating on heat dissipator for Inverter	Overheating caused by continuous operation or ambient conditions (let appliance cool down); Inverter PCB faulty; NTC open (on the Inverter PCB).	Cycle stops with door locked (after 5 attempts)	ON/OFF RESET
E5C	Input voltage is too high	Input voltage is too high (measure the grid voltage); Inverter PCB faulty.	Cycle stops with door locked (after 5 attempts)	ON/OFF RESET
E5d	Data transfer error between Inverter and main PCB	Line interference; Wiring faulty; Faulty main PCB or inverter PCB.	-----	ON/OFF RESET
E5E	Communication error between Inverter and main PCB	Faulty wiring between main PCB and inverter PCB; Inverter PCB faulty; Main PCB faulty.	Cycle blocked (after 5 attempts)	ON/OFF RESET
E5F	Inverter PCB fails to start the motor	Wiring faulty; Inverter PCB faulty; Main PCB faulty.	Cycle stops with door open (after 5 attempts)	ON/OFF RESET
E5H	Input voltage is lower than 175 V	Wiring faulty; Inverter PCB faulty.	Cycle stops with door locked (after 5 attempts)	ON/OFF 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)	Earth leakage between heating element and earth; 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 PCB faulty.	-----	START ON/OFF RESET
E6A	Heating relay sensing faulty	Main circuit board faulty.	Cycle stops with door locked	RESET
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

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
E84	Recirculation pump TRIAC "sensing" circuit faulty	Main circuit board faulty.	Safety drain cycle - Cycle stops with door open	RESET
E85	Circulation pump TRIAC switch faulty	Wiring faulty; Recirculation pump faulty; Main PCB faulty.	Safety drain cycle - Cycle stops with door open	RESET
E87	Display board microprocessor faulty	If this continues, replace the display board.	No action to be taken	START ON/OFF RESET
E91	Communication error between main PCB and display	Wiring faulty; Control/display circuit board faulty; Inverter Board 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	Communication error between main PCB - Inverter	Incompatibility between main PCB and Inverter.	Cycle blocked	ON/OFF
E9C	Display board configuration error	Display board faulty.	-----	START ON/OFF RESET
E9E	Display board sensor/touch key faulty	Display board faulty.	-----	ON/OFF
EC1	Electronically controlled valve blocked with operating flowmeter	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
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 drain	ON/OFF RESET
EF4	Water fill pressure too low, no signal from flowmeter and electronically controlled valve is open	Tap closed; Water fill pressure too low.	-----	RESET
EF5	Unbalanced load	Final spin phases skipped.	-----	START/RESET

<b>Alarm</b>	<b>Description</b>	<b>Possible fault</b>	<b>Machine status/action</b>	<b>Reset</b>
<b>EF6</b>	<b>Reset</b>	If it continues, replace the main board.	No action to be taken	-----
<b>EH1</b>	<b>Appliance power supply frequency out of limits</b>	Problem with the power supply network (incorrect/disturbed); Main PCB faulty.	Wait for nominal frequency conditions	ON/OFF
<b>EH2</b>	<b>Supply voltage too high</b>	Problem with the power supply network (incorrect/disturbed); Main PCB faulty.	Wait for nominal voltage conditions	ON/OFF
<b>EH3</b>	<b>Supply voltage too low</b>	Problem with the power supply network (incorrect/disturbed); Main PCB faulty.	Wait for nominal voltage conditions	ON/OFF
<b>EHE</b>	<b>Inconsistency between FCV relay (in the main board) and safety "sensing" circuit</b>	Faulty wiring; Main circuit board faulty.	Safety drain cycle Cycle stops with door open	RESET
<b>EHF</b>	<b>Safety sensing circuit faulty (wrong input voltage to microprocessor)</b>	Main circuit board faulty.	Safety drain cycle Cycle stops with door open	RESET

# 13 DIAGRAMS

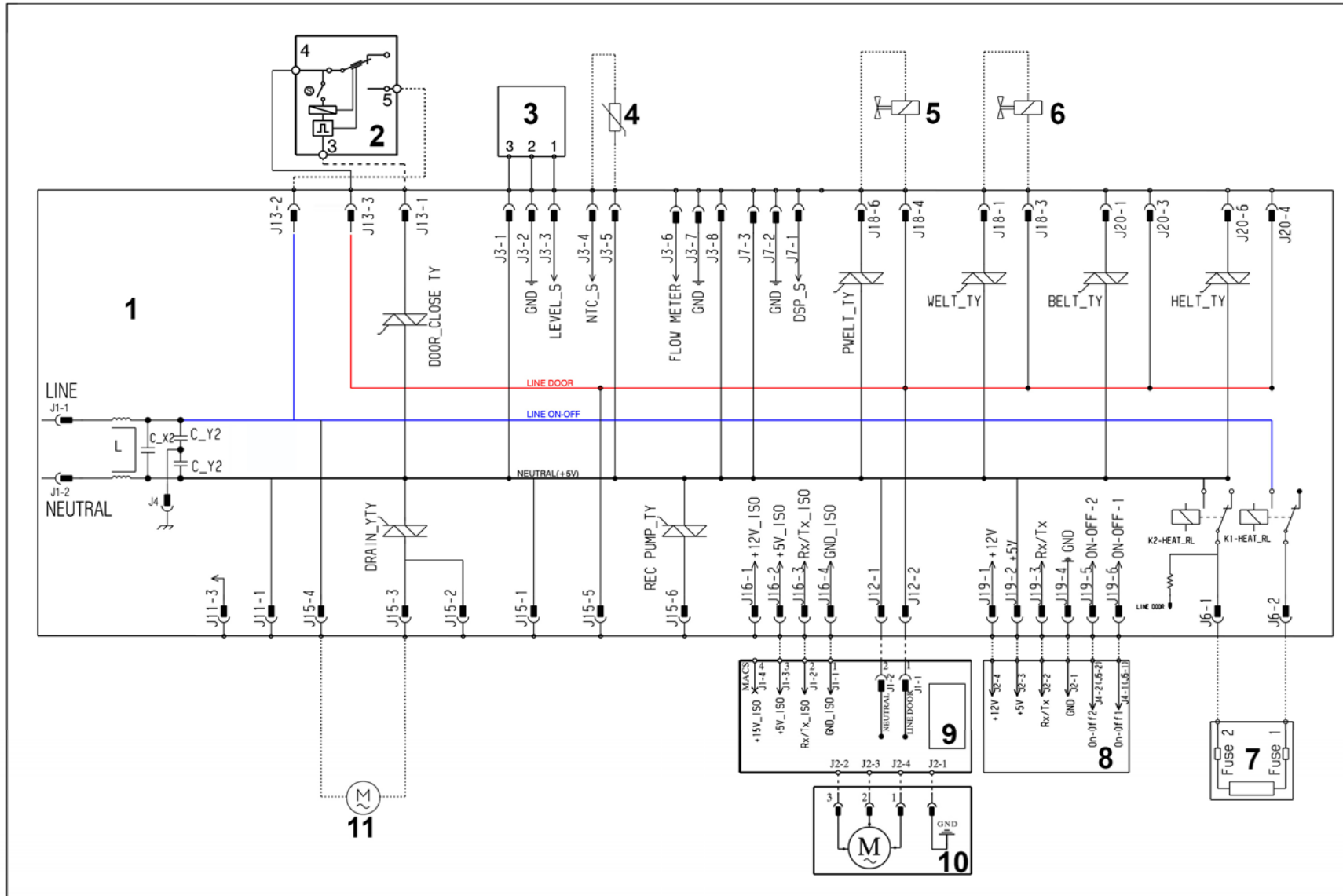
## 13.1 Operating Circuit Diagram EWX13611 (with universal motor)



### 13.2 Key to operating circuit diagram EWX13611 (with universal motor)

Appliance electrical components	PCB components	
<ol style="list-style-type: none"> <li>1. Main electronic circuit board</li> <li>2. Door safety interlock</li> <li>3. Electronic pressure switch</li> <li>4. NTC</li> <li>5. Pre-wash solenoid valve</li> <li>6. Wash solenoid valve</li> <li>7. Universal motor</li> <li>7a. Tachometric (motor)</li> <li>7b. Stator (motor)</li> <li>7c. Rotor (motor)</li> <li>7d. Thermal cut-out (motor)</li> <li>8. Heating element</li> <li>9. Display board</li> <li>10. Drainage pump</li> </ol>	<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>

### 13.3 Operating Circuit Diagram EWX11831 (with three-phase motor)



### 13.4 Key to operating circuit diagram EWX11831 (with three-phase motor)

Appliance electrical components	PCB components
<ul style="list-style-type: none"> <li>1 Main electronic circuit board</li> <li>2 Door safety interlock (instantaneous)</li> <li>3 Electronic pressure switch</li> <li>4 NTC (washing)</li> <li>5 Pre-wash solenoid valve</li> <li>6 Wash solenoid valve</li> <li>7 Heating element</li> <li>8 Display board</li> <li>9 Motor control board (Inverter)</li> <li>10 Triple-phase motor</li> <li>11 Drainage pump</li> </ul>	<ul style="list-style-type: none"> <li>DRAIN_YTY Drain pump TRIAC</li> <li>DOOR_TY Door interlock TRIAC</li> <li>DOOR_CLOSE_TY Door interlock TRIAC</li> <li>PWELT_TY Pre-wash solenoid TRIAC</li> <li>WELV_TY Wash solenoid TRIAC</li> <li>K1 Heating element relay</li> <li>K2 Heating element relay</li> </ul>



## 14 ACCESSIBILITY (appliances with universal motor)

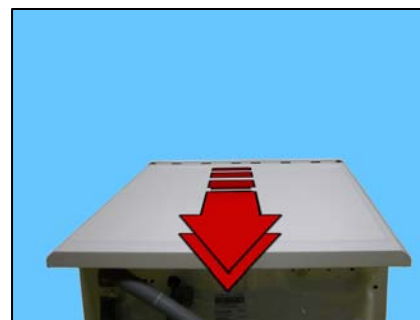
Make sure you wear gloves, because parts of the cabinet are sharp.

### 14.1 Worktop

Remove the screws that secure it to the back panel.

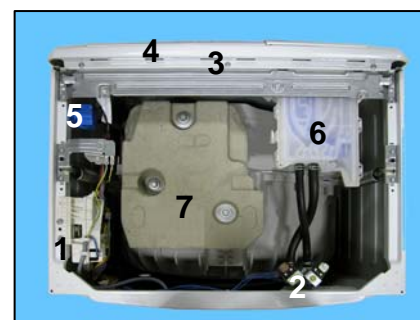


Pull it out from the back.



### 14.2 From the worktop, you can access

1. Main board
2. Solenoid valve
3. Display board/light diffuser/buttons/buttons springs assembly
4. Control panel
5. Analogue pressure switch
6. Detergent dispenser
7. Upper counterweight

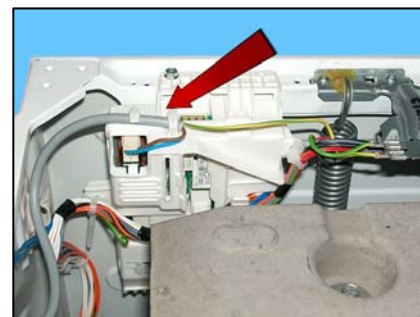


#### 14.2.1 Main board

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

Remove the worktop (see relevant paragraph).

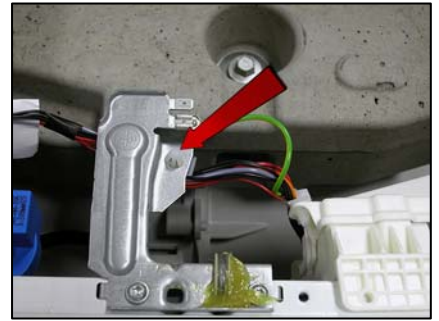
Remove the power cable from the hooks that hold it close to the board.  
Slide off the connector.



Unfasten the two screws securing it to the cabinet.



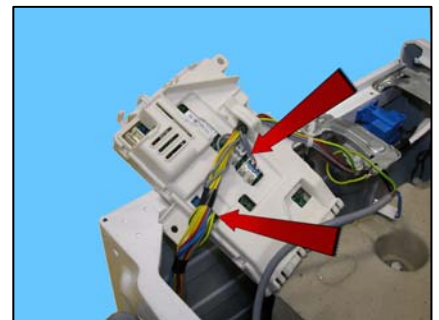
Remove the clamp that secures the wiring to the spring support bracket.



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

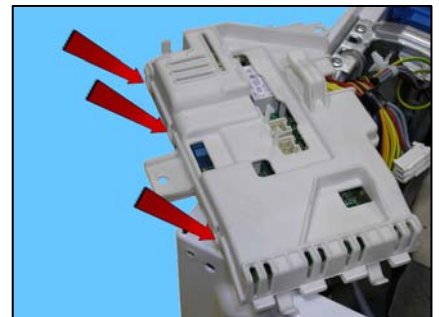


Position the board assembly as shown in the figure. Remove the connectors and the faston that connects the earth (beware as it is fitted with an anti-sliding stop).

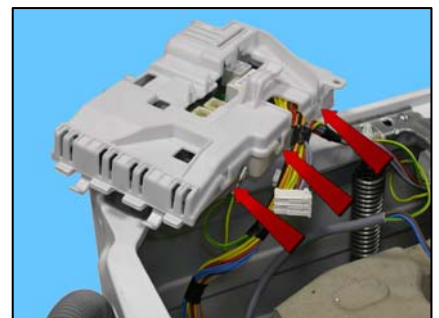


Remember to use the anti-sliding kit.

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



and on the other.



Lift the lid.



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



Remove the connectors.



Board



When reassembling:

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

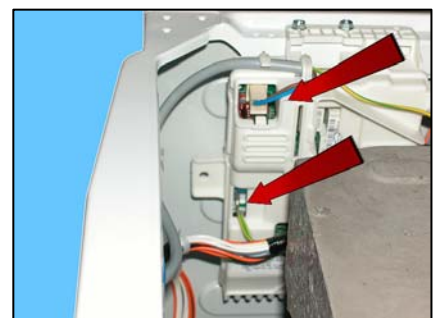


Fit the connectors into their proper slots and arrange the wiring as shown in the figure.



Before securing the side clamp:

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



### 14.2.2 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.



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.



### 14.2.3 Display board assembly

Remove the worktop (see relevant paragraph).

Remove the two screws securing the detergent drawer to the control crosspiece.



Loosen the screws which secure the control crosspiece to the cabinet.



Loosen the screws which secure the front panel to the control crosspiece.



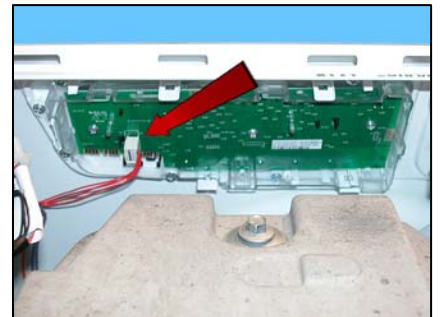
Remove the clamp that secures the wiring.



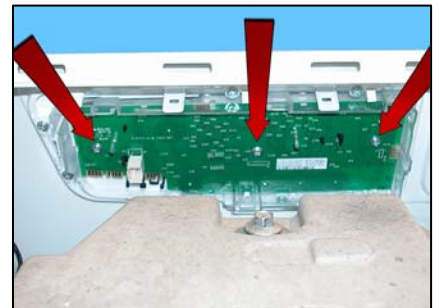
Remove the crosspiece.



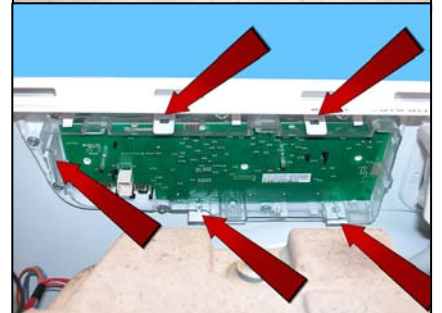
Disconnect the connector.



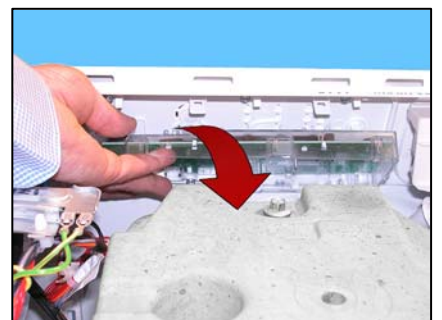
Using a small cross-head screwdriver, loosen the three screws (shown by the arrows) securing the display board assembly to the control panel.



Delicately release the hooks which secure the display board to the control panel, taking care not to break them. Start with the top ones and work anti-clockwise, continuing with the side one and lastly the bottom ones.



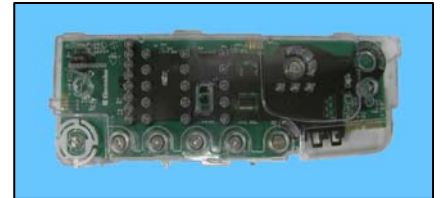
Turn the display board assembly and remove it.



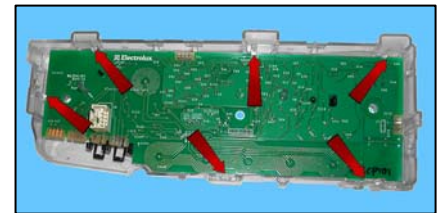
Make sure the ON/OFF button spring (shown by the arrow) does not fall into the appliance.



Display board assembly.



To remove the display board from its protection, pull it out of the hooks shown by the arrows in the figure.



Display board.



#### 14.2.4 Control panel

Remove the worktop (see relevant paragraph).

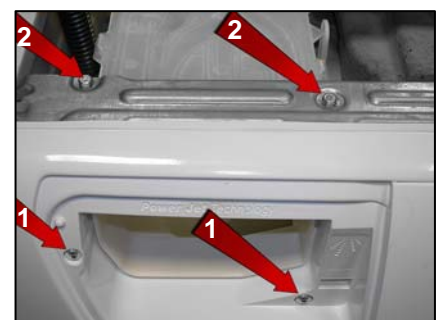
Take out the detergent dispenser while at the same time pressing on its sides to pull it out (otherwise pull sharply).



Unfasten the two screws securing it to the control panel (1).  
Unfasten the two screws securing it to the crosspiece (2).

When reassembling, repeat these steps in the reverse order.  
Tighten the screws that secure it to the control panel at a torque of 2.5 Nm.

Move the detergent dispenser towards the inside of the appliance.



Loosen the screws which secure the control crosspiece to the cabinet.



Loosen the screws which secure the front panel to the control crosspiece.



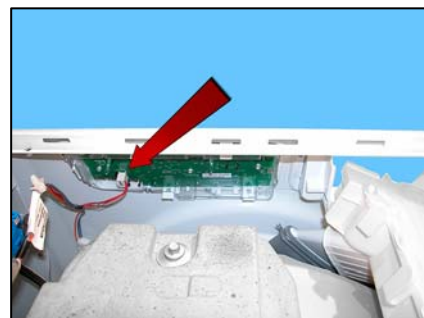
Remove the clamp that secures the wiring.



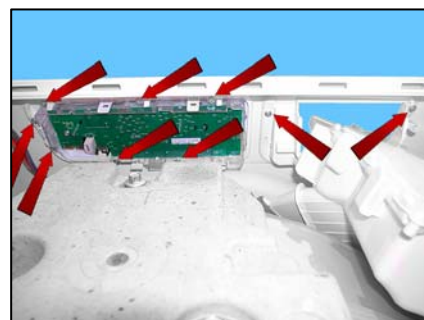
Remove the crosspiece.



Disconnect the connector.

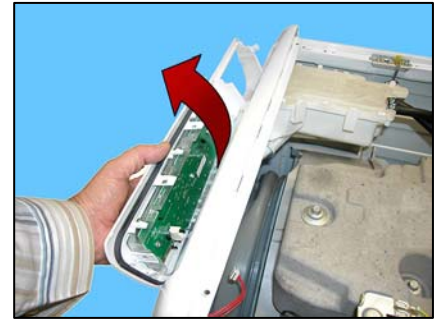


Using a small cross-head screwdriver, loosen the screws (shown by the arrows) securing the control panel to the front panel.



Release the hooks that secure the control panel to the front panel, which are situated beside the screw seats (except for the screws beside the detergent dispenser).

Extract the control panel.



Remove the three screws which secure the display board assembly to the control panel.



Release the hooks securing the display board assembly to the control panel.

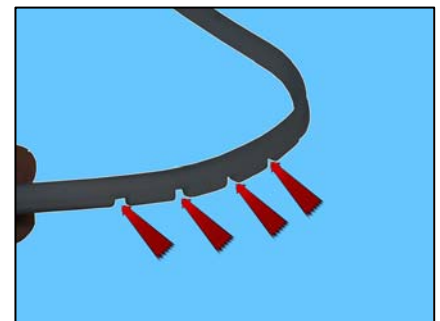


On the control panel, a small wall has been created around the display board seat, which is surrounded by a seal, which prevents any water seepage from coming into contact with the display board itself.

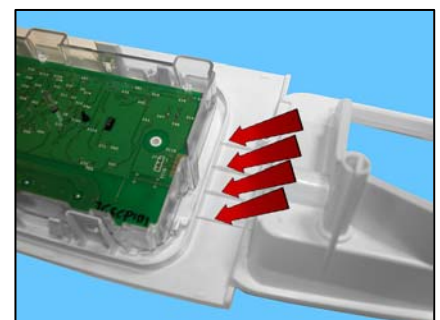


When reassembling:

Place the four reference marks featured in the seal (shown by the arrows).



Against the four reference marks featured on the control panel.





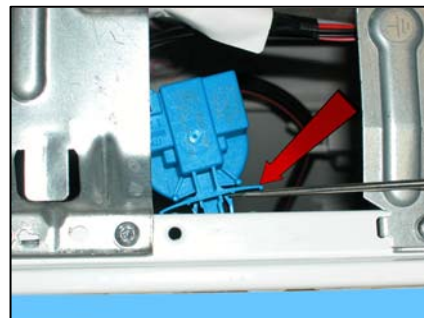
### 14.2.5 Analogue pressure switch

Remove the worktop (see relevant paragraph).

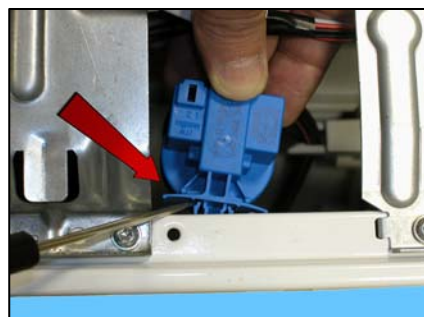
Remove the connector (red arrow)



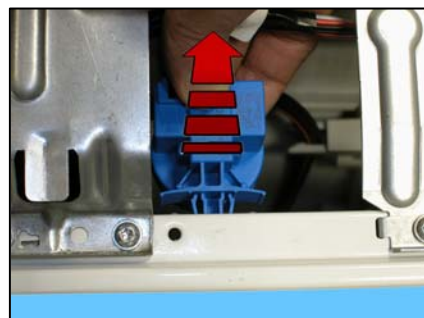
Tighten the tabs which secure it to the cabinet, first on one side



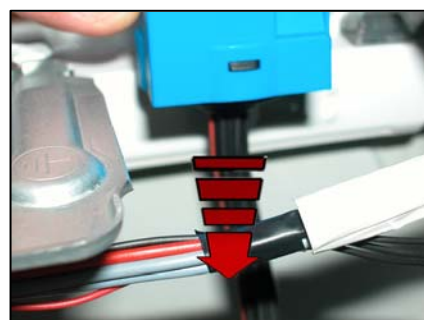
then on the other.



Take it out.

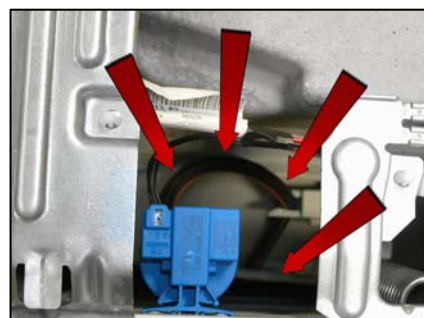


Pull out the small tube which connects it to the pressure chamber.



When reassembling the pressure switch, repeat these steps in the reverse order.

arrange the pipe as shown in the figure, making sure it does not touch the counterweight and position it in its purpose-provided seats incorporated into the welded tub (shown by the arrows). To prevent the pipe from coming into contact with the unit while the appliance is in operation.



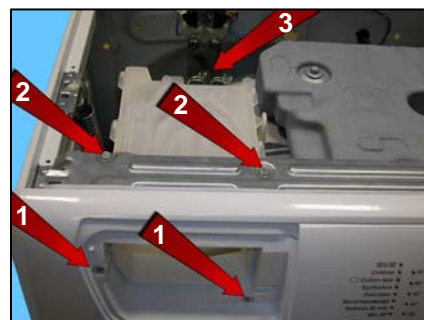
### 14.2.6 Detergent dispenser

Remove the worktop (see relevant paragraph).

Take out the detergent dispenser while at the same time pressing on its sides to pull it out (otherwise pull sharply).



Unfasten the two screws securing it to the control panel (1).  
Unfasten the two screws securing it to the crosspiece (2).  
Remove the pipes that connect it to the solenoid valve (3).

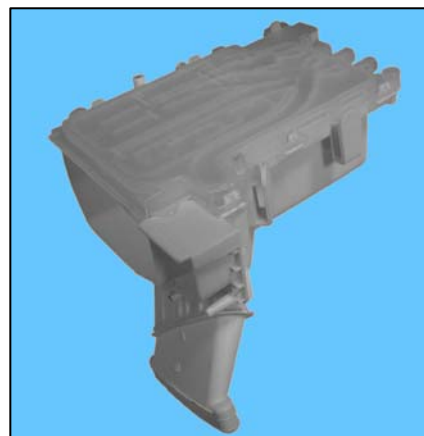


When reassembling, repeat the same steps in the reverse order and tighten the screws that secure it to the control panel at a torque of 2.5 Nm.

Pull out the detergent dispenser from the bellows seal detergent inlet pocket.



Detergent dispenser.



When reassembling:

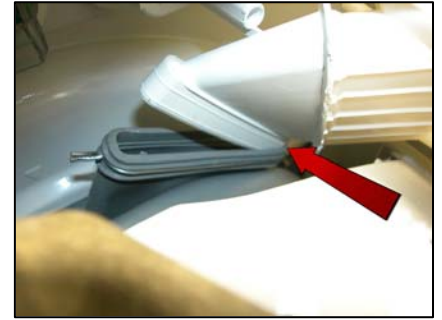
If the clamp was removed, reposition it in its seat (shown by the arrow) in the bellow seal detergent inlet pocket.



Lubricate the outside of the detergent dispenser.  
Lubricate the inside of the bellow seal detergent inlet pocket.

First task to perform:

Gently insert the part of the detergent dispenser indicated by the arrow into the detergent inlet pocket of the bellows seal.



Second task:

With one hand inside the appliance door, hold the bellow seal detergent inlet pocket still and gently insert the rest of the detergent dispenser.

### 14.2.7 Upper counterweight

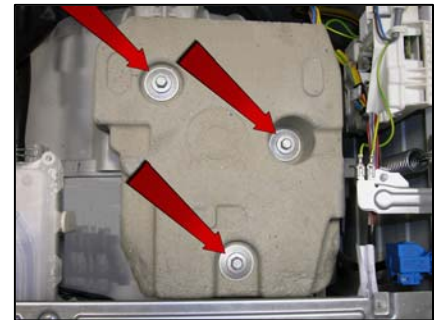
Remove the worktop (see relevant paragraph).

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.



## 14.3 Accessing the front part

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



### 14.3.1 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.



### 14.3.2 Door safety interlock

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



Take care not to scratch the cabinet.

Push the pin at the top inwards and at the same time move the door safety device towards the left.

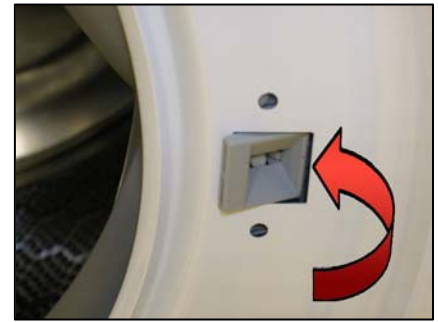


Holding the top still.

Push the pin at the bottom inwards and at the same time move the door safety device towards the left.



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



Pull it out and remove it.



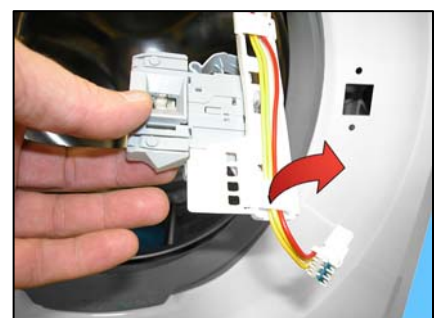
Remove it.



Pull a little of the wiring out of the protection and remove the connector.



Release the hook, remove the wiring and move it.



Insert a flat-tip screwdriver into the slot near the hook.  
Tilt it in the direction of the arrow so as to release it from the latch, while  
at the same time pushing the micro-switch with your thumb in the direction  
shown by the arrow.

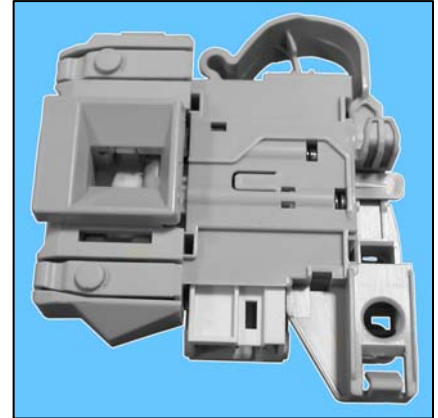


After releasing it from the latch which secured it to the protection.

Move it in the direction shown by the dotted arrow and turn it in order to remove it.



Safety device.



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

After inserting the door device in its seat, make sure the flange is positioned properly on the outside as shown by the arrows.



### 14.3.3 Blade

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



The blades are secured in place by six slides (as can be seen in the picture) which fit into purpose-provided runners in the drum strip.



To release the blade from the drum:

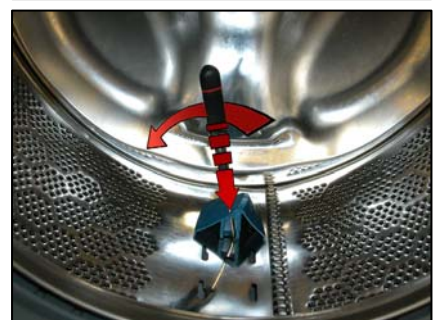
Insert a flat-tip screwdriver into the hole (as shown in the figure).



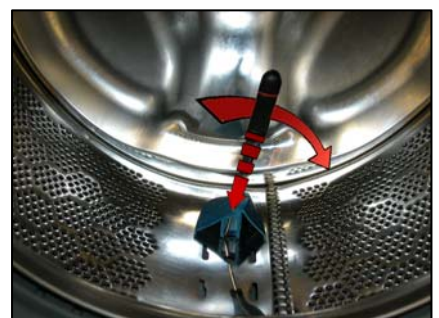
The hole is the first in the second series towards the rear of the blade.



With the screwdriver tilted towards the left.  
Push the right-hand tab down.



With the screwdriver tilted towards the right.  
Push the left-hand tab downwards.

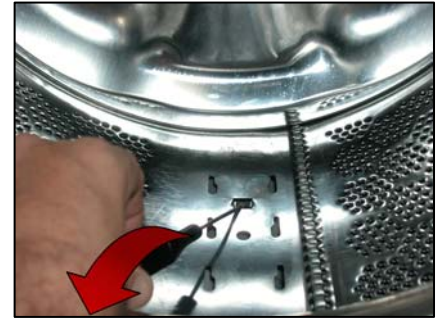


When the two tabs are down.  
Push the blade towards the front of the drum.



Reassembling the blade onto the drum.

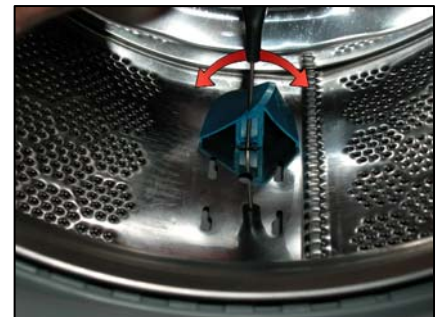
Before securing the new blade.  
Insert a flat-tip screwdriver beneath the lock tabs and raise them a little.



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 lock tabs.  
Move to the left and right



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





### 14.3.4 Front panel

Remove the worktop (see relevant paragraph).  
Remove the iron ring, remove the door bellow seal from the front panel.  
Release the door safety device (see relevant paragraph).

Tilt the washing machine towards the back.  
Unfasten the three screws securing the front panel at the bottom.  
Raise the lower part a little without removing it entirely.



Pull out the detergent dispenser (see relative paragraph).

Remove the two screws securing the detergent dispenser to the control panel.  
Loosen the screws which secure the dispenser to the crosspiece.



Loosen the screws which secure the front panel to the crosspiece.  
Remove the four screws which secure the crosspiece to the rear cabinet.



Remove the clamp that secures the wiring.  
Remove the wiring connector connecting the display board.



Remove the crosspiece.

To remove the front panel, first lift it up and then pull it out of its supports.  
Take care not to warp the screw seats, because reassembly will be difficult if they are warped.



## 14.4 From the front panel, you can access

1. The front counterweight
2. Bellow seal
3. The welded tub assembly
4. The tub suspension springs



### 14.4.1 Front counterweight

Remove the worktop (see relevant paragraph).  
Remove the iron ring securing the bellow seal to the front panel.  
Release the door safety device (see relevant paragraph).  
Remove the front panel (see relevant paragraph).  
Loosen the four screws securing the front counterweight to the welded tub assembly.  
Bellow seal.

When reassembling:  
tighten the screws at a torque of 20 Nm if the tub assembly is new, if it isn't new, the tightening torque should be reduced to 15 Nm.



### 14.4.2 Bellow seal

Remove the worktop (see relevant paragraph).  
Remove the iron ring securing the bellow seal to the front panel.  
Release the door safety device (see relevant paragraph).  
Remove the front panel (see relevant paragraph).  
Pull out the detergent dispenser from the bellow seal detergent inlet pocket.  
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.  
Use liquid soap to lubricate the part where the tub is inserted (indicated by the red circle).  
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.



### 14.4.3 Welded tub assembly

Empty the drain circuit  
Remove the worktop (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.

#### 14.4.4 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.



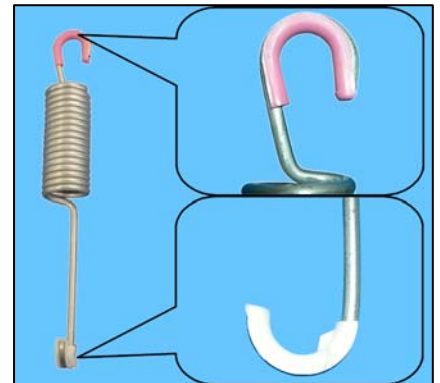
When reattaching the springs (after repair work which required their removal), make sure that the bushings shown in the figure are featured on both ends (the colour of the bushings in the photos below may vary).

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

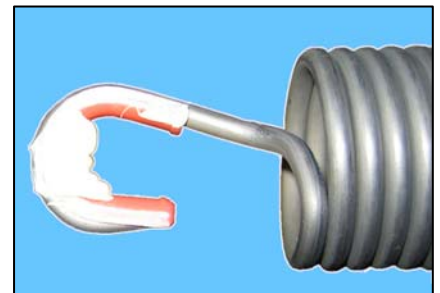
Spare bushings are available, under the following codes:

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



## 14.5 Accessing the rear part

Make sure you wear gloves, because parts of the cabinet are sharp.

### 14.5.1 Back panel

Loosen the screws that fix it to the cabinet.

Do not fully unscrew the screw marked with the number 1.

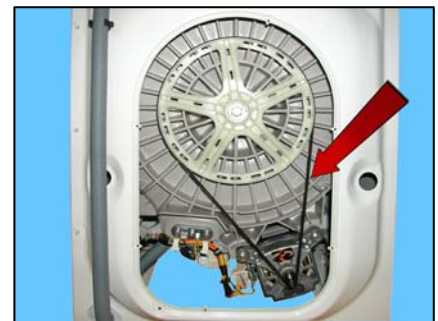


## 14.6 From the back panel, you can access

1. Belt
2. Plastic pulley ( $\varnothing$  273 mm)
3. Motor
4. Heating

### 14.6.1 Belt

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



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

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



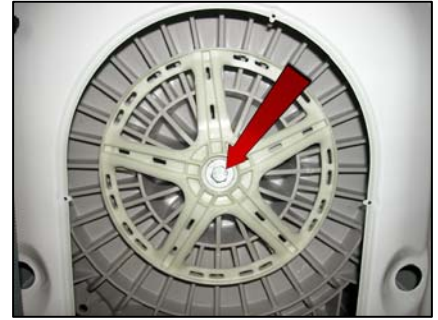
If necessary, adjust the position of the belt on the drive pulley, so that it  
is correctly positioned.



### 14.6.2 Plastic pulley (Ø 273 mm)

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

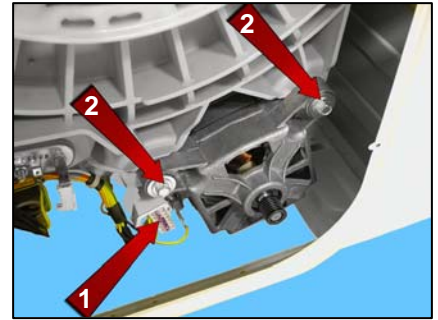
When reassembling, tighten the screw at a torque of 60 Nm.



### 14.6.3 Motor

Remove the back panel (see relevant chapter).  
Remove the belt (see relevant chapter).  
Disconnect the power supply connector (1) and the earth faston (beware as it is fitted with an anti-sliding stop).  
Loosen the two front fastening screws (2) as there are no rear ones.

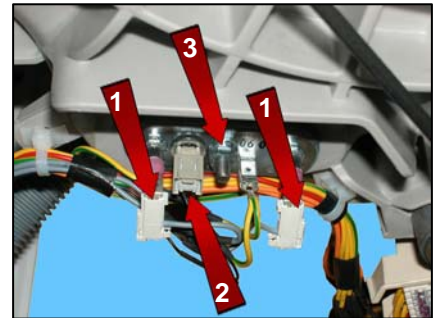
When reassembling:  
Restore the connections.  
If the clamp securing the wiring to the motor breaks, replace it with a new one.  
When reassembling, tighten the screws at a torque of 11.5 Nm.



### 14.6.4 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.

When reassembling, tighten the nut at a torque of 4 Nm.



## 14.7 From the base of the appliance, you can access

1. Drain water circuit
2. Pressure chamber
3. Shock absorbers

### 14.7.1 Drain water circuit

#### 14.7.1.1 Drainage pump

Remove the back panel to make certain operations easier.  
Empty the drain circuit.  
Lay the appliance onto its left side (the side where the detergent dispenser is).

Disconnect the connectors.

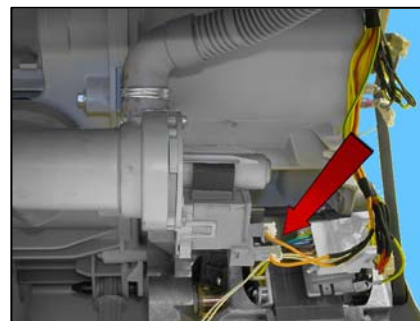
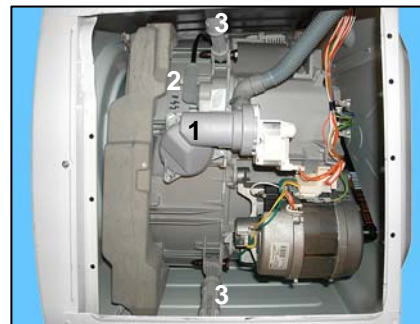
Before removing the pump, make sure the drain circuit is empty.  
Place a protection over the motor to avoid any water drops from falling into it.

Loosen the three screws which secure it to the new drain circuit  
(IDB see page 86).

When reassembling:  
tighten the screws at a torque of 1.5 Nm.

Pump

Once you have removed the pump, you will see that the IDB features six slots, if three of the slots are damaged, you can use the other three.



And the fluff filter is in the centre of the IDB.

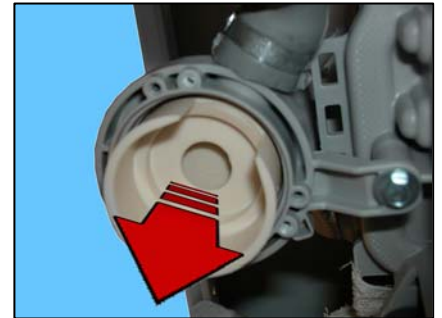
When reassembling, repeat the same steps in the reverse order, tightening the screws at a torque of 1.5 Nm.



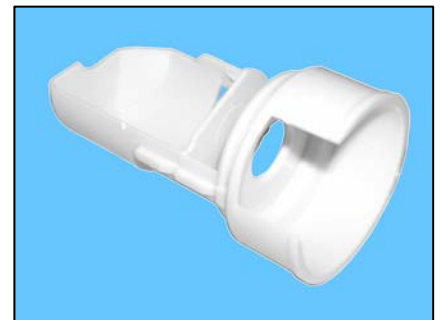
#### 14.7.1.2 Drain filter

Remove the back panel to make certain operations easier.  
Empty the drain circuit.  
Lay the appliance onto its left side (the side where the detergent dispenser is).  
Remove the pump (see relevant paragraph).

Take the filter out of its seat (IDB).



Filter or needle trap.



When inserting the filter in its seat, make sure the indented part (shown by the arrows) is facing towards the drain pipe.

If inserted incorrectly, it will be difficult to insert the filter completely in its seat.

If the filter has not been inserted or if it has been positioned incorrectly, the appliance will report the alarm E21.



#### 14.7.1.3 IDB (Integrated Drain Body)

Remove the drain pump (see relevant paragraph).

Pull out the main drain pipe.  
Remove the screws that secure it to the welded tub.



Once you have removed the outside of the IDB.  
Attached to the welded tub, the diaphragm assembly with the floating  
valve remains.

Remove the diaphragm assembly.



IDB complete with diaphragm assembly.



Diaphragm assembly seen from the welded tub part.

The side window - referred to as the “vent” (shown by the arrow) allows you  
to keep the drain circuit balanced to achieve good performance.



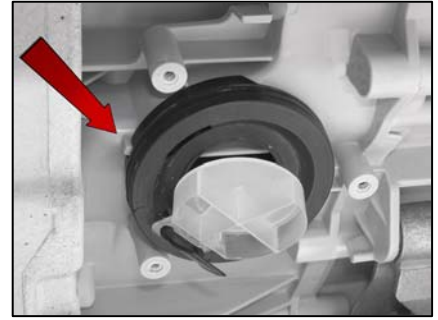
Diaphragm assembly seen from the IDB side.



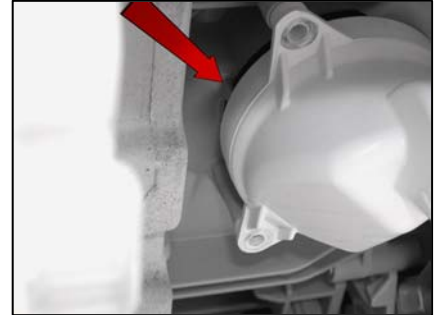


When reassembling:

Place the diaphragm assembly and floating valve in the drain hole of the welded tub.  
Make sure the reference mark is positioned correctly in the seal diaphragm assembly seat.



When positioning the IDB lid, make sure it fits as far as it can go against the reference point.



When reassembling:

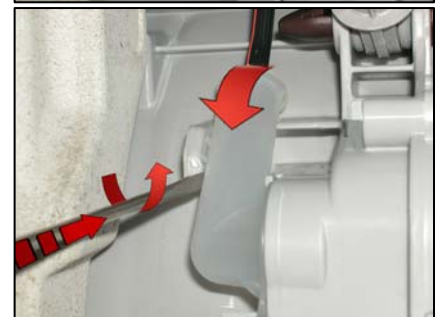
Repeat the same steps in the reverse order, tightening the screws at a torque of 5 Nm.

#### 14.7.2 Pressure chamber

Empty the drain circuit.  
Lay the appliance onto its left side (the side where the detergent dispenser is).



Insert a flat-tip screwdriver between the pressure chamber and the hook securing it to the welded tub.  
Turn it anti-clockwise while at the same time removing the chamber.  
Take care not to damage it.

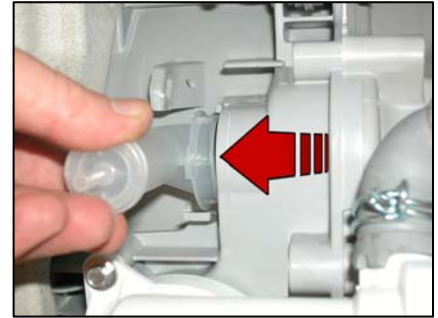


Remove the pipe connecting to the analogue pressure switch.



Turn it until you reach the position shown in the figure.

Remove it.



Pressure chamber.

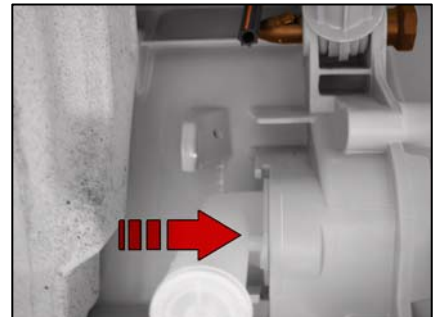


Detail of the pressure chamber set into the welded tub.

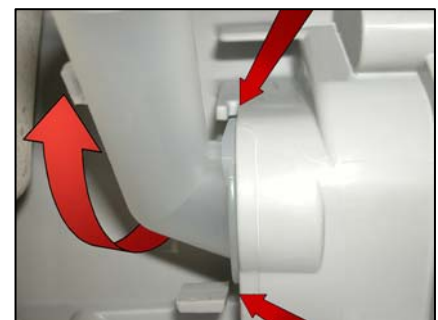


When reassembling:  
Make sure that the seal is not damaged/warped, otherwise replace it.

Insert the pressure chamber in its seat in the welded tub.



Turn it and make sure that the two tabs slot into the purpose-provided runners (shown by the arrows).



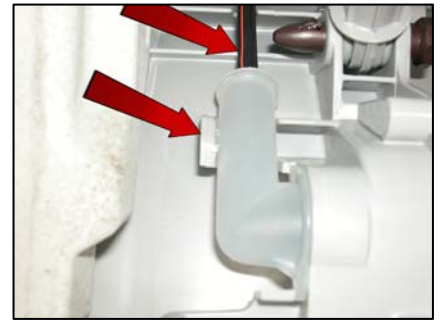
As shown in this picture.



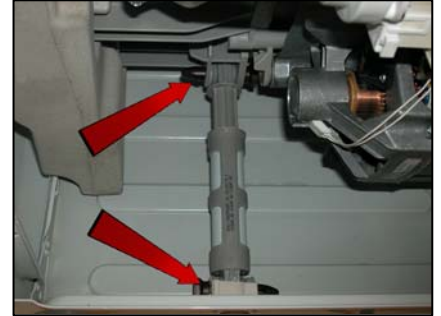
Insert the pipe and secure the pressure chamber.

### 14.7.3 Shock absorbers

Empty the drain circuit.  
Lay the appliance onto its left side (the side where the detergent dispenser is).



Right-hand shock absorber from the rear.



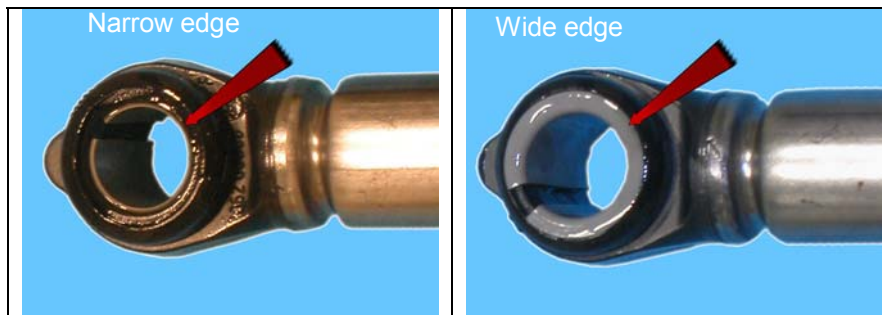
Left-hand shock absorber from the rear.



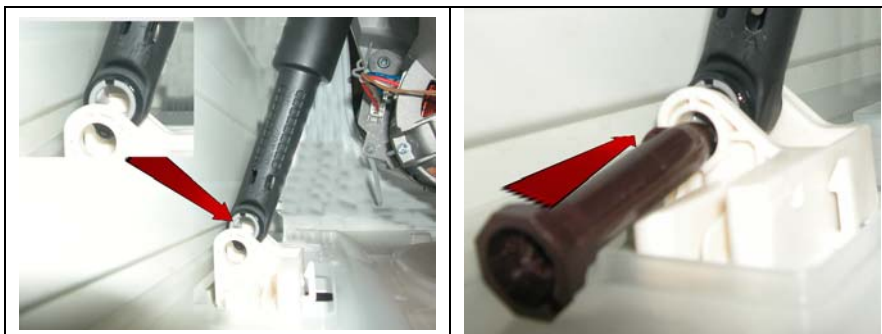
### 14.7.4 Shock absorber pin

The principle is still the same, even if the photographs show different components and situations.

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).

### 14.7.5 Main drain pipe

Loosen the screw which fastens the pipe fastener at the top of the appliance. Straighten out the pipe to drain the water into a container.



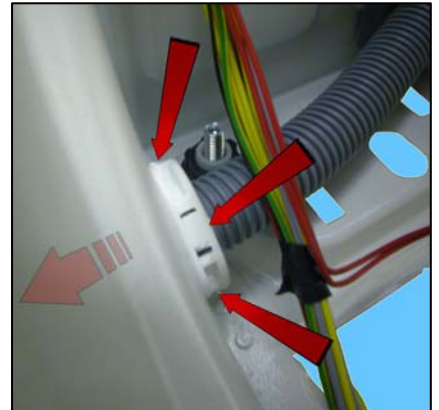
Remove the back panel (see relevant chapter).

Open/warp the clamp (shown by the arrow) which secures the drain pipe to the IDB.

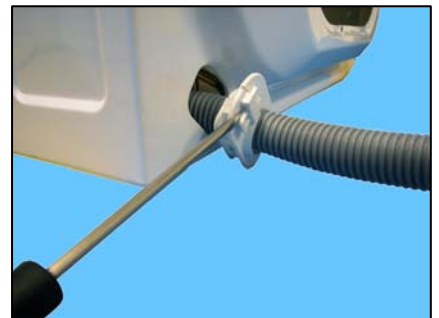


If the clamp breaks, replace it with one featuring the same characteristics.

Remove the pipe fastener that secures it to the cabinet by pressing the three hooks (indicated by the arrows) and pull it out at the same time.



Insert a screwdriver to open up the cabinet pipe fastener.



When refitting the pipe, make sure that the non-corrugated part.



is inserted in the seat of the pipe fastener.



The other uncorrugated part of the pipe must be positioned in the pipe fastener at the top of the appliance.



When reassembling, repeat all these steps in the reverse order.

## 15 ACCESSIBILITY (appliances with INVERTER motor control)

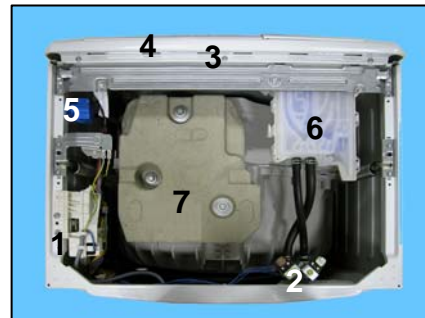
Make sure you wear gloves, because parts of the cabinet are sharp

### 15.1 Worktop

See page 65.

### 15.2 From the worktop, you can access

- 1 Main board
- 2 Solenoid valve
- 3 Display board/light diffuser/buttons/buttons springs assembly
- 4 Control panel
- 5 Analogue pressure switch
- 6 Detergent dispenser
- 7 Upper counterweight

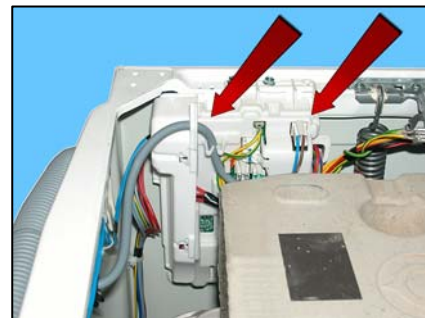


#### 15.2.1 Main board

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

Remove the worktop (see relevant paragraph).

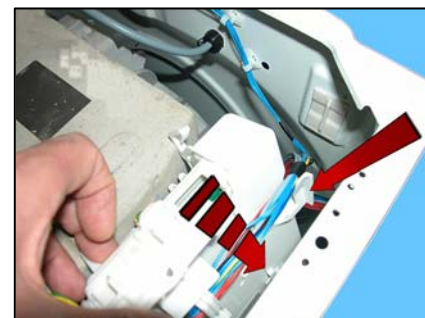
Remove the power cable from the hooks that hold it close to the board. Slide off the connector.



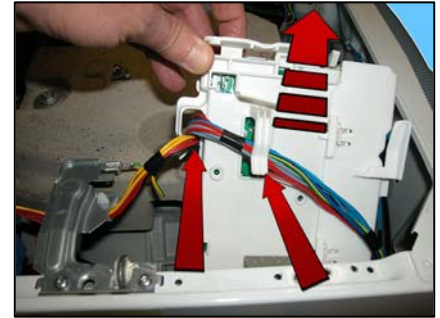
Unfasten the two screws securing it to the cabinet.



Lower the power board assembly to remove the wiring from the hook shown by the arrow.



Lower the power board assembly to remove the wiring from the hooks shown by the arrows.



Position it as shown in the figure.

Remove the wiring from the hook.

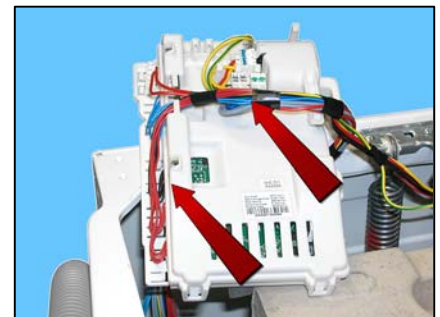
To remove the protection from the connectors: disconnect the hooks securing it on one side



and on the other.

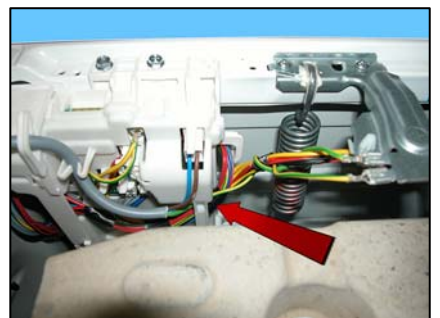


Remove the connectors.



When reassembling:

Repeat these steps in the reverse order. Insert the earth wire of the power supply cable beneath the hook and wrap it and arrange it as shown in the figure.



### 15.2.2 Solenoid valve

See page 68.

### 15.2.3 Display board assembly

See page 68.

#### 15.2.4 Control panel

See page 70.

#### 15.2.5 Analogue pressure switch

See page 73.

#### 15.2.6 Detergent dispenser

See page 74.

#### 15.2.7 Upper counterweight

See page 75.

### 15.3 Accessing the front part

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



#### 15.3.1 Door hinge - Door

See page 76.

#### 15.3.2 Door safety interlock

See page 76.

#### 15.3.3 Blade

See page 79.

#### 15.3.4 Front panel

See page 81.



## 15.4 From the front panel, you can access

1. The front counterweight
2. Bellow seal
3. The welded tub assembly
4. The tub suspension springs



### 15.4.1 Front counterweight

See page 82.

### 15.4.2 Bellow seal

See page 82.

### 15.4.3 Welded tub assembly

See page 82.

### 15.4.4 Tub suspension springs

See page 83.

## 15.5 Accessing the rear part

Make sure you wear gloves, because parts of the cabinet are sharp.

### 15.5.1 Back panel

See page 84.

## 15.6 From the back panel, you can access

1. Belt
2. Plastic pulley (Ø 273 mm)
3. Motor
4. Heating
5. UIMC
6. Drainage pump
7. Fluff filter



### 15.6.1 Belt

See page 84.

### 15.6.2 Plastic pulley (Ø 273 mm)

See page 85.

### 15.6.3 Motor

See page 85.

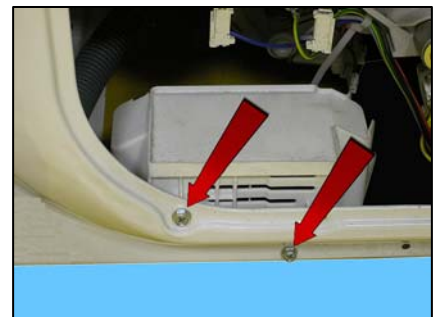
### 15.6.4 Heating

See page 85.

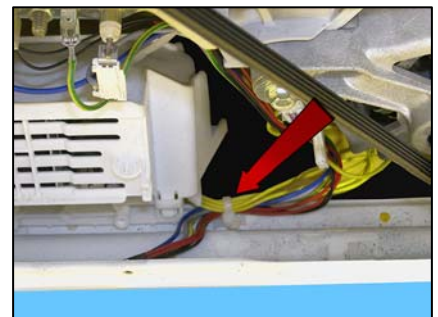
### 15.6.5 UIMC

Remove the back panel (see relevant chapter).

Loosen the two screws that fix it to the rear cabinet.



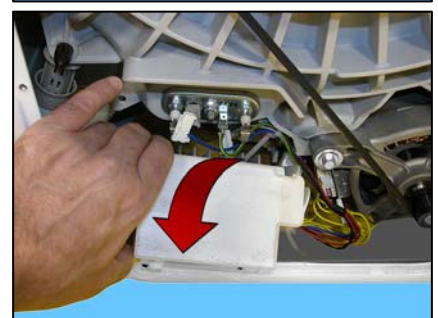
Remove the clamp (shown by the arrow) from the crosspiece, taking care not to break it.



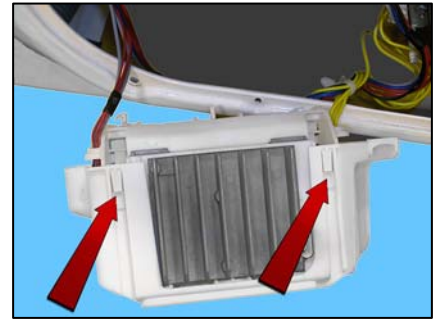
Remove the heating element connectors.



Pushing the washing unit towards the inside of the appliance remove the UIMC.

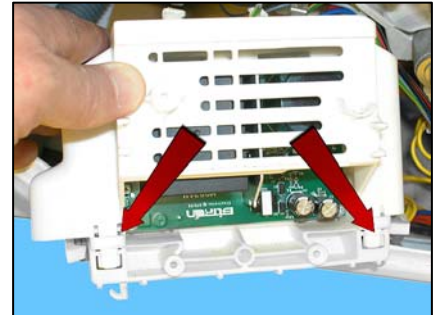


Release the two hooks securing the connectors protection on one side

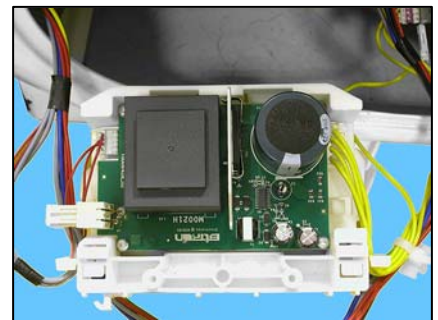


and on the other.

Remove the connectors protection.

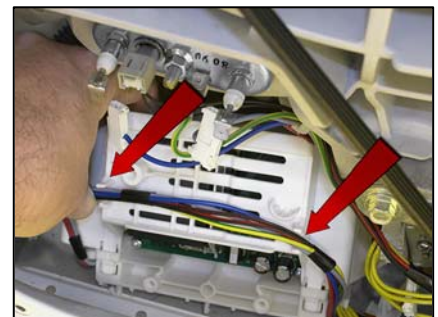


Remove the connectors.



When reassembling, repeat these steps in the reverse order.

Making sure the wiring is positioned inside the UIMC runners to avoid damaging it.



### 15.6.6 Drainage pump

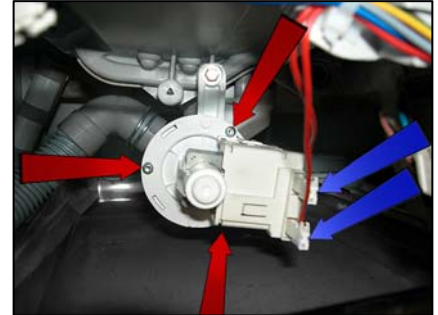
Empty the drain circuit.

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

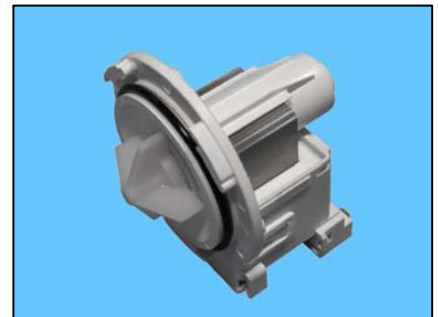
Place cloths or a receptacle under the pump.

Remove the connectors (blue arrows).  
Remove the three screws securing it to the IDB (red arrows).

When reassembling, repeat the same steps in the reverse order and tighten the screws at a torque of 1.5 Nm.



Drainage pump.



Once you have removed the pump, you will see that the IDB features six slots, to secure the pump, if three of the slots are damaged, you can use the other three.



And the fluff filter is in the centre of the IDB.

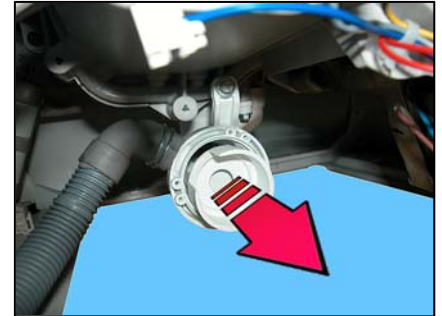
When reassembling, repeat the same steps in the reverse order, tightening the screws at a torque of 1.5 Nm.



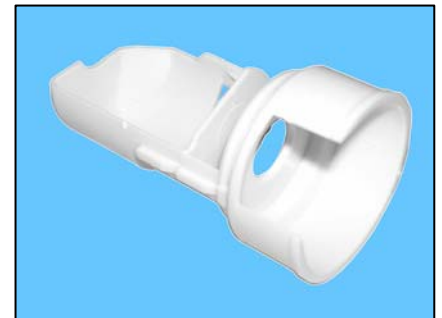
### 15.6.7 Drain filter

Remove the back panel (see relevant chapter).  
Remove the UIMC (see relevant chapter).  
Remove the drain pump (see relevant chapter).

Remove the fluff filter (in some cases this may be difficult).



Filter or needle trap.



When inserting the filter, make sure the part shown by the arrows is facing towards the drain pipe.



If the filter has not been inserted or if it has been positioned incorrectly, the appliance will report the alarm E21.

## 15.7 From the base of the appliance, you can access

Drain water circuit  
Pressure chamber  
Shock absorbers

### 15.7.1 Drain water circuit

#### 15.7.1.1 Drainage pump

Remove the back panel to make certain operations easier.  
Empty the drain circuit.  
Lay the appliance onto its left side (the side where the detergent dispenser is).

Disconnect the connectors.

Before removing the pump, make sure the drain circuit is empty.  
Place a protection over the motor to avoid any water drops from falling into it.

Loosen the three screws which secure it to the new drain circuit (IDB).

When reassembling:  
Tighten the screws at a torque of 1.5 Nm.

#### 15.7.1.2 Drainage filter

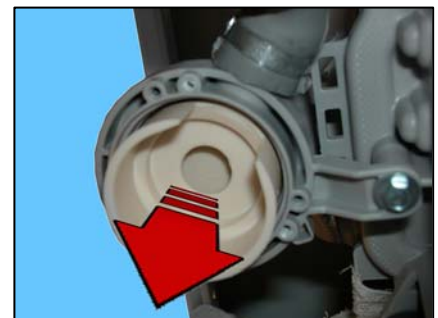
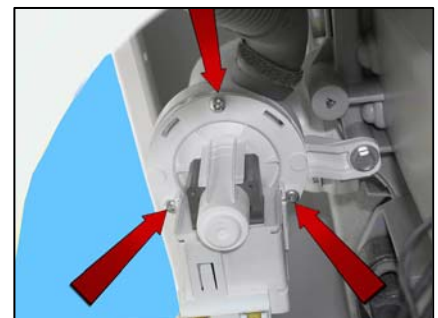
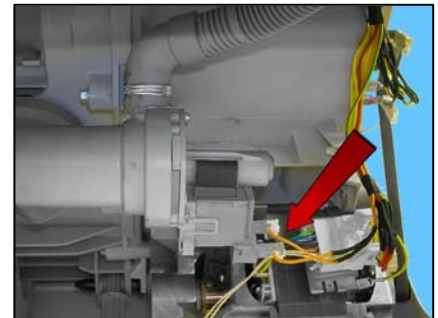
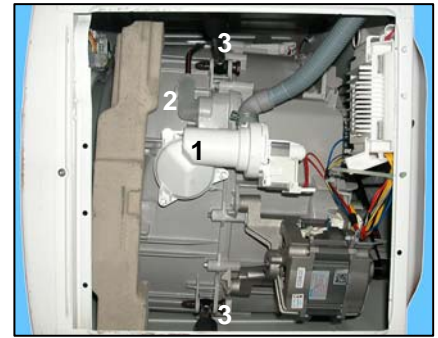
Remove the back panel to make certain operations easier.  
Empty the drain circuit.  
Lay the appliance onto its left side (the side where the detergent dispenser is).  
Remove the pump (see relevant paragraph).

Take the filter out of its seat (IDB).

When inserting the filter in its seat, make sure the indented part (shown by the arrows) is facing towards the drain pipe.

If inserted incorrectly, it will be difficult to insert the filter completely in its seat.

If the filter has not been inserted or if it has been positioned incorrectly, the appliance will report the alarm E21.



### 15.7.1.3 IDB (Integrated Drain Body)

See page 87.

### 15.7.2 Pressure chamber

See page 89.

### 15.7.3 Shock absorbers

See page 91.

### 15.7.4 Main drain pipe

See page 92.

**REVISION:**

<b>Revision</b>	<b>Date</b>	<b>Description</b>	<b>Written by</b>	<b>Approved by:</b>
00	01/2014	Document creation	DMM	XX – 0X/201X