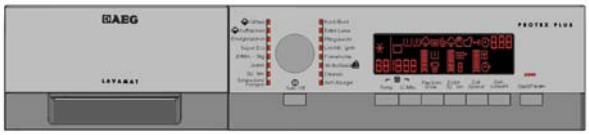
Electrolux

SERVICE MANUAL

WASHING



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Washing machines

with electronic control system

EWM10931

Technical and functional characteristics

NEW COLLECTION

SERIES

8

G50XXL

INDEX

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 EWM10931 electronic control system (SERIES 8).

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

The current electronic appliances manufactured (EWM10931 platform) use a heating element with thermal fuses (inside its branches) for safety, which interrupt in case of temperature overload caused by the water level dropping below the minimum level permitted.
The incorporated NTC probe contacts have a 2.5 mm pitch.

The manual deals with the following topics:

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

Low consumption mode

Some appliances are fitted with a circuit (in the main circuit board) called Zero Watt (0 Watt with an actual consumption ~50mW) 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, 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 occurs during a washing programme, the auto off function is disabled, and an alarm is displayed.

2 WARNINGS

- **Any work on electrical appliances must only be carried out by qualified technicians.**
- **Before servicing an appliance, check the efficiency of the electrical system in the home using appropriate instruments. For example: refer to the indications provided/illustrated in the "metratester" course at the address (http://electrolux.edvantage.net) on the Electrolux Learning Gateway portal.**

  On completing operations, check that the appliance has been restored to the same state of safety as when it came off the assembly line.
- **If the circuit board has to be handled/replaced, use kit ESD (Code 405 50 63-95/4) to avoid static electricity from damaging the circuit board, see S.B. No. 599 72 08-09 or consult the course "Electrostatic charges" at the address (http://electrolux.edvantage.net) on the Electrolux Learning Gateway portal.**

- **This platform is not fitted with an ON/OFF switch. Before you access internal components, take the plug out of the socket to cut the power supply.**
- **Where possible, ohmic measurements should be effected rather than direct measurement of voltage and current.**
- **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. Do not remove/switch the NTC sensors between heating elements.**

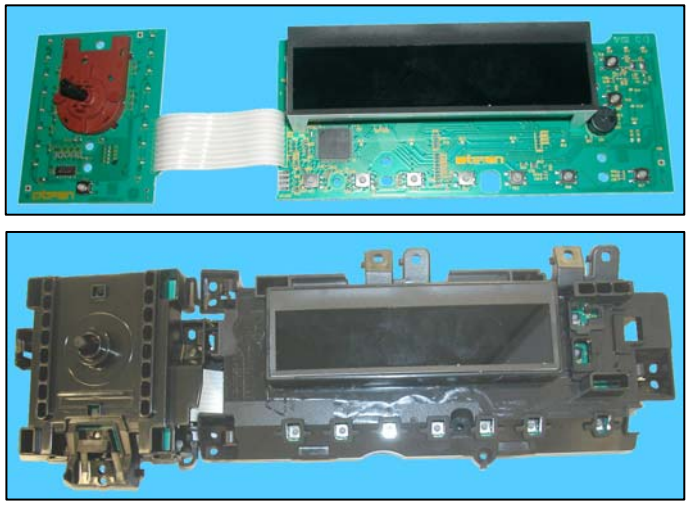
- **Always empty the appliance of all the water before laying it on its side (see the relevant paragraph).**
- **Never place the appliance on its right side (electronic control system side): some of the water in the detergent dispenser could leak onto the electrical/electronic components and cause these to burn.**
- **When replacing components, please refer to the code shown in the list of spare parts relating to the appliance.**

SERIES 8

2.1 General characteristics

The EWM10931 electronic control system consists of two circuit boards plus the motor control system (inverter).

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

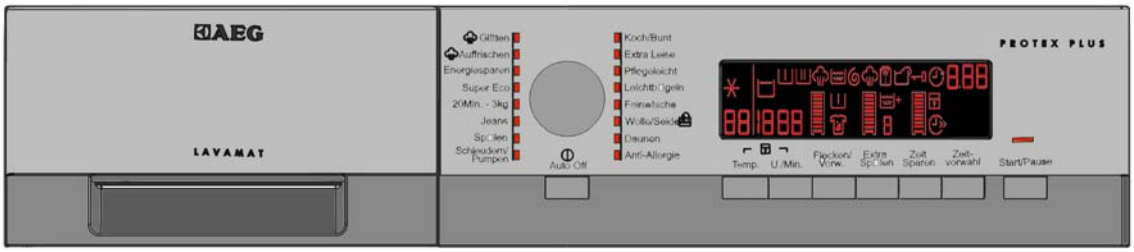


- The main circuit board is positioned at the rear of the appliance, receives commands from the display board, powers the electrical components as well as communicating with the motor control board (Inverter) positioned at the rear of the appliance at the bottom.

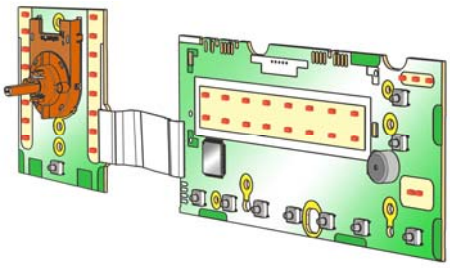
No. buttons	▪ maximum 9 (6 options + start/pause + ON/OFF)
No. LEDs	▪ maximum 20 + LCD
Programme selector	▪ 16 positions (incorporated in the circuit board)
Serial port	▪ DAAS-EAP communication protocol up to 115,200 baud
Power supply voltage	▪ 220/240V ▪ 50/60 Hz (configurable)
Washing type	▪ Traditional with “Eco-ball” sphere
Rinsing system	▪ Traditional with “Eco-ball” sphere
Motor	▪ Two-pole asynchronous (three-phase), with tachometric generator
Spin speed	▪ 400 ÷ 1,600 rpm
Anti-unbalancing system	▪ AGS
Cold water fill	▪ 1 solenoid valve with 1 inlet – 2 outlets
Detergent dispenser	▪ 3 compartments: prewash/stains, wash, fabric softeners
Control of water level in the tub	▪ Electronic/analogue pressure switch
Door safety interlock	▪ Instantaneous
Heating element heat output	▪ 1950W with thermal fuses incorporated
Temperature control	▪ NTC probe incorporated in the heating element
Buzzer	▪ Traditional incorporated in the PCB
Sensors	▪ Water fill gauge (flowmeter from 2÷12 l/m) ▪ Aqua control

2.1.1 Control panel

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

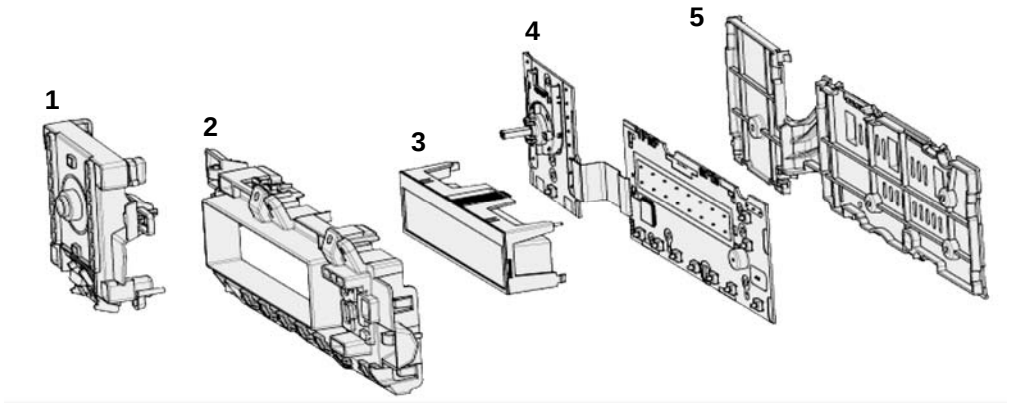


- Positioning of LEDs and buttons

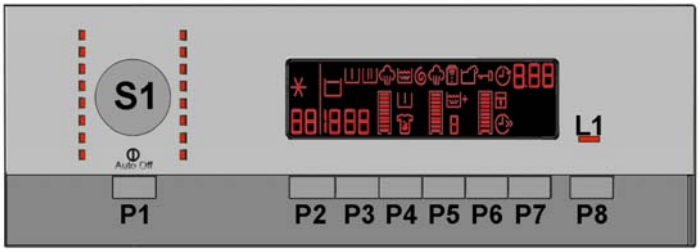


- Display board assembly, exploded view

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

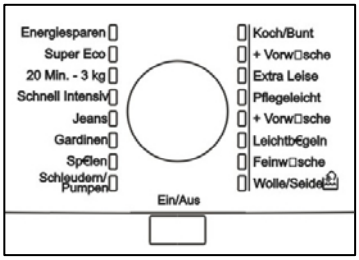


2.1.1.1 Control panel configuration



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

2.1.1.2 Programme selector (S1)



The selector used is of the HI-FI type (the dial has no index and no reset position, the programme selected is indicated by the fact that the corresponding LED lights up).
The number of positions is not configurable, it is always 16 and they are tied to the LEDs that indicate the washing programmes.
The programmes can be configured to perform different washing cycles (e.g.: water level, drum movement, no. of rinses and the washing temperature to be selected according to the type of garments).
The selector can be turned both clockwise and anti-clockwise.
For each programme, the compatible options and other parameters are defined.

2.1.1.3 Programme configuration

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

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

2.1.2 Pushbuttons – LEDs and LCD

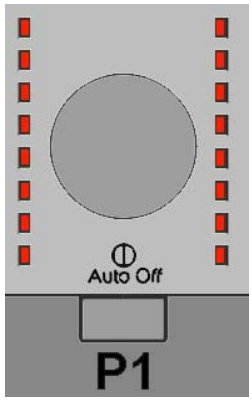
The functions of each button are defined by the configuration of the appliance.

- **Button no. 1**: ON/OFF
  This button is always present, whatever the styling.

– Press it to turn the appliance on, at the same time the buzzer will sound a tone (if enabled) and the LCD display lights up (the lighted symbols are the ones for the programme).

– To switch the appliance off, press and hold the button for approximately 1 second, after which the buzzer will sound a tone (if enabled), the LCD display and the LEDs will switch off, all the options selected and any programme that is running will be cancelled.

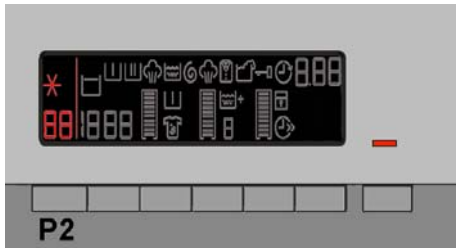
The operation of the ON/OFF depends on the configuration of the main circuit board. It can cut the appliance off from the electricity mains completely (0 Watt circuit) or set the appliance to low energy consumption mode (without 0 Watt circuit) in which case you will need to take the plug out of the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



- **Button no. 2**: TEMPERATURE
  This is related to the part of the LCD display in which the washing cycle temperature is shown.
  The starting temperature shown on the LCD display is the one set for the programme selected.
  Press this button in sequence to lower the temperature, when the lowest temperature is reached the selection will start again from the highest one available for the programme.

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

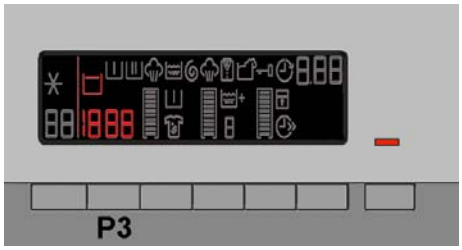
The cold cycle is represented by the cold symbol and by two dashes to replace the Digits.



- **Button no. 3**: SPIN SPEED

This is related to the part of the LCD display in which the washing cycle spin speed is shown.
The spin speed displayed initially is that configured for the chosen programme.
Press this button in sequence to lower the speed, when the lowest temperature is reached the next
has been reached, the next one is “Rinse Hold” and the related light up (if compatible with the programme selected). This is also lit during the “Extra silent” programme.
The next selection will be the highest speed available for the programme.

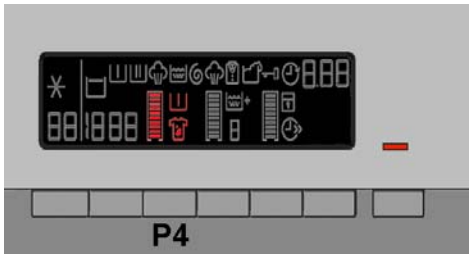
The spin speeds are:
1600–1400–1200–1000–800–600–400– “Rinse Hold” cycle.
When no speed is selected, or the “Rinse Hold” cycle is selected, the LCD display shows three dashes
“ **- - -** ”.



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

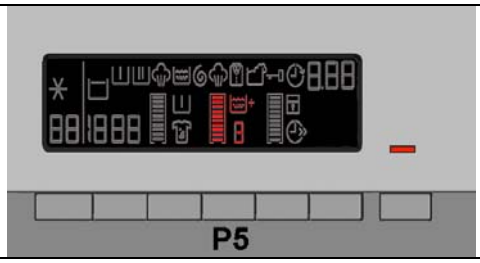
- **Button no. 4**: OPTION

  It is related to the part of the LCD display (see figure) where the graphic bar and the symbols relating to the options are displayed, depending on the chosen programme.
  Press the button to light the graduated scale and the Stains symbol lights simultaneously. If you continue to press it, the Prewash symbol also lights up.
  The selection order is as follows:
  1. Stains
  2. Pre-wash
  3. Stains + Prewash



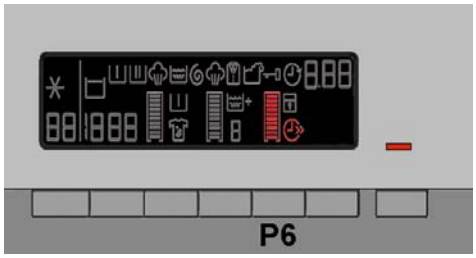
- **Button no. 5**: OPTION

  It is related to the part of the LCD display (see figure) showing: the graphic bar, a digit and the “Extra rinse” symbol.
  Press the button to light the graduated scale. The symbol for the “Extra rinse” lights simultaneously, and the digit shows the number of additional rinses to combine with the programme.
  The number of rinses depends on the programme configuration.



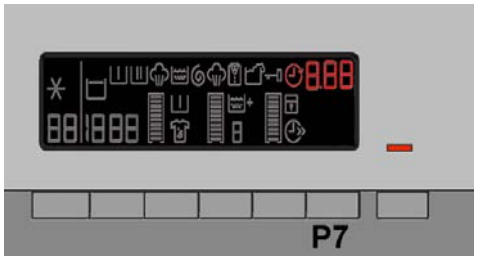
- **Button no. 6**: OPTION

  It is related to the part of the LCD display (see figure) showing: the graphic bar and the “Time save” option.
  Press the button and half or all of the graduated scale may light up, depending on the configuration of the button. The related symbol also lights up simultaneously.
  – Press the button once and the chosen option is “Daily”.
  – Press the button twice and the chosen option is “Super Quick”.



- **Button no. 7**: DELAYED START

  It is related to the part of the LCD display (see figure) showing the related symbol and the three digits.
  Press the button in sequence to increase the delay by 30’ up to 2 hours, whereas from 2 hours to 20 hours, the increase is of 1 (one) hour every time the button is pressed. The symbol lights and stays on for the entire delay phase.
  During the programme selection phase, a delayed start can be selected, from 30’ to 20 hours (30’ ☞ 60’ ☞ 90’ ☞ 2h ☞3h… ☞20h ☞0h) and the time is shown on the LCD display;
  During the last hour, the time decreases minute by minute.
  To cancel the delayed start time, after the cycle has started, pause the washing machine using the related button and cancel the option.



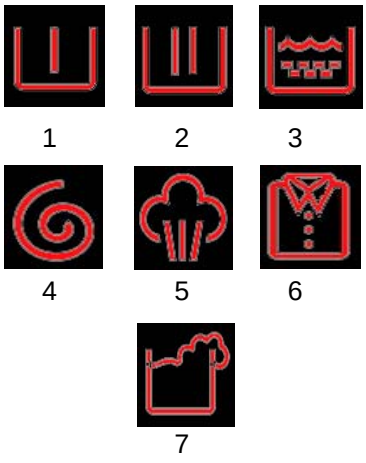
- **Button no. 8**: START/PAUSE

  This button is used to START the appliance or to PAUSE it.

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

- **LCD**

The information described below also appears on the LCD display:

• **Programme phases**: The icons represented respectively mean: 1. Pre-wash 2. Wash 3. Rinse 4. Spin 5. Steam combined with the programme (where featured) 6. Rinse Hold 7. Detergent overdose They light up during the programme setting where featured and during their performance. The icon representing the Overdose lights up at the end of the cycle if during the performance of the programme an excess production of foam was detected.	 1 2 3 4 5 6 7
• **Padlock**: The icon lights up when the “child lock” function is activated. It indicates that all the buttons are disabled to prevent children from modifying, starting or pausing the cycle; To enable/disable this function, a key combination needs to be pressed. It may be silk-screen printed on the control panel or described in the instruction manual.	
• **Door closed sensor**: Lights up when the safety device stops door opening and switches off when the door can be opened. Flashes when the device is about to unlock the door (with door interlock with PTC, which needs one/two minutes to open).	
• **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.	
• **Delay start** Selected using the related button. After the START/PAUSE button is pressed, the countdown starts and the delay time decreases hour by hour, from a delay of 2 hours up to 20 hours(☞ 30’☞ 60’☞ 90’☞ 2h☞ 3h...☞ 20h☞ 0h). During the last 2 hours, it decreases by 30 mins at a time. Press the button in sequence to increase the delay by 30’ up to 10 hours, whereas from 10 hours to 20 hours, the increase is of 1 (one) hour every time the button is pressed. During the programme selection phase, a delayed start can be selected, from 30’ to 20 hours (30’ ☞ 60’ ☞ 90’ ☞ 10h ☞11h… ☞20h ☞0h) and the time is shown on the LCD display; during the last hour, the time decreases minute by minute. To cancel the delayed start time, after the cycle has started, pause the washing machine using the related button and cancel the option.	
• **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.	

• **End of cycle** **End of the programme** is indicated by **a permanently lit zero** (when the door can be opened). **Appliance stopping with water in the tub**, at the end of Programmes with the RINSE HOLD option, this is displayed by **a permanently lit zero.** The LED indicating the door remains on and the LED of the START/PAUSE button is turned off. The washing machine continues to operate, rotating the drum once every 2 minutes.	
• **Alarm code** Indicates an anomaly during operation of the machine. Simultaneously to the displaying of the code, the START/PAUSE button flashes.	
• **Extra rinse** Appliances which do not feature the button and related LED for the Extra rinse option can enable/disable this option by pressing a key combination (which may be silk-screen printed on the control panel or described in the instruction manual). This option is enabled/disabled during programme selection and is confirmed by the related symbol being turned on/off. The option remains enabled even after the appliance has been turned off (for subsequent programmes).	

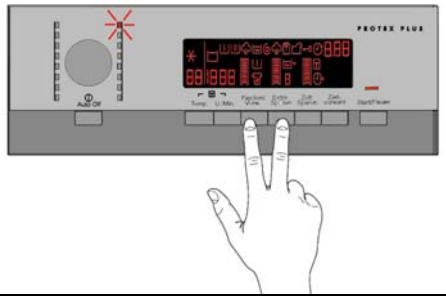
- **Buzzer**

This comprises a multi-tone buzzer and sounds in the following cases:
- When the machine is turned on and off it emits two different tunes.
- When a button is pressed it emits a short "**Click**".
- When the cycle ends this is indicated by a special sequence of "**three long beeps**" repeated at intervals of 15" for a total of 2 minutes.
- In the event of a malfunction in the machine this is indicated by a special sequence of "**three short beeps**" repeated 3 times at intervals of 15" for a total of 5 minutes.

All appliances are fitted with the buzzer, and leave the factory with the option enabled. To disable it use the combination of keys.
The volume level is set in the factory and cannot be adjusted by the user.

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

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

SERIES 8


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

3 DEMO MODE

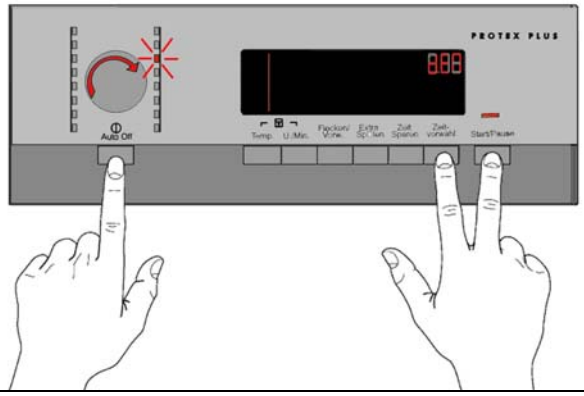
A special cycle is designed to demonstrate the operation of these appliances in shops, without connecting them to the water mains. This way, any one of the programmes can be selected and, once the start button/sensor has been pressed/touched (START/PAUSE), the appliance will only perform some of the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

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

3.1 Access to DEMO settings

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

SERIES 8



Do not start the procedure with the combination buttons pressed

1. Switch on the appliance using the ON/OFF button.
2. Turn the selector dial until the third LED in the right-hand row is on.
3. Press the **START/PAUSE** button and the nearest **option button** simultaneously (as shown in the figure).
4. Hold the buttons down (approximately three or five seconds) until “dEM” flashes for a short time.

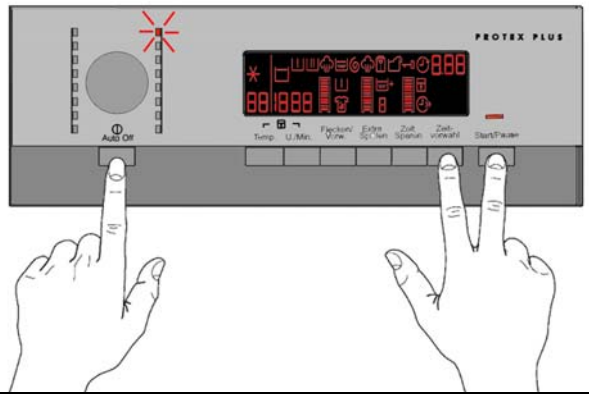
3.2 Exiting DEMO mode

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

4 DIAGNOSTICS SYSTEM

4.1 Accessing diagnostics

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



Do not start the procedure with the combination buttons pressed

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

In the first position, the operation of the buttons, of the related LEDs and of the groups of symbols shown on the LCD screen is checked; turn the programme selector dial **clockwise** to run the diagnostic cycle for the operation of the various components and to read any alarms (see diagnostic testing on the following page).
During this phase, if any key combination is pressed (except for the one relating to diagnostics), all the combinations of options stored are deleted (Extra rinse, No buzzer, etc..) whereas for SERIES 9, the memories with the customised programmes are also deleted.

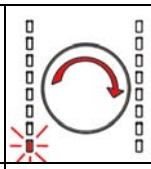
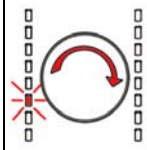
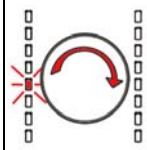
4.2 Quitting the diagnostics system

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

4.3 Diagnostic test phases

Irrespective of the type of PCB and the configuration of the programme selector, after entering the diagnostic mode, turn the programme selector dial **clockwise** to perform the diagnostic cycle for the operation of the various components and to read any alarms.
Concurrently, a selector control code is shown on the LCD display, which indicates for **two** seconds the description in the last column of the table below.
(all alarms are enabled in the diagnostic cycle).

Selector position		Components activated	Working conditions	Function tested	LCD display
1		- The LEDs, groups of symbols in the LCD screen and the backlight of the display are turned on in sequence, - Press a button/sensor to turn on the group of icons in the LCD screen or the corresponding LED and the buzzer sounds at the same time.	Always active	User interface functioning	
2		- Door safety interlock - Wash solenoid	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to wash compartment	 Water level in the tub (mm)
3		- Door safety interlock - Pre-wash solenoid	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to pre-wash compartment	 Water level in the tub (mm)
4		- Door safety interlock - Solenoid valve pre-wash and wash	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to conditioner compartment	 Water level in the tub (mm)
5		- Door safety interlock - Third solenoid valve	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to third solenoid valve compartment	 Water level in the tub is displayed (mm)
6		- Door safety interlock - Fourth solenoid valve (hot water where featured)	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to fourth solenoid valve compartment	 Water level in the tub is displayed (mm)
7		- Door safety interlock - Wash solenoid, if the water in the tub is not enough to cover the heating element - Heating element	Door closed Water level above the heating element. Maximum time 10 mins up to 90°C. **(*)**	Heating	 Temperature in °C measured using the NTC probe.
8		- Door safety interlock - Wash solenoid, if the water in the tub is not enough to cover the heating element - Motor (55 rpm clockwise, 55 rpm anti-clockwise, 250 rpm pulse)	Door closed Water level above the heating element	Check for leaks from the tub	 Drum speed in rpm/10

9		- Door safety interlock - Drain pump - Motor up to 650 rpm then at maximum spin speed (**)	Door closed Water level lower than anti-boiling level for spinning.	Drain, calibration of analogue pressure switch and spin	 Drum speed in rpm/10
10	-----	-----	-----	-----	-----
11		- Reading/Deleting the last alarm	-----	----	
12 ÷ 16		- The LEDs, groups of symbols in the LCD screen and the backlight of the display are turned on in sequence, - Press a button/sensor to turn on the group of icons in the LCD screen or the corresponding LED and the buzzer sounds at the same time.	Always active	User interface functioning	

(*) 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).

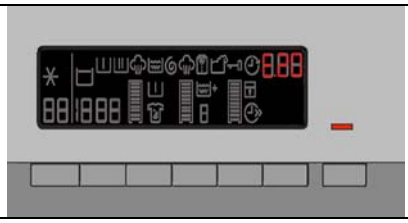
(**) The check at the maximum speed occurs without control of the A.G.S. and no garments must be inside the appliance.

5 ALARMS

5.1 Displaying the alarms to the user

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

Series 8



The alarms displayed to the user are listed below:

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

The alarms listed below:

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

The intervention of a service engineer is required

While for the alarm:

- *EH0 – Voltage or frequency outside normal values*

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

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

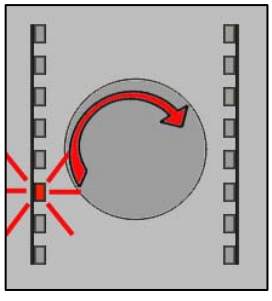
The door can normally be opened (except where specified) when an alarm condition has occurred, on condition that:

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

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

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

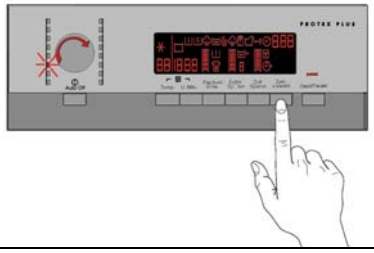
5.2 Reading the alarms



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

- Enter the diagnostic mode (para. 4.1).
- Irrespective of the type of PCB and configuration, turn the programme selector knob **clockwise** to the **eleventh position** the last alarm is displayed.
- to display previous alarms, press/touch the button/sensor to the left of the START/PAUSE button in sequence (as shown in the figure).
- To return to the last alarm, press/touch the START/PAUSE button/sensor.

SERIES 8



5.3 Rapid reading of alarms

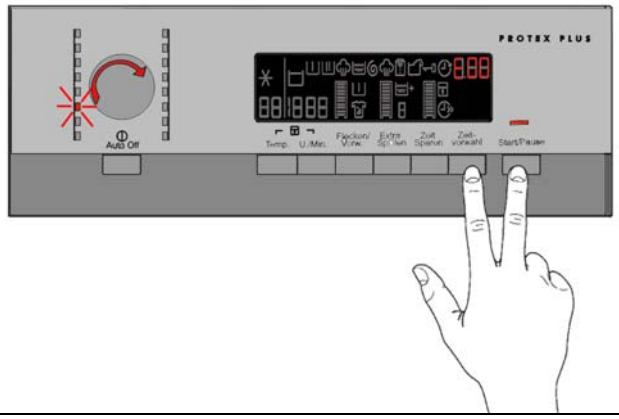
The last alarm can even be displayed if the selector is not in the tenth diagnostic position or if the appliance is in normal operating mode (for example when performing a wash programme):
→ Press the **START/PAUSE** button and the nearest **option button** simultaneously (as if you were entering DIAGNOSTIC mode) for at least 2 seconds: the LCD display shows the last alarm.
→ The alarm continues to be displayed until a button is pressed.
→ The alarm reading system is as described in para. 8.2
→ While the alarm is being displayed, the appliance continues to perform the cycle or, if in the programme selection phase, it maintains the previously selected options in memory.

5.4 Deleting the last alarm

It is good practice to cancel the alarms stored:

- after reading the alarm codes, to check whether the alarm re-occurs during the diagnostic cycle
- after repairing the appliance, to check whether it re-occurs during testing

Series 8



1. Enter the diagnostic mode,
2. Turn the selector dial clockwise until the eleventh LED is turned on (in the left-hand alarm reading row).
3. Press/touch the **START/PAUSE** button/sensor and the nearest **option button/sensor** simultaneously (as shown in the figure).
4. Hold down the buttons until the LCD display shows “E00” (at least 5 seconds).

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

6 OPERATING TIME COUNTER

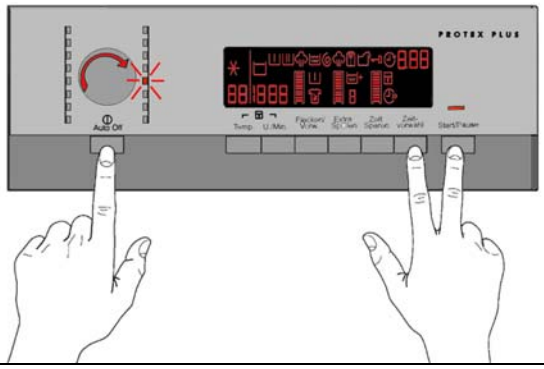
Using a specific procedure, the operator can display the total operating time for the appliance, which is counted from the moment it is first switched on.
The unit can count up to a maximum of **6,550** hours of operating time.

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

6.1 Reading the operating time

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

Series 8



Do not start the procedure with the combination buttons pressed

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

6.2 Display of total operating time

This time is displayed with a sequence of two digits at a time: the first two digits indicate thousands and hundreds, the second two digits indicate tens and units for the SERIES 7 and 8, while the time is displayed in a single sequence for SERIES 9.
For example, if the operating time is **6,550** hours, the display will show the following sequence:

	Phase 1	**Phase 2**	**Phase 3**
	For two seconds, the following is displayed: Hr	For two seconds, the following digits are displayed: ↳ thousands (**6**) ↳ hundreds (**5**)	For the next two seconds the following digits are displayed: ↳ tens (**5**) ↳ units (**0**)
SERIES 8			

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

7 OPTIONS

7.1 Compatibility between options

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

(*) Pre-wash and Soak exclude each other

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

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

7.2 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.
→ 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 COTTON 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.

- **Soak**

→ Adds a pre-wash phase with heating to 30°C (or cold, if selected) plus 30' hold with HAND WASH movement.
→ Completes the cycle.

- **Stains**

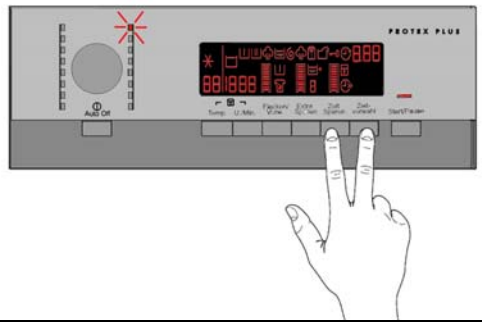
→ Adds a 5-minute motor movement phase after heating to 40°C.
→ Water flow to the pre-wash/stains compartment to introduce the special stain-removal product.
→ This option cannot be selected for WOOL and HAND WASH cycles.

- **Super rinse (SERIES 8 key combination).**

→ Adds **two** rinses to the COTTONS cycles, adds **one** rinse to the SYNTHETICS - DELICATES cycle.
→ Eliminates the spin at the end of washing.

- **EXTRA rinse (SERIES 8)**

→ Adds **up to five** rinses in the COTTONS - SYNTHETICS - DELICATES cycles.
→ When the rinses are five or more, it eliminates the spins at the end of the washing.
Maximum of 8 rinses in total.

ENABLING/DISABLING EXTRA RINSE USING A COMBINATION OF KEYS
Appliances which do not envisage the option SUPER RINSE combined with a button can enable it through a key combination.
Series 8

During the selecting phase, press the two buttons shown in the figure simultaneously for a few seconds until the related icon lights up. This option also remains enabled during subsequent cycles. To disable it, repeat the same operation until the related icon is turned off.

- **No spin**

→ It eliminates <u>all</u> 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 COTTON - SYNTHETIC FABRICS - DELICATES cycles by half a load.

- **Delayed start time**

→ Adds a pause before the start of the programme. The delay time is shown on the three digit display (see page 12 Delayed start).

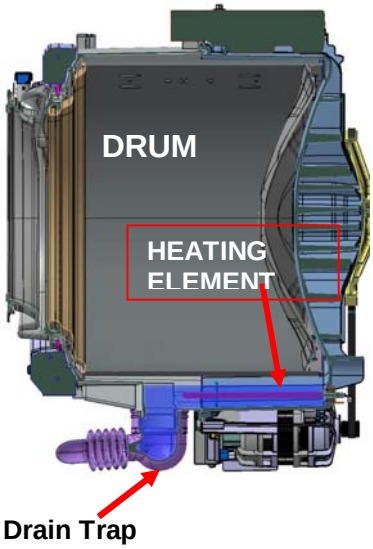
→ To start the cycle immediately after the countdown to the delayed start has already begun: press the Start/Pause button, cancel the delay time by pressing the relevant button, then press Start/Pause again.

7.2.1 Generating STEAM

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

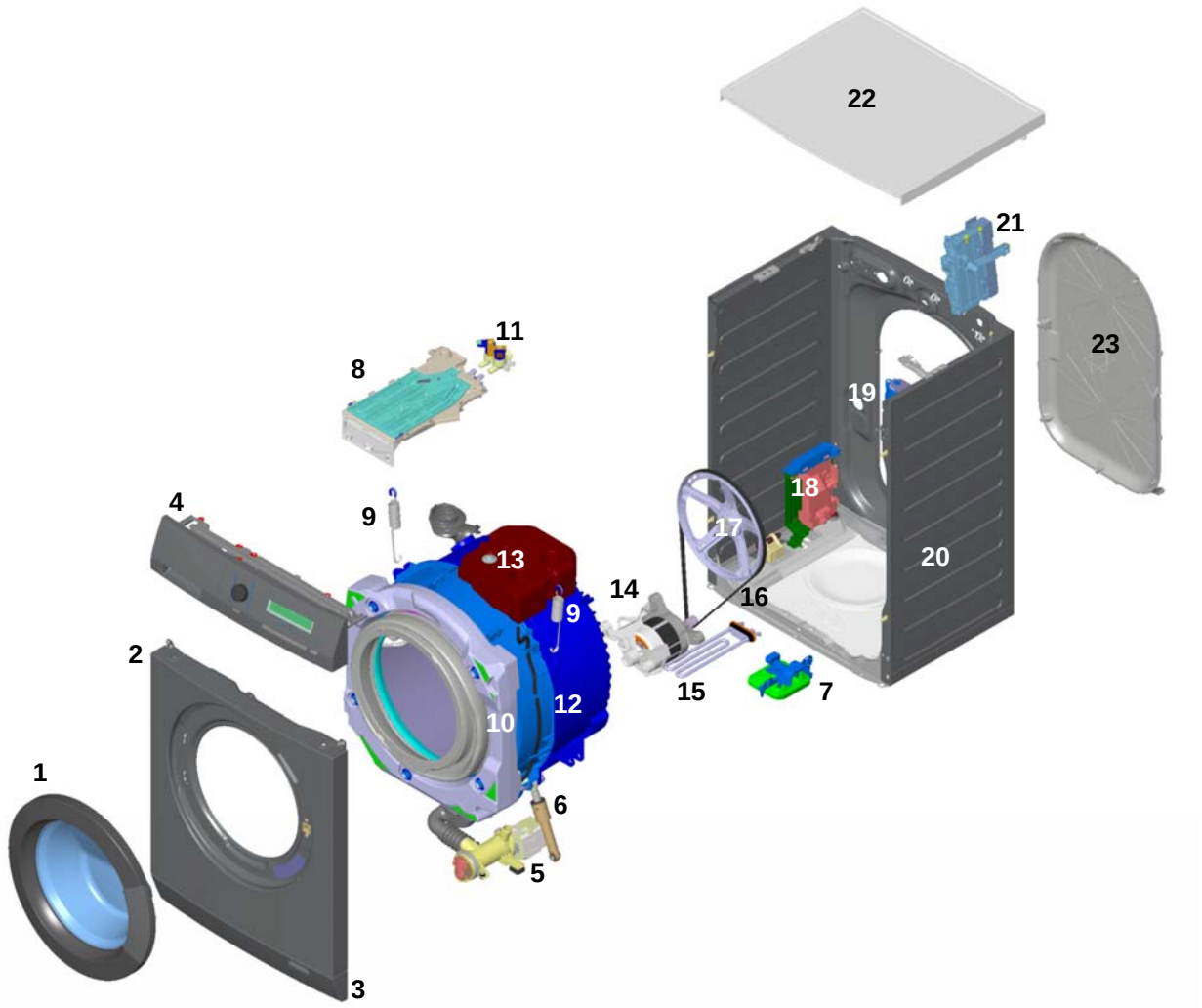
To obtain steam, during theses programmes, the quantity of water filled in the tub must be enough to cover the heating element and the maximum temperature to reach is 60°C / 75°C.

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



8 TECHNICAL CHARACTERISTICS

8.1 Construction



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

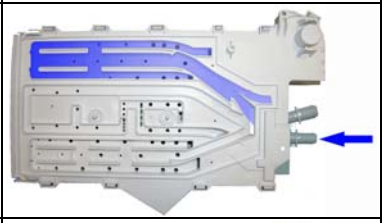
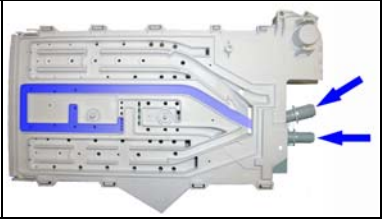
8.2 Detergent dispenser

8.2.1 Detergent dispenser with multi-way solenoid valves

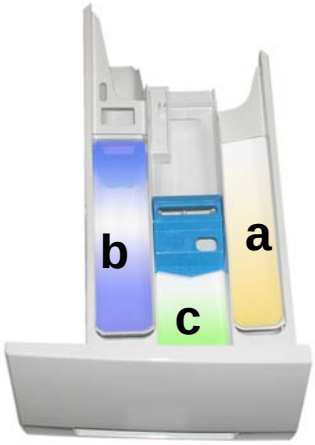
The water in the detergent dispenser is filled through a solenoid valve for cold water (with one inlet and 2 outlets);
The detergent dispenser has 3 compartments.

- Tray conveyor
- 2-way water inlet nozzle

8.2.2 Operating principle of 3-compartment conveyor

Water fill to pre-wash compartment (pre-wash solenoid) • This solution is used with the four compartment tray: the detergent contained in compartment “a” is loaded at the pre-wash start.	
Water fill to wash compartment (wash solenoid) • In all models: compartment “b” is used to contain the detergent loaded at the start of the washing.	
Water fill to conditioner compartment (pre-wash and wash solenoid valves) • In all models: compartment “c” is used for the conditioner, which is loaded at the start of the final rinse. The prewash and wash solenoid valves are activated simultaneously.	

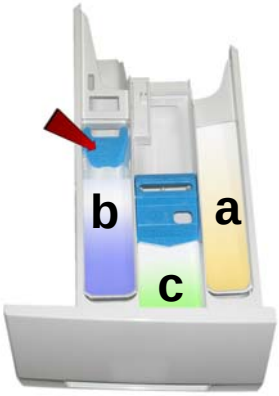
8.3 Detergent dispenser



8.3.1 Arranging the flap in the detergent dispenser

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

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



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

To modify the position of the flap, pull the detergent dispenser out (see page 53).

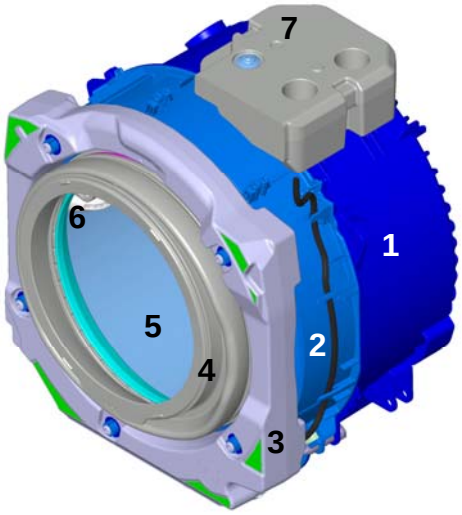
With the flap flipped down, the appliance is ready for use with liquid detergent.

For further details, read the instruction manual.

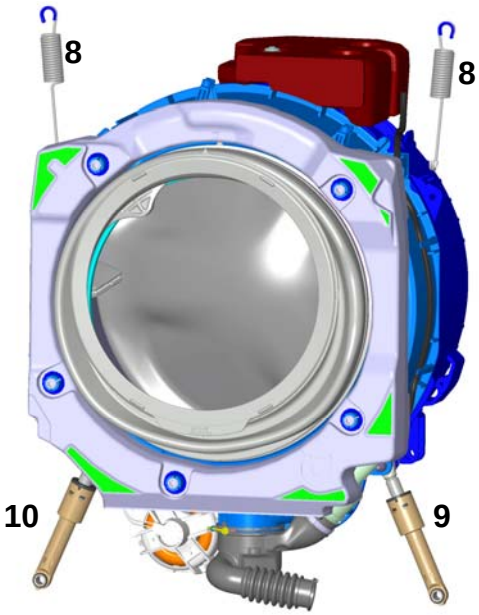
8.4 Washing unit

WASHING UNIT		
Type	Load capacity (cottons) Wash max.	Drum volume
G50XXL	7 Kg	49 litres

The washing unit is made up of:
A back casing (1) and a front casing (2), welded together to form the welded tub. Inside this is the drum (5) (made of stainless steel) with the three blades (6) (in carboran) snap-fastened to the drum.
To balance the unit during the washing movements and during the spin phases, the counterweights are secured in place with screws: one at the front (3) and one at the top (7).
The bellow seal (4) is fixed at the front.



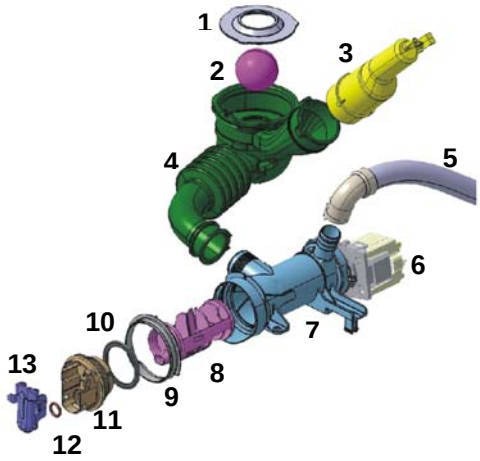
The washing unit is suspended by two coil springs (8) attached to the top crossbar, and the oscillations are dampened by two shock absorbers, one on the right (9) and one on the left (10)
(looking straight at the front of the appliance).



8.5 Water circuit

8.5.1 OKO version drain circuit

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



8.5.2 New Filter dial

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

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

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

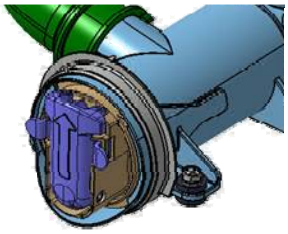


Fig. 1

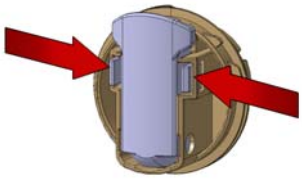


Fig. 2

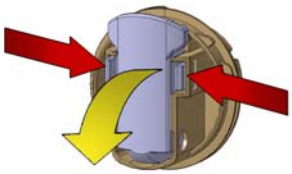


Fig. 3

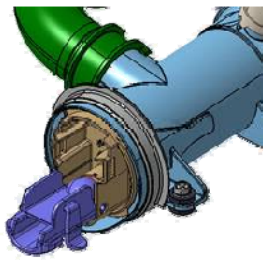
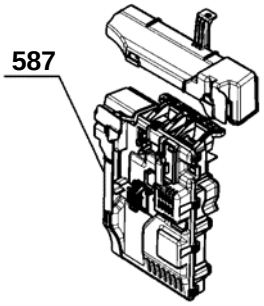


Fig. 4

8.6 Electronic control

8.6.1 Programming/Updating the main circuit board

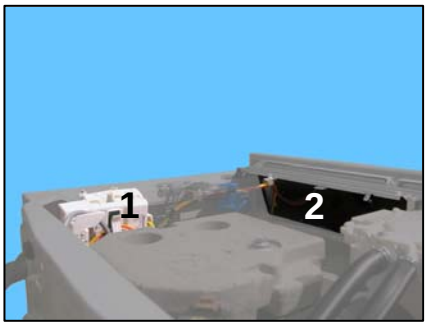
In the Service Notes the main circuit board (587) is identified with two spare parts codes:



- 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 "**Guide to Sidekick**" at the address (http://electrolux.edvantage.net) on the Electrolux Learning Gateway portal.

8.7 Electronic control



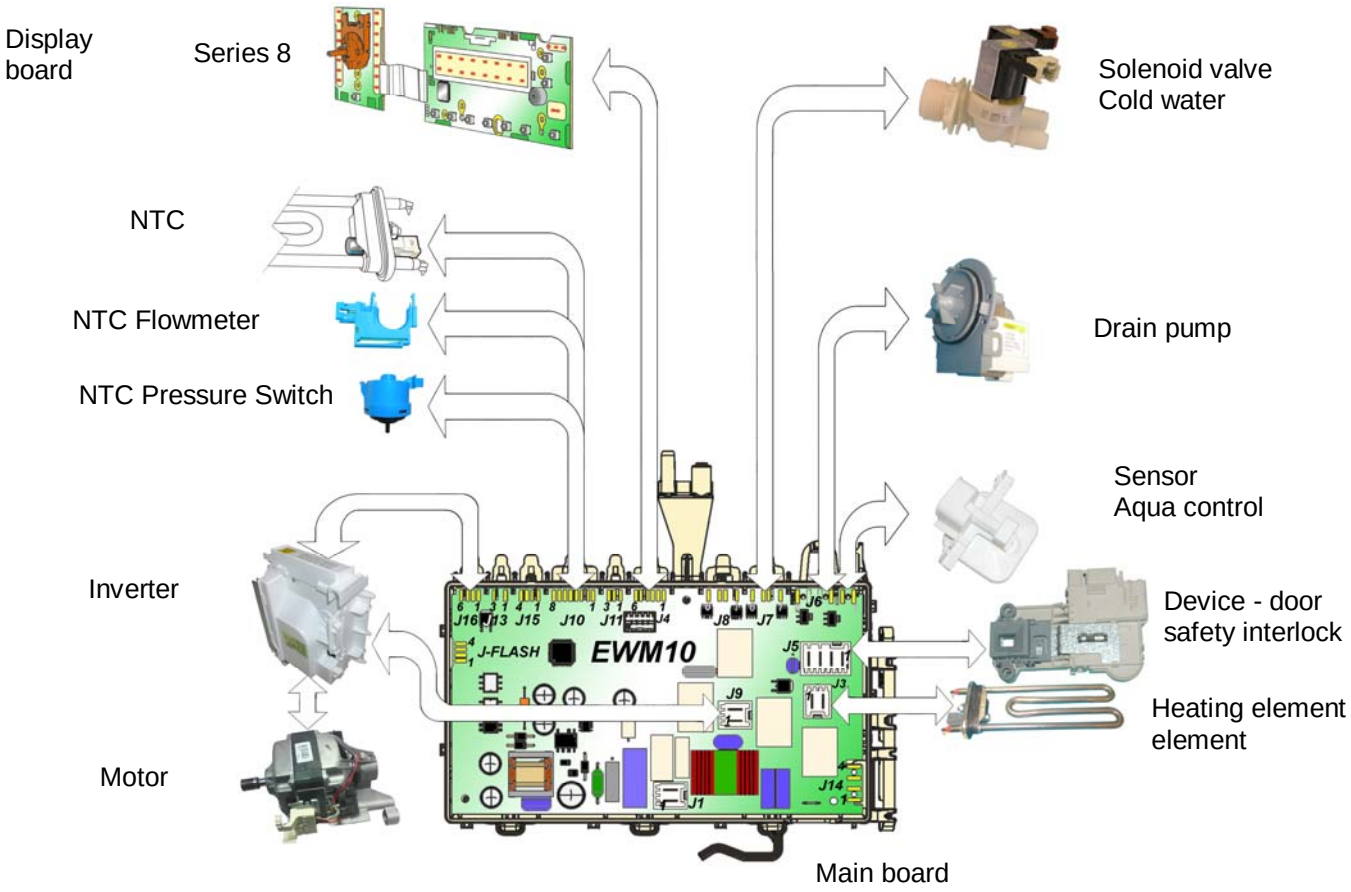
The electronic control is made up of:

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

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

The commands acquired by the display board (by turning the selector, selecting an option, etc...) are sent to the main circuit board, which powers all the electrical components (cold water solenoid valve, motor control board (Inverter), drain pump, heating element, door safety interlock, etc.).
It controls the level of water via the analogue pressure switch.
It controls the state of the door.
It controls the speed of the motor.
It controls the temperature of the washing water via the NTC probe inserted in the heating element.
It controls the voltage and frequency of the power supply and ensures they are close to the rated ones.
It controls the flow of water through the solenoid using the flow meter.

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



9 ELECTRICAL COMPONENTS

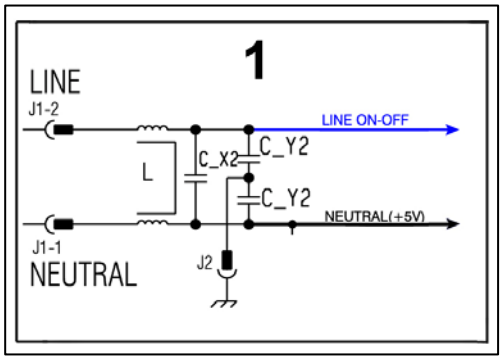
- **When replacing any of the components, please refer to the code shown in the list of spare parts relating to the appliance being repaired.**

9.1 Anti-disturbance filter

9.1.1 General characteristics

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

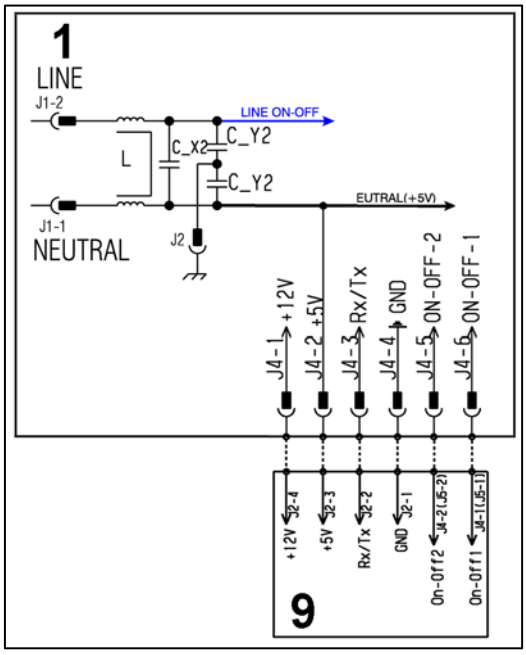
1. Main circuit board



9.2 Display board

The main circuit board (1) supplies the power supply voltage to the control/display board (9).
It is possible to select the programmes by turning the selector.
The options can be selected by pressing/touching the buttons/keys and the START/PAUSE button is used to start the machine or pause it.
The buzzer - where featured - is powered by the display board.

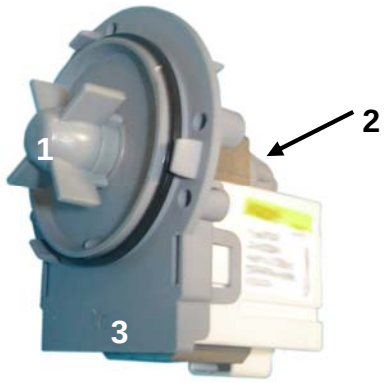
1. Main circuit board
9. Display board



9.3 Drain pump - Aqua control

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

9.3.1 General characteristics

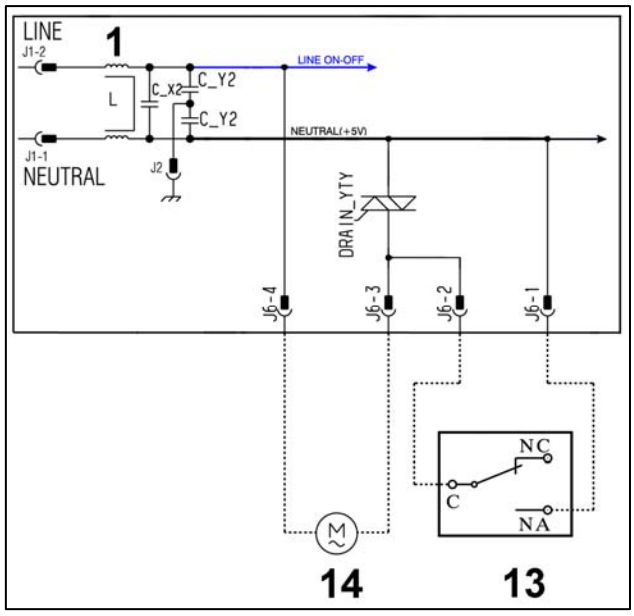


1. *Wheel*
2. *Rotor*
3. *Stator*

The pump, which drains the water at the end of the various washing cycle phases, is centrifugal and is actuate by a synchronous motor.
The rotor consists of a permanent magnet and the direction of rotation can be either clockwise or anticlockwise. It can turn by approximately a quarter of a revolution without turning the wheel. Consequently, if a foreign body is stuck in the wheel, the rotor can perform small movements clockwise and anticlockwise until the foreign body is released.
The flow rate of these pumps is approximately 18÷20 l/min, and the maximum head is 90 cm above ground level. Fitted with overload cut-out.

Important
Synchronous pumps, when powered on empty (disconnected from the water circuit), may not start in some cases because their very construction makes them need an antagonist torque on the wheel to allow the rotor to move in one of the two directions.
The pumps should therefore only be tested once fitted to the appliance, after a little water has been filled.

The drain pump is powered by the main circuit board through a triac, as follows:
- for a pre-determined period (and an alarm might be displayed - see table of alarms).
- until the electronic pressure switch closes on empty, after which the pump is actuated for a brief period or passes to the subsequent phase.



1. *Main circuit board*
13. *Aquacontrol sensor*
14. *Drain pump*

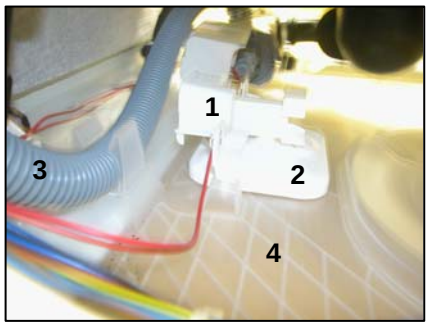
9.4 Aqua control

9.4.1 General characteristics

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

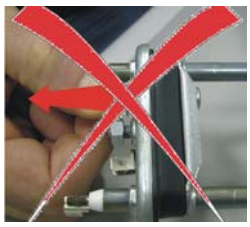
In the bottom of the washing machine there is a plastic bottom that forms a container. This collects any water leakage (from the tub, from the pipes, etc.), which flows into the area in which the float is positioned (made of polystyrene). In the presence of water this lifts up and triggers the microswitch,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

1. *micro-switch*
2. *float*
3. *drain pipe*
4. *Aqua control bottom*



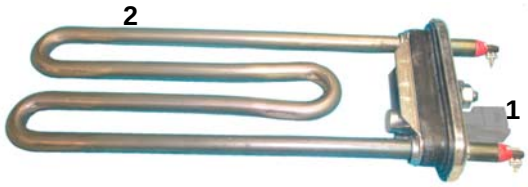
9.5 Heating element

- **When replacing the heating element, please refer to the code shown in the list of spare parts relating to the appliance.**
- **It is strictly forbidden to tamper with the heating element in any way!!!**
  (e.g. changing the NTC probe, etc...)



9.5.1 General characteristics

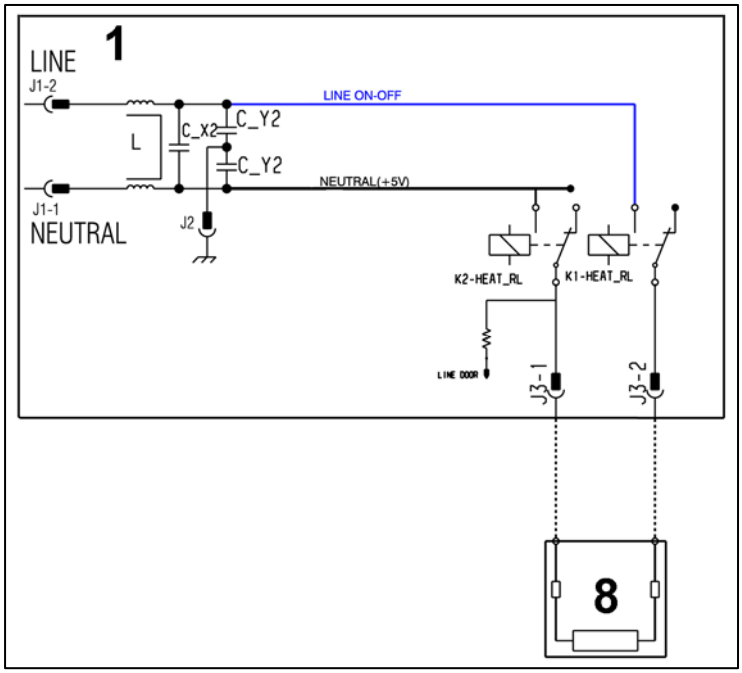
1. *NTC probe*
2. *Heating element*



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

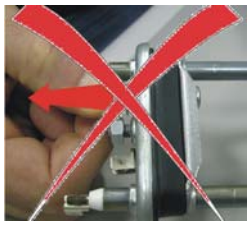
It is powered by two relays (K1, K2) situated in the circuit board. It is fitted with two thermal fuses which trip if the temperature of the heating element exceeds the values for which they were calibrated.
(In the event of a fault an alarm will be displayed - see table of alarms).

1. *Main circuit board*
11. *Heating element*

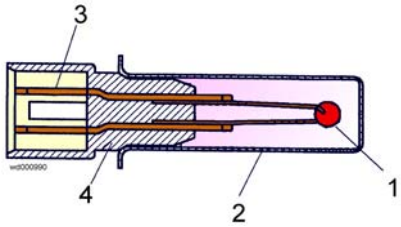


9.6 Temperature sensor

- **When replacing the heating element, please refer to the code shown in the list of spare parts relating to the appliance.**
- **It is strictly forbidden to tamper with the heating element in any way!!!**
  (e.g. changing the NTC probe, etc...)



9.6.1 General characteristics

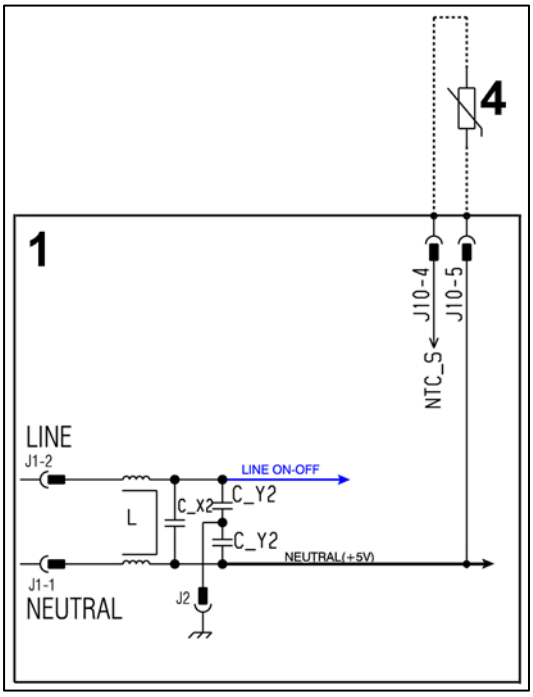


1. *NTC heating element*
2. *Metal capsule*
3. *Terminals*
4. *Plastic casing*

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

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

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



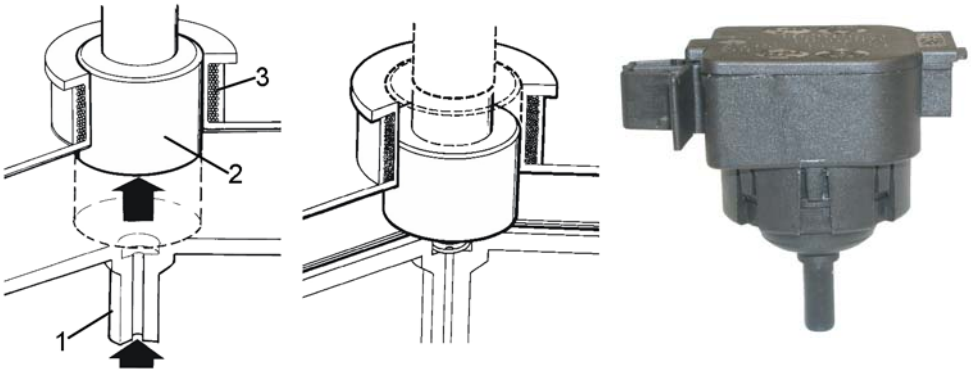
In the event of a fault (short-circuit or stoppage) an alarm will be displayed - see table of alarms.

9.7 Analogue pressure switch

9.7.1 General characteristics

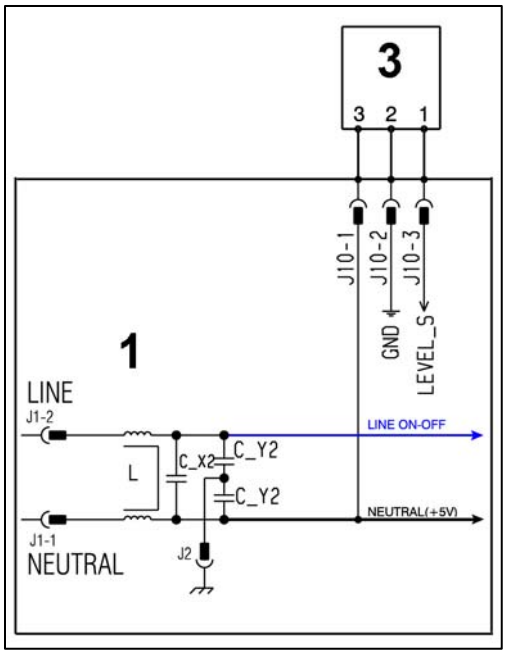
The electronic pressure switch is an analogue device that controls the water level in the tub, used in models with electronic control system, and it is directly connected to the main PCB.

1. *small pipe*
2. *core*
3. *oscillating coil*

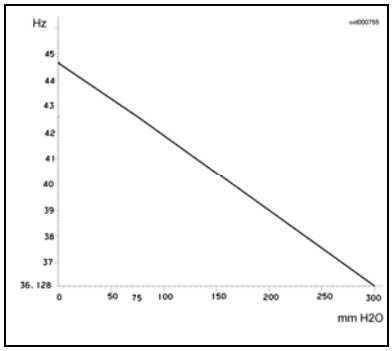


The pressure switch is connected via a pipe to the pressure chamber.
When water is introduced into the tub, this creates a pressure inside the hydraulic circuit that causes the membrane to change position. This in turn modifies the position of the core inside the coil, thus changing the inductance and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

1. *Main circuit board*
3. *Analogue pressure switch*



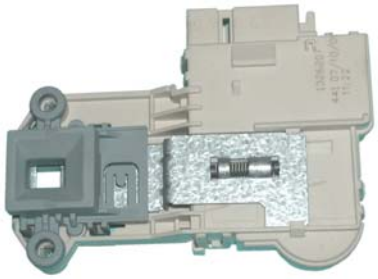
Operating frequency variation according to the quantity of water in the tub.



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

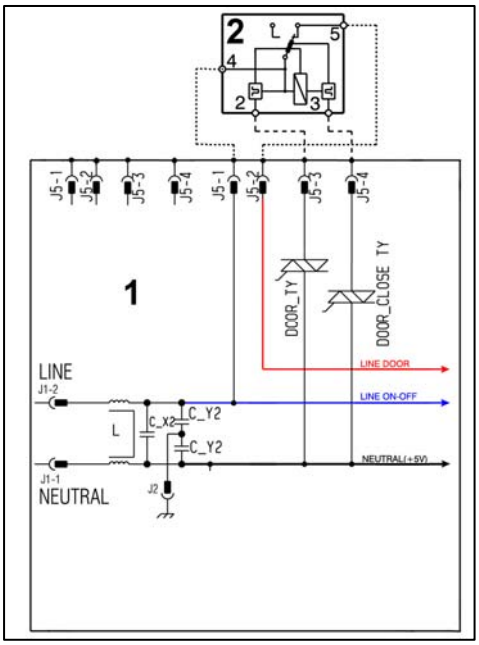
9.8 Door safety interlock

9.8.1 General characteristics



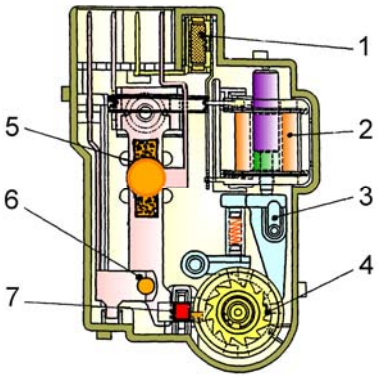
The instantaneous door interlock allows the door to be opened as soon as the drum stops.
If the conditions described further are met.

In appliances with a drum light, a door safety interlock is fitted with an integrated switch (piloted via a slide from the door latch). The information about the position of the switch is sent to the main circuit board and consequently powers the LED or not.



1 Main circuit board
2 Door safety interlock

9.8.2 Operating principle



1. Solenoid protection PTC
2. Solenoid
3. Lifting assembly
4. Cam
5. PTC - bi-metal
6. Electrical contacts (main switch)
7. Ratchet

- When the programme starts (start/pause button), the main circuit board sends a voltage pulse, lasting 20 msec, to the solenoid (at least 6 seconds must have passed since the appliance was turned on), which turns the position of the cam: the ratchet which locks the cursor of the door safety interlock is raised and simultaneously closes the contacts of the main switch, which powers all the appliance components.
- When the programme ends, the circuit board sends two additional 20 msec pulses (200 msec apart):
  - the first pulse moves the cam by another position, without releasing the ratchet.

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

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

- the drum must be stationary (no signal from the tachometric generator).
- the water level must not be higher than the lower edge of the door.
- the temperature of the water must not be higher than 40º C.

– Automatic release device
In the event of a power failure, turn the appliance off at the ON/OFF button, solenoid fault,
the bi-metal PTC cools in between 55 seconds and about 4 minutes (with temperature of 65º C)
and therefore releases the door.

– Solenoid protection

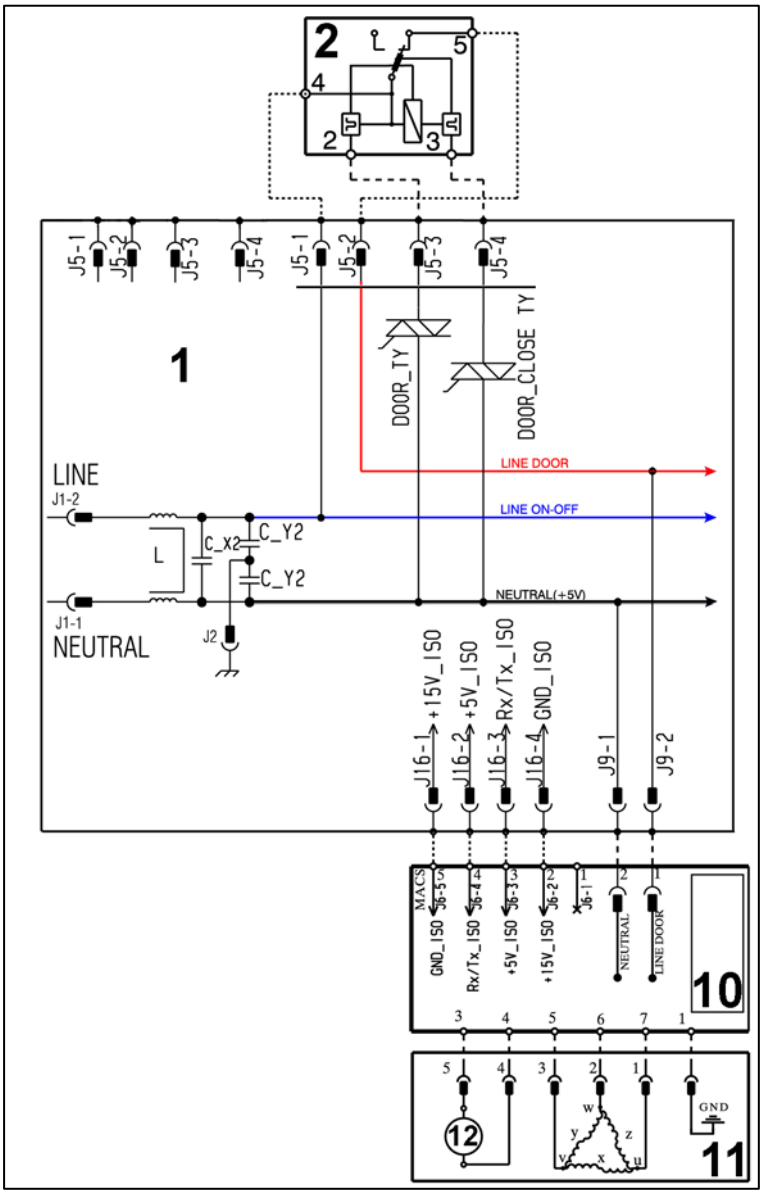
A PTC is connected in series to the solenoid to limit the current (and therefore any overheating) in the following cases:
→ main circuit board triac short circuit
→ many consecutive pressings of the start/pause button (more than 10 times)

9.9 Three-phase asynchronous motor - Inverter

9.9.1 General characteristics

1. Main circuit board
2. Door safety interlock
10. Inverter
11. Motor
12. Tachometric generator

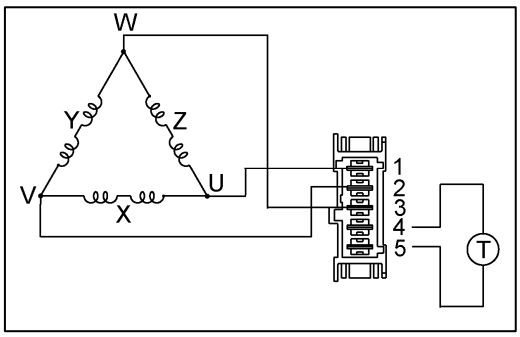
X-Y-X = Motor windings



9.9.2 Power supply to motor

Three-phase power is fed by the inverter (10), which sends through the connectors 5-6-7 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° and peak amplitude is 310V.

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



Coil y ohm 5.8 ~ ±7% (contacts 2-3)

Coil x ohm 5.8 ~ ±7% (contacts 1-2)

Coil z ohm 5.8 ~ ±7% (contacts 1-3)

Coil T (tachometric) ohm 181.5 ~ ±7% (contacts 4-5).

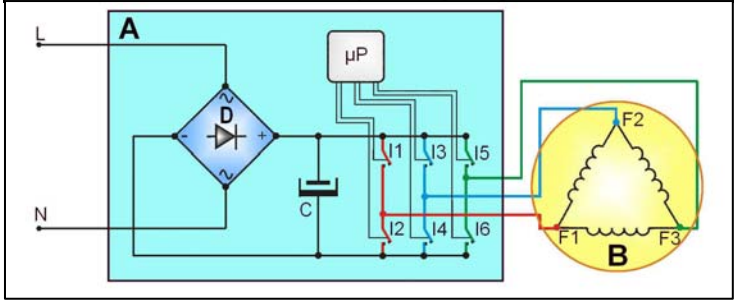
9.10 Inverter

9.10.1 General characteristics

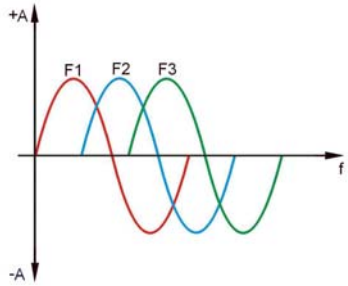
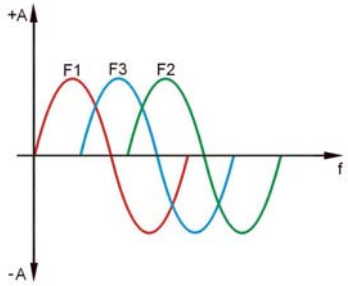
The EWM10931 electronics use a new asynchronous motor, with 2 poles, three-phase, with high performance and low noise levels.

L = Phase
N = Neutral
A = “INVERTER” board
B = Motor
C = Capacitor
D = Diodes
I1÷6 = Switches
F1÷3 = Motor connectors
µP = Micro Processor

“INVERTER” operating diagram



To transform the single-phase electricity (available in our homes) into three-phase electricity, a new circuit board is used (A) to transform the energy from single-phase to three-phase, which can be modulated in breadth and frequency respectively to adjust the power and number of revolutions of the motor.
Single-phase electricity (applied to connectors L-N), is rectified by the diode jumper (D), so there is a direct voltage of 310V at the ends of capacitor 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.

Clockwise rotation of the motor	Anti-clockwise rotation of the motor
	

The speed of rotation of the motor is determined by the signal received from the tachometric generator (T). During the spin phases, the microprocessor can perform, depending on the software configuration, the anti-foam check, where featured, and the anti-unbalancing check.

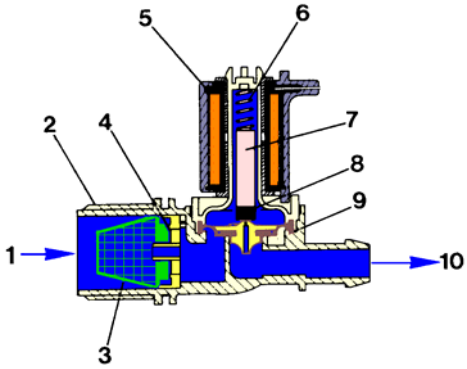
- **Any work on electrical appliances must only be carried out by qualified technicians.**
- **Unplug the appliance before accessing internal components.**
- **When replacing the “INVERTER” board, do not open the plastic casing, because some parts are subject to high voltage values and some condensers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

9.11 Solenoid valves

9.11.1 General characteristics

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

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



9.11.1.1 Operating principle

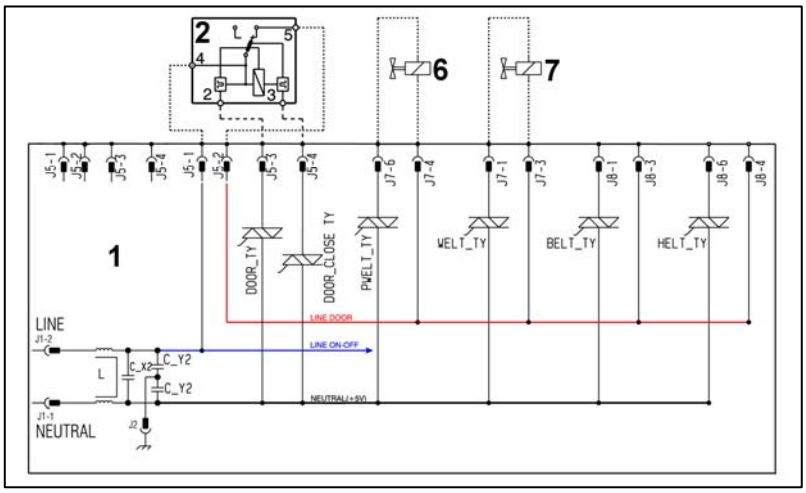
When idle, the core, pushed by a spring, keeps the central hole of the membrane closed and so the latter hermetically seals access to the water inlet duct.
When the coil is powered, the core is attracted, releasing the central hole of the membrane. Consequently the valve opens.

9.11.1.2 Mechanical jamming of the solenoid valve

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

9.11.1.3 Low water pressure

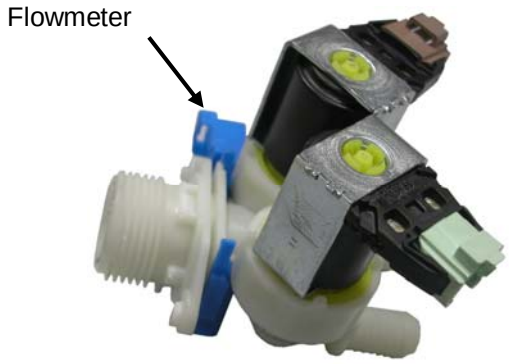
If the flow sensor does not generate a signal during the water fill phases, even though power is being supplied to the solenoid valve, the cause of this condition may be a closed water tap or clogged filter on the solenoid valve (with ensuing low water pressure). If this occurs, only a WARNING will be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



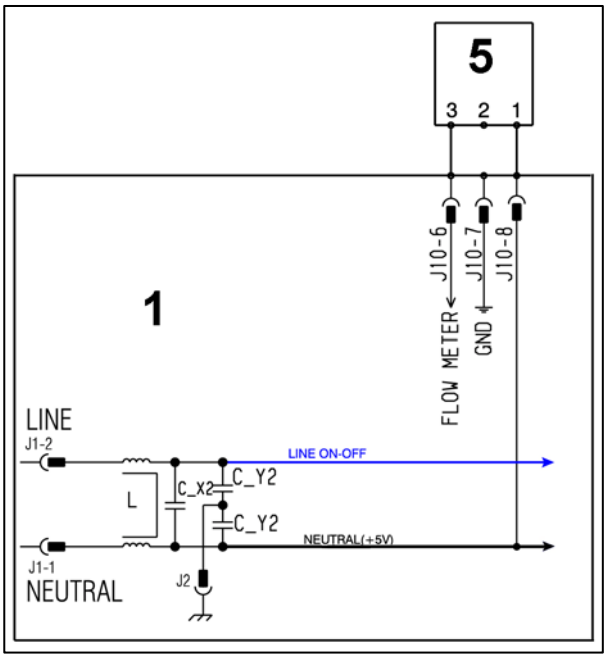
1. *Main circuit board*
2. *Door safety interlock*
6. *Pre-wash solenoid*
7. *Wash solenoid*

9.12 Flowmeter

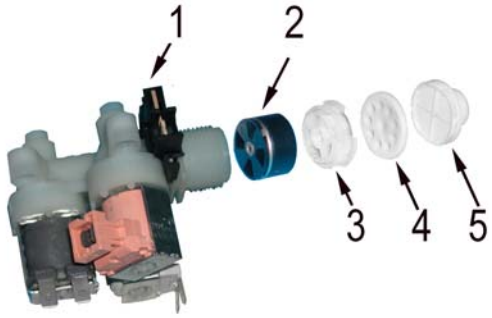
9.12.1 General characteristics



1. Main circuit board
5. Flow sensor



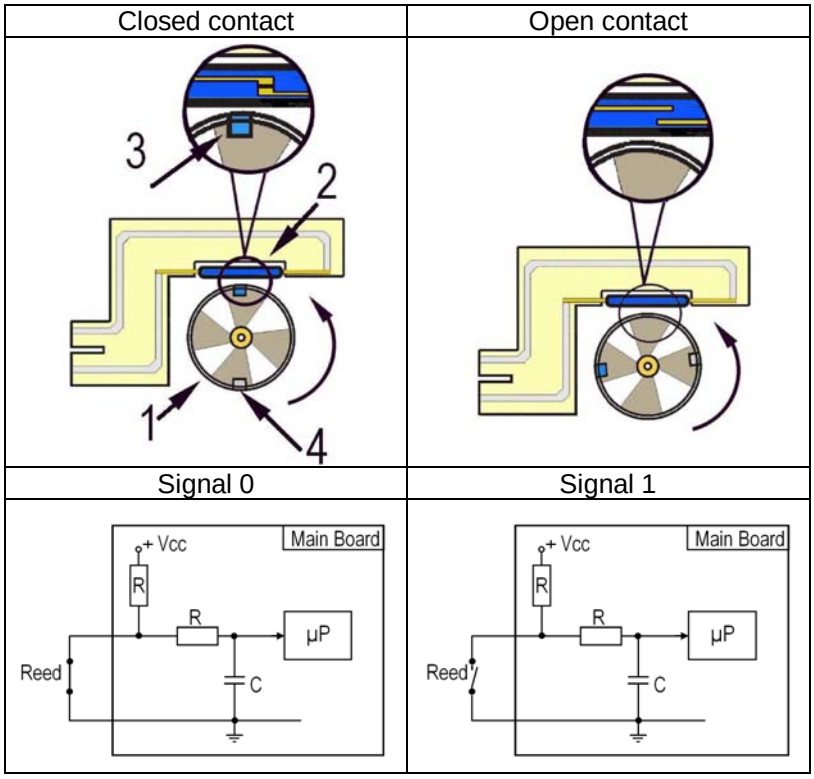
Some models of solenoid valves have a built-in flow sensor, which measures the quantity of water in litres that is loaded into the appliance.
In the event of a sensor failure, the water level is controlled by the analogue pressure switch.

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

9.12.2 Operating principle of the flowmeter

The main components of the flowmeter are:

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



Water entering the solenoid valve rotates the turbine (1) and magnet (3), which passes in front of the Reed contact (2), thus closing it. As this contact opens and closes, it generates pulses (at a frequency that depends on the water flow rate).
The turbine completes 230 revolutions for each litre of water. The operating range of the flow sensor is 0.2÷10 bar.
Using the signal it receives, the micro-processor can calculate the number of litres of water passing through the solenoid valve.

9.13 Alarm Summary Table

Alarm	Description	Possible fault	Machine status/action	Reset
E00				
E11	**Water fill difficulty during washing**	Tap closed or water pressure too low; Drain pipe improperly positioned; Water fill solenoid valve faulty; Leaks from water circuit on pressure switch; Pressure switch faulty; Wiring faulty; Main PCB faulty.	Cycle is paused with door locked	START/RESET
E13	**Water leaks**	Drain pipe improperly positioned; Water pressure too low; Water fill solenoid valve faulty; Water circuit on pressure switch is leaking/clogged; Pressure switch faulty.	Cycle is paused with door locked	START/RESET
E21	**Drain difficulty during washing**	Drain pipe kinked/clogged/improperly positioned; Drain filter clogged/dirty; Wiring faulty; Pressure switch faulty; Drain pump rotor blocked; Drain pump faulty; Main PCB faulty.	Cycle paused (after 2 attempts)	START ON/OFF RESET
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
E31	**Malfunction in electronic pressure switch circuit**	Wiring; Faulty pressure switch; Main PCB;	Cycle stops with door locked	RESET
E32	**Calibration error of the electronic pressure switch**	Drain pipe kinked/clogged/improperly positioned; Solenoid valve faulty; Drain filter clogged/dirty; Drain pump faulty; Leaks from pressure switch hydraulic circuit; Pressure switch faulty; Wiring; main PCB;	Cycle paused	START/RESET
E35	**Overflow**	Water fill solenoid valve faulty; Leaks from water circuit on pressure switch; Wiring faulty; Pressure switch faulty; Main PCB faulty.	Cycle interrupted. Safety drain cycle. Drain pump continues to operate (5 min. on, then 5 min. off. etc.)	RESET
E38	**Internal pressure chamber is clogged (water level does not change for at least 30 sec. of drum rotation)**	Motor belt broken; Water circuit on pressure switch clogged.	Heating phase is skipped	RESET
E41	**Door open**	Check whether the door is closed properly; Wiring faulty; Door safety interlock faulty; Main circuit board faulty.	Cycle paused	START/RESET
E42	**Problems with door lock**	Wiring faulty; Door safety interlock faulty; Electrical current leak between heating element and ground; Main PCB faulty.	Cycle paused	START/RESET
E43	**Faulty triac supplying power to door delay system**	Wiring faulty; Door safety interlock faulty; Main circuit board faulty.	(Safety drain cycle) Cycle blocked	RESET
E44	**Faulty sensing by door delay system**	Main circuit board faulty.	(Safety drain cycle) Cycle blocked	RESET

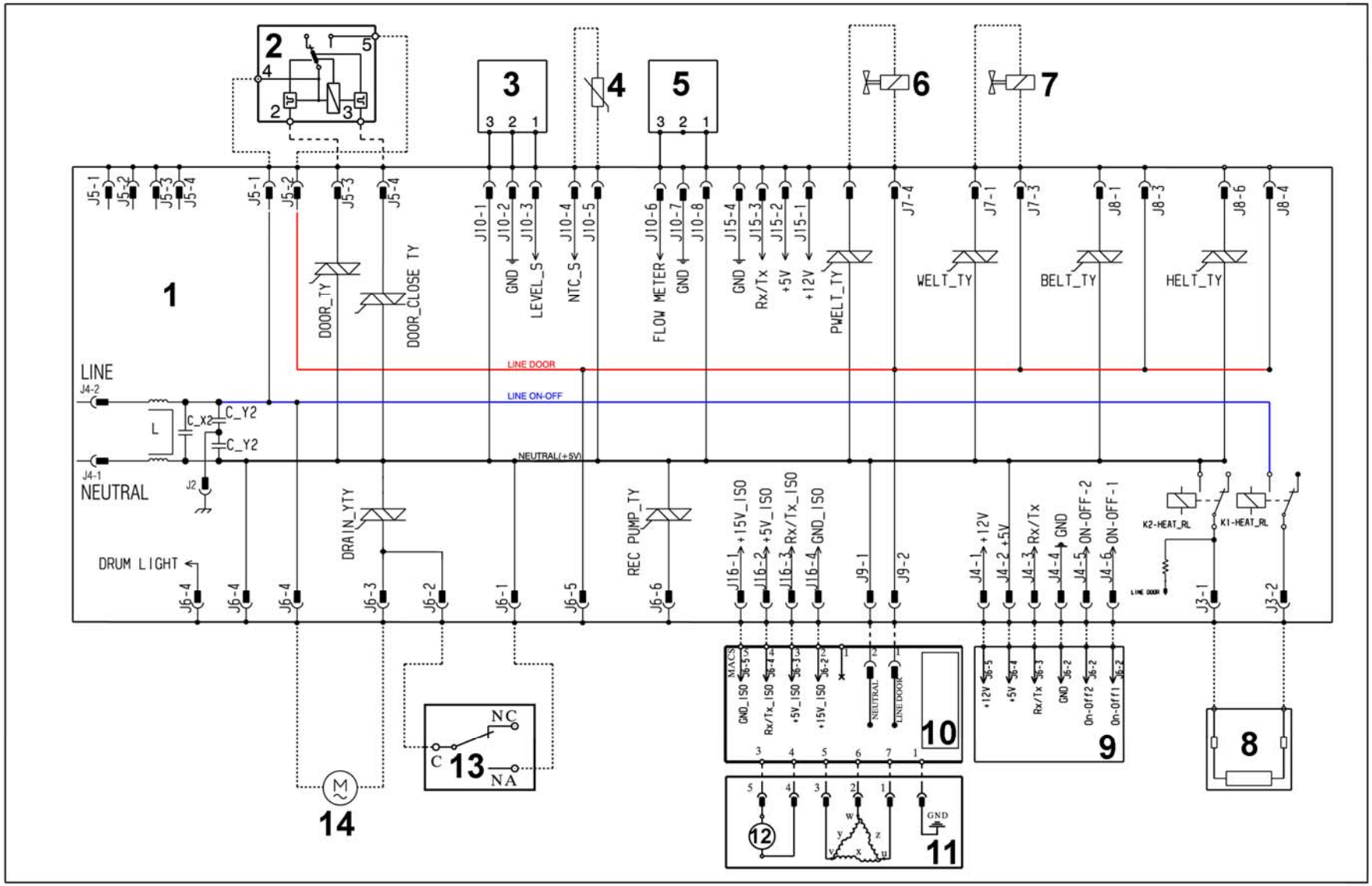
Alarm	Description	Possible fault	Machine status/action	Reset
E45	**Faulty sensing by door delay system triac**	Main circuit board faulty.	(Safety drain cycle) Cycle blocked	RESET
E52	**No signal from motor tachometric generator**	Motor-inverter wiring faulty; Faulty motor; Inverter board faulty;	Cycle stops with door locked (after 5 attempts)	ON/OFF RESET
E57	**Inverter is drawing too much current (>15A)**	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 (>4.5A)**	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 signal from tachometric generator for 3 seconds**	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.	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**	Wiring faulty; Control/display PCB faulty, Inverter board faulty, Weight sensor board faulty, ED 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 175V**	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	**Current leak to the ground**	Earth leakage between washing 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 washing heating element and earth; Main PCB faulty.	Safety water fill Cycle stops with door closed.	ON/OFF RESET

Alarm	Description	Possible fault	Machine status/action	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
E74	**NTC probe for wash cycle improperly positioned**	Wiring faulty; NTC probe for wash cycle improperly positioned; NTC probe faulty; Main PCB faulty.	The heating phase is skipped	RESET
E83	**Error in reading selector**	Main PCB faulty (Incorrect configuration data).	Cycle cancelled	START/RESET
E86	**Selector configuration error**	Display board	----------	START ON/OFF RESET
E87	**Display board microprocessor faulty**	Display board	No action to be performed, if continues, replace the display board	START ON/OFF RESET
E91	**Communication error between main PCB and display**	Wiring faulty; Control/display PCB faulty, Inverter board faulty, Weight sensor board faulty, ED PCB faulty, Main PCB 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
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
EC2	**Data transfer error between Weight sensor and main PCB.**	Wiring faulty; Weight sensor faulty, PCB faulty;	----------	START/RESET
EC3	**Problems with the weight sensor (communication error with the weight sensor, no signal or outside the limits)**	Wiring faulty; Weight sensor faulty; Main PCB faulty	----------	START/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

Alarm	Description	Possible fault	Machine status/action	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	RESET
EF3	**Aqua control system intervention**	Water leaks onto base frame; Aqua control system faulty; Drain pump winding interruption/overheating.	Appliance drains	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
EF6	**Reset**	If it continues, replace the main board.	No action to be taken	----------
EH1	**Supply frequency of appliance outside the limits**	Problem with the power supply network (incorrect/disturbed); Main PCB faulty.	Wait for nominal frequency conditions	ON/OFF
EH2	**Supply voltage too high**	Problem with the power supply network (incorrect/disturbed); Main PCB faulty.	Wait for nominal voltage conditions.	ON/OFF
EH3	**Supply voltage too low**	Problem with the power supply network (incorrect/disturbed); Main PCB faulty.	Wait for nominal voltage conditions.	ON/OFF
EH4	**0Watt relay malfunction**	Main circuit board faulty.	----------	ON/OFF RESET
EHE	**Inconsistency between FCV relay (in the main board) and safety "sensing" circuit**	Faulty cabling; Main circuit board faulty	Safety drain cycle Cycle stops with door open	RESET
EHF	**Safety sensing circuit faulty (wrong input voltage to microprocessor)**	Main circuit board faulty.	Safety drain cycle Cycle stops with door open	RESET

10 DIAGRAMS

10.1 Main diagram



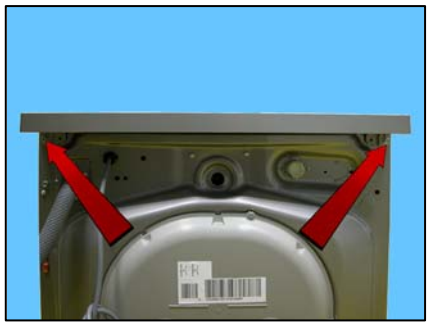
10.2 Key to diagram

Appliance electrical components	PCB components	
1. Main circuit board	DRAIN_YTY	Drain pump Triac
2. Door safety interlock (with light micro-switch)	DOOR_TY	Door interlock Triac
3. Electronic pressure switch	DOOR_CLOSE_TY	Door interlock Triac
4. NTC (washing)	PWELT_TY	Pre-wash solenoid Triac
5. Flow sensor	WELV_TY	Wash solenoid Triac
6. Pre-wash solenoid	K1	Heating element relay
7. Wash solenoid	K2	Heating element relay
8. Heating element		
9. Display board		
10. Motor control board (Inverter)		
11. Triple-phase motor		
12. Tachometric generator (motor)		
13. Aqua control sensor		
14. Drain pump		

11 ACCESS

11.1 Worktop

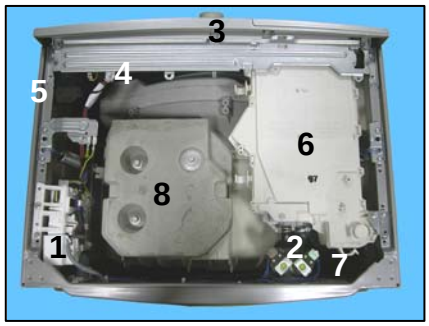
Remove the screws that secure it to the back panel.



Pull it out from the back

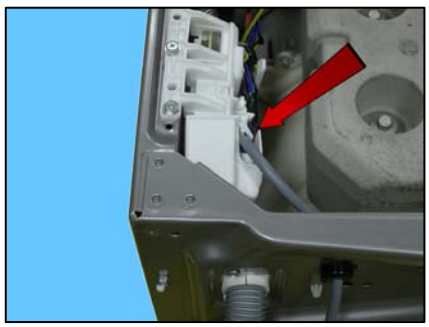
11.2 From the worktop, you can access

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

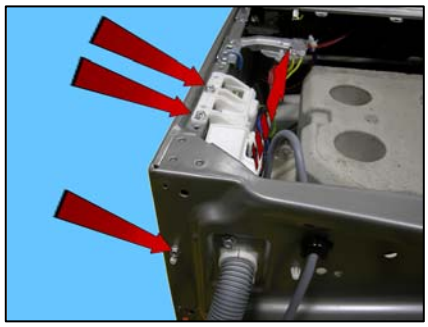


11.2.1 Main board

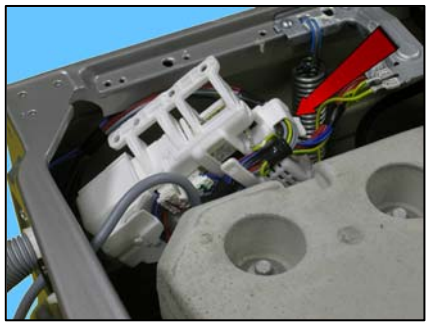
Remove the worktop (see relevant paragraph).
Take the power supply cable out of the hook that secures it to the main PCB casing



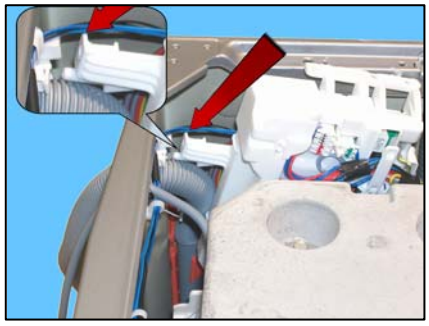
Unfasten the three screws securing it to the cabinet
Move it in the direction of the dotted arrow.



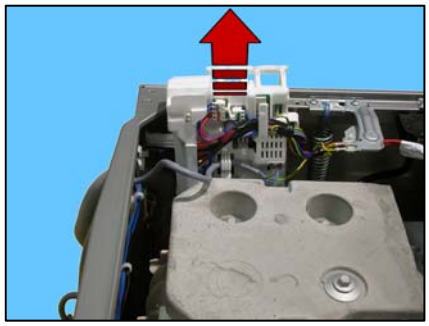
Pull the wiring out of the hook that secures it to the main PCB casing



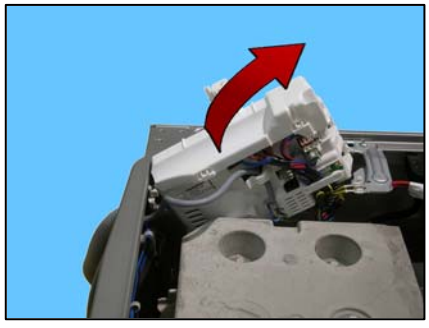
Place the wiring behind the hook securing the board to the back panel



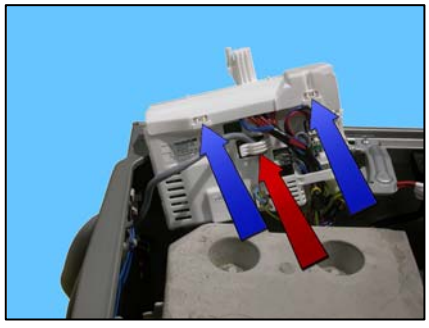
Lift the board assembly



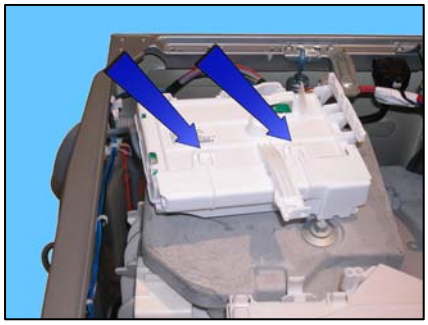
Turn it



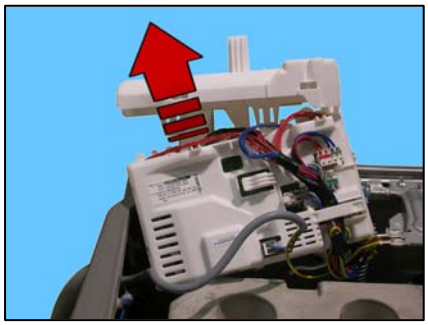
Detach the power supply cable from the relevant hook (red arrow)
Release the hooks securing the connectors protection on one side (blue arrows)



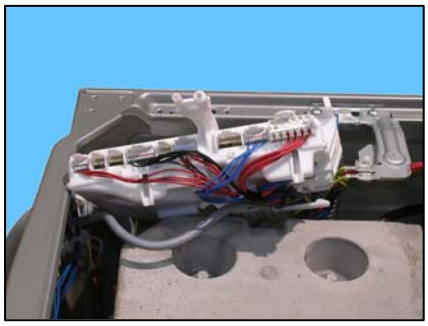
Then the other



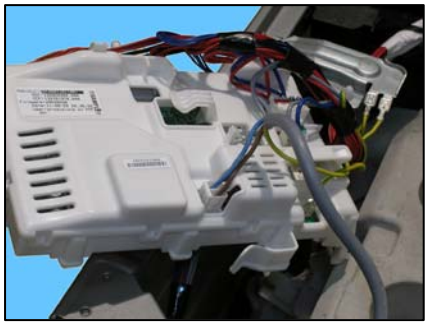
Remove the connectors protection



Pull out the connectors positioned beside the board.



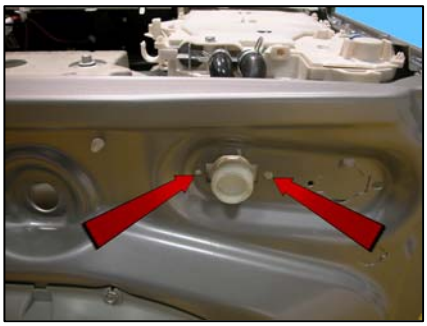
Pull out the other connectors, taking care as they are retained by hooks.



11.2.2 Solenoid valve

Remove the worktop (see relevant paragraph).

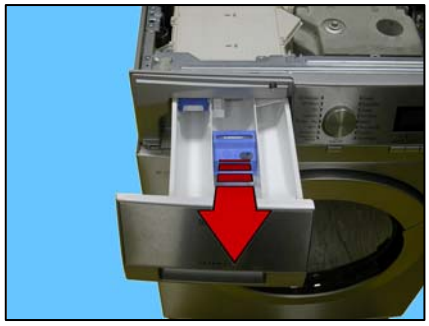
Disconnect the connectors (red arrows)
Pull out the pipes which connect the solenoid valve to the detergent dispenser (blue arrows).



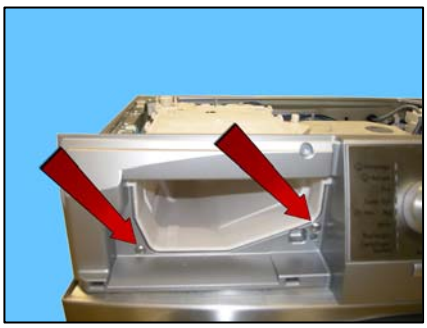
Unscrew the water fill pipe from the solenoid valve.
Push the two retainers indicated by the arrows towards the inside of the appliance.
At the same time, turn the solenoid valve to remove it.

11.2.3 Control panel

Remove the worktop (see relevant paragraph).

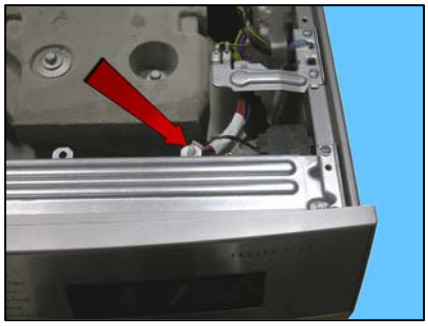


Pull the detergent dispenser out and at the same time press the stop locking it in place.

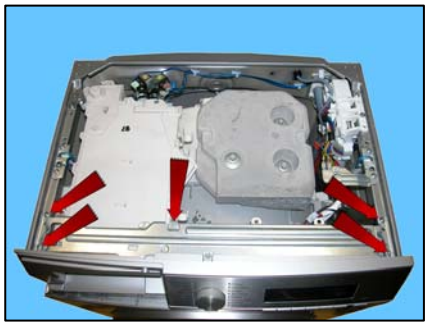


Loosen the screws that attach the control panel to the detergent tray.

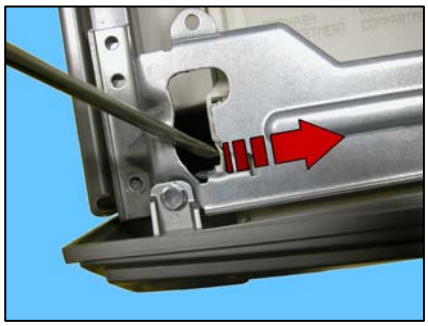
Pull out the clamp from the crosspiece.



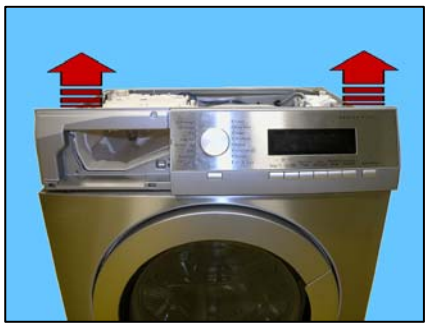
Remove the four screws which secure the crosspiece to the cabinet
Remove the screws which secure the detergent dispenser to the crosspiece.



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

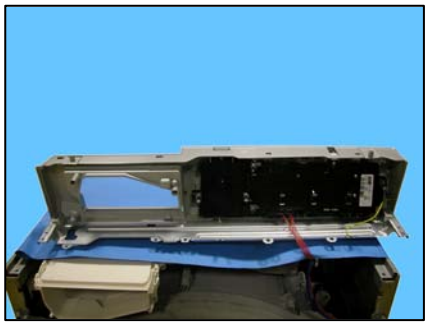


Raise the control panel to pull out the hooks which secure it to the front panel.



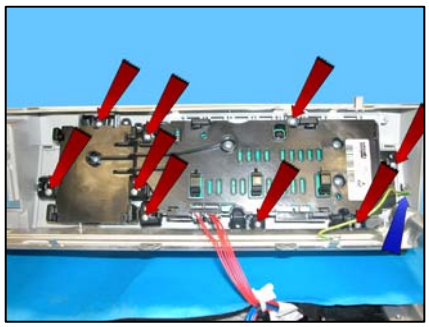
Pull it out towards the front, to extract the detergent dispenser.

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



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

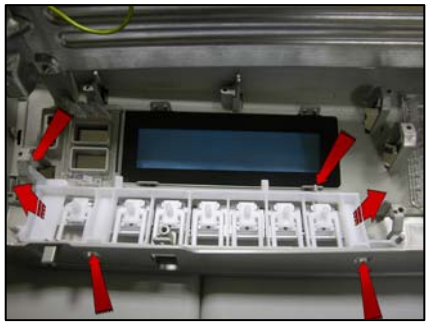
Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).



Disconnect the wire that connects the earth to the control panel (blue arrow).

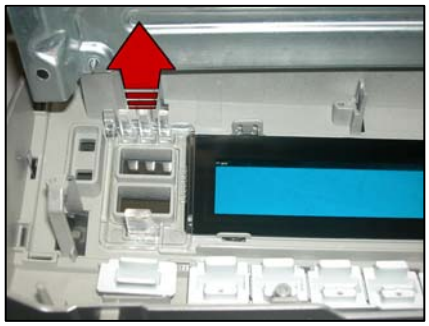
Remove the screws and release the hooks which secure the board assembly to the control panel (red arrows).

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



- Buttons spring

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

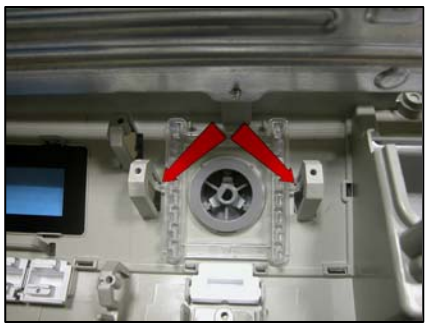


- Light diffuser

Take it out of its seat.

- Buttons

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



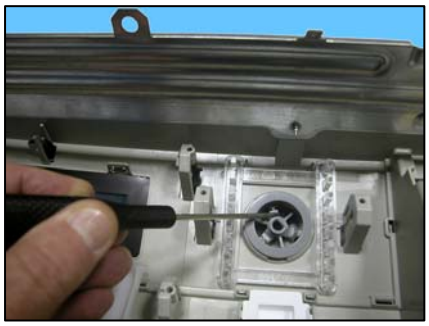
- Selector light diffuser

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

When reassembling the display board assembly and the control panel.

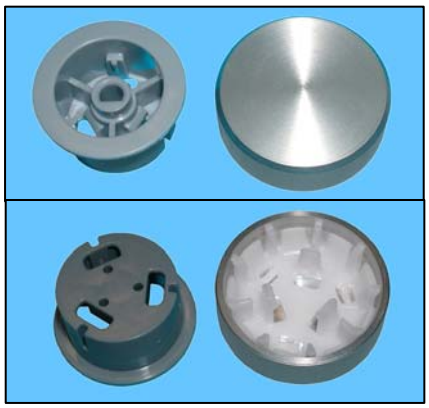
Remove the dial cover from the hand dial.

If you are having difficulty.

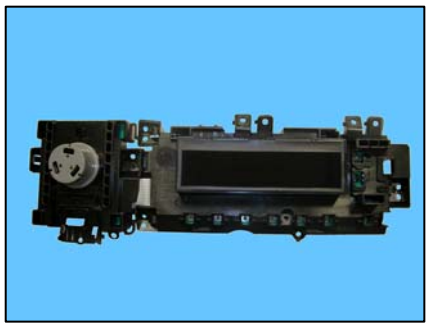


Use a screwdriver, release the hooks that fasten them together, fasten the whole to the control panel.

Illustration of the dial and the dial cover.



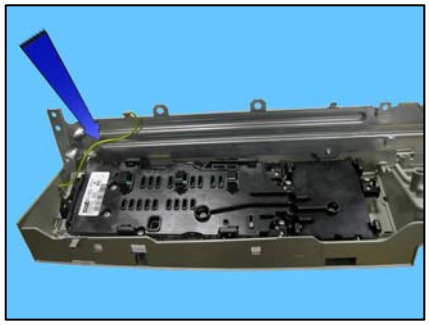
Thread the dial onto the selector pin.



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

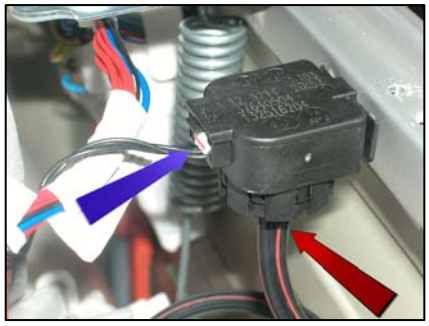
Insert the dial cover.

Reconnect the earth wire.



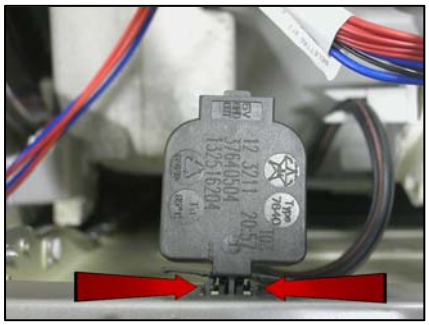
11.2.5 Analogue pressure switch

Remove the worktop (see relevant paragraph).



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

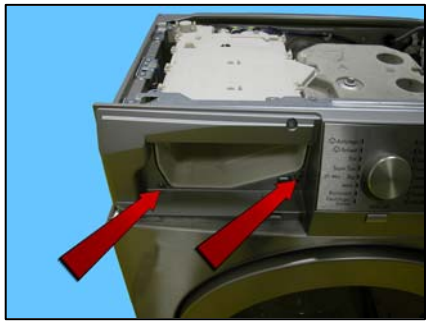
Tighten the two tabs which secure it to the cabinet and remove it.



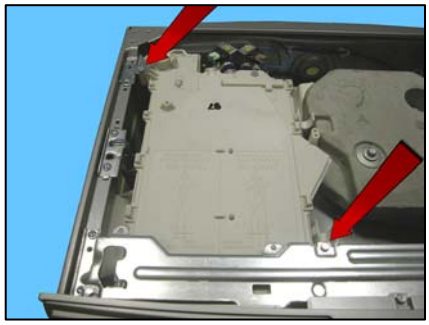
11.2.6 Detergent dispenser

Remove the worktop (see relevant paragraph).
Remove the pipes that connect it to the solenoid valve.
Remove the solenoid valve (see paragraph relating to the solenoid valve).
Pull out the detergent dispenser (see paragraph relating to the control panel).

Remove the two screws securing the dispenser to the control panel.



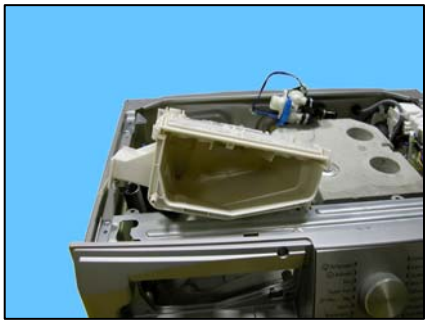
Loosen the screws that secure it to the control crossbar and rear bracket respectively.



Loosen the screw of the clamp securing the detergent loading pipe to the dispenser.

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

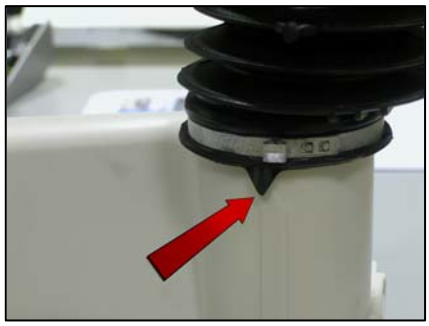
Remove the detergent dispenser.



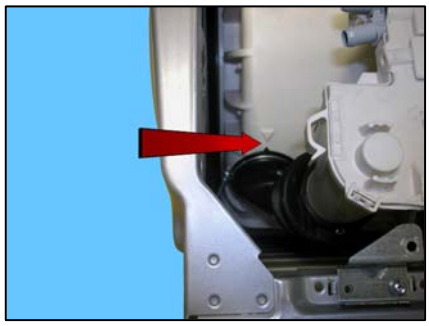
11.2.7 Detergent fill pipe

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

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



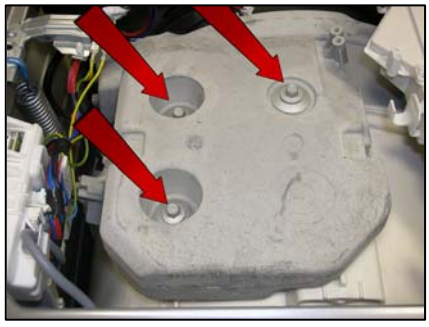
Align the marks also when it is secured to the welded tub.



11.2.8 Upper counterweight

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

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



11.3 Accessing the front part

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

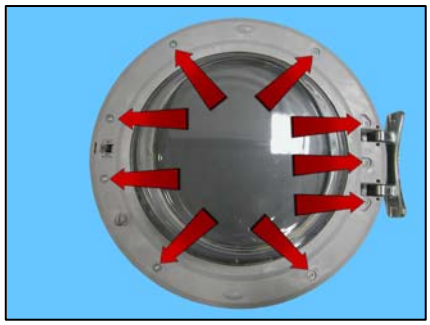
11.3.1 Door hinge - Door

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

Pull out the lower part of the hinge and raise it at the same time to pull it out of the front panel.

When reassembling, repeat these steps in the reverse order.

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



Separate the two frames, taking care not to damage them.

Front frame and cover with latch and child lock spring.

Detail of the latch and child lock spring

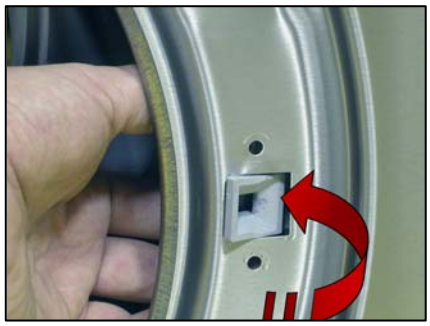
11.3.2 Door safety interlock

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

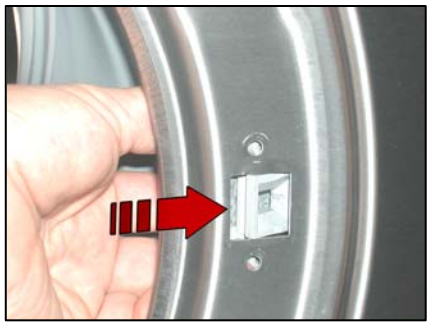
Unfasten the two screws securing the door safety interlock to the front panel.

Take the device and move it in the direction shown by the arrow.

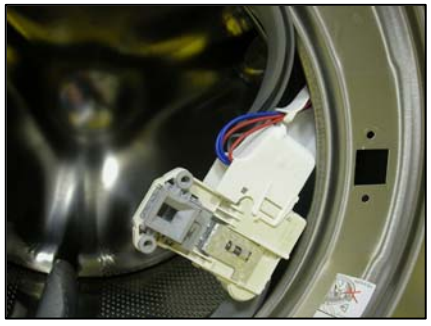
Turn it towards the inside (the right-hand side of the flange).



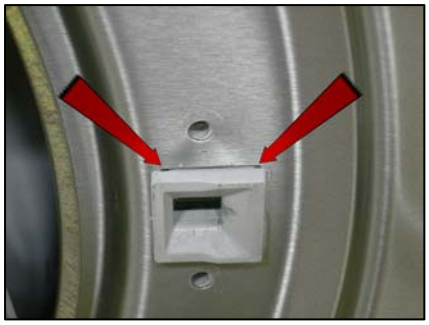
Pull it out towards the right and remove it.



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



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

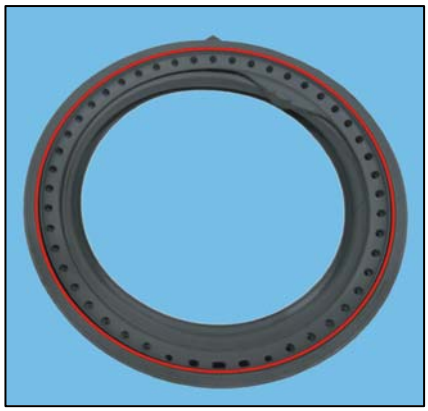


Before tightening the screws to secure the door safety interlock to the front panel, make sure the flange is positioned properly on the outside as indicated by the arrows.

Tighten the screws at a torque of 2.5 Nm.

11.3.3 Bellow seal

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



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

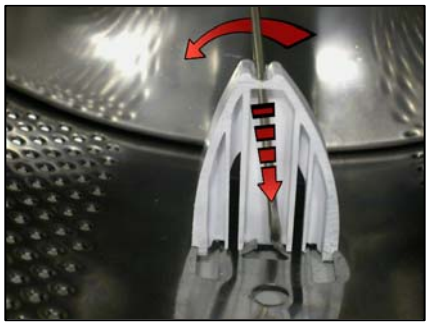
When reassembling the seal:
Use liquid soap to lubricate the part where the tub is inserted (indicated by the red circle).
Make sure the references are aligned.
Reassemble the snap ring between the door bellow seal and the tub.
Reassemble the iron ring between the door bellow seal and the cabinet.

11.3.4 Blade

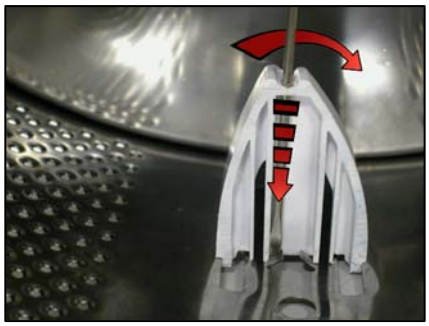
This blade is secured to the drum with slides and secured with blades carved into the drum.

To remove it from the drum:

Insert a screwdriver into the last hole on the right-hand side of the blade.

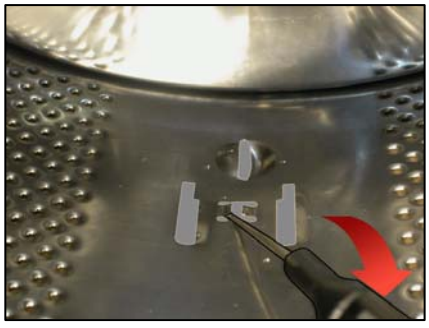


Insert the screwdriver with the handle tilted towards the left
Push the right-hand tab down.



insert the screwdriver with the handle tilted towards the right;
push the left-hand tab down.

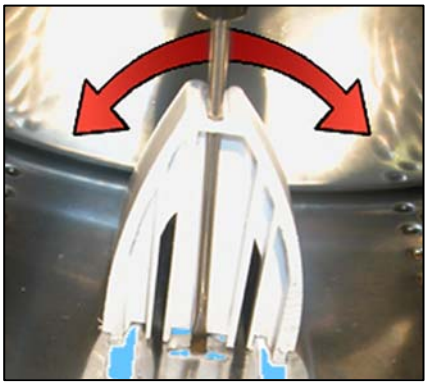
When the two tabs are down
move the blade towards the front of the drum.



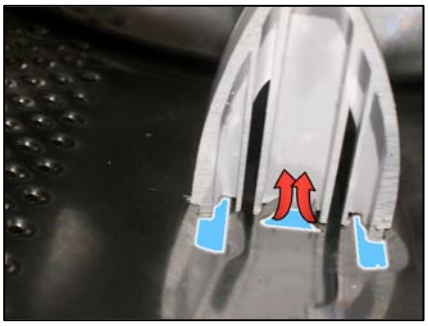
Before securing the new blade
insert a screwdriver beneath the tabs and raise them a little.

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

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



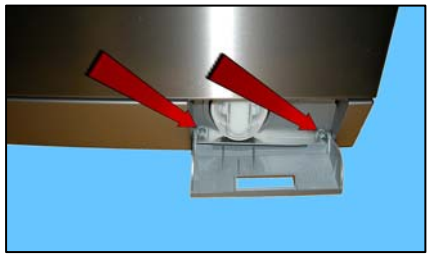
To move the tabs up (as indicated by the arrows in the figure) and insert them inside the blade, securing it to the drum (as shown in the figure).



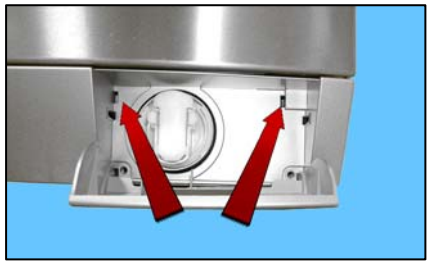
11.3.5 Front panel

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

Open the filter flap and remove it if necessary.

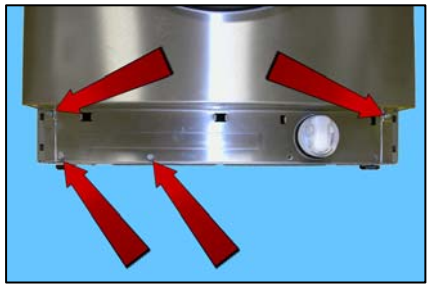


Loosen the two screws that secure the plinth to the front.

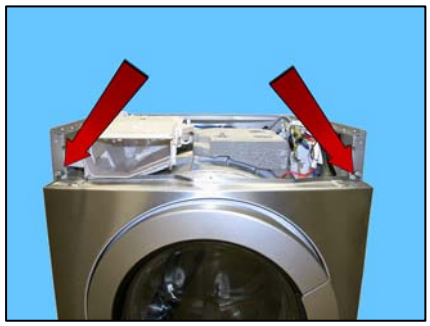


Release the two hooks that secure it to the front (indicated by the arrows).

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



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



Unfasten the four screws securing the front panel to the sides (indicated by the arrows).

Remove the front panel.

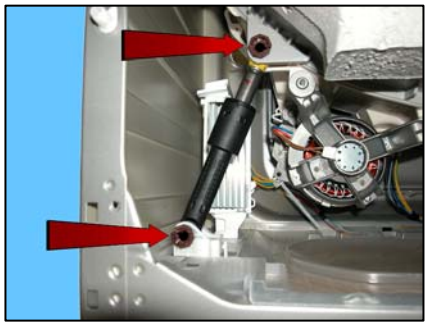
11.4 From the front panel, you can access

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

11.4.1 Front counterweight

Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Unfasten the screws securing the door safety interlock (see related paragraph).
Remove the front panel (see relevant paragraph).
Pull out the Jet pipe (see related paragraph).
Pull out the lamp from its seat.
Unfasten the five screws securing the front counterweight to the welded tub assembly.
If the welded tub assembly is new, tighten the screws at a torque of 15 Nm.
If the welded tub assembly is not new, align with the existing thread and tighten the screws at a torque of 10÷12 Nm.

11.4.2 Shock absorber



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

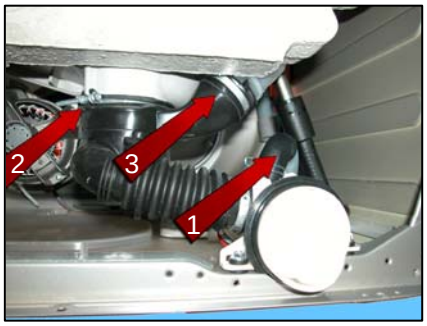
Pull out the pins securing it to the tub and crosspiece.

To remove the pin, press the anchor tab indicated by the arrow while at the same time pulling it out with a pair of pliers.

To reposition the pins, see para. 11.5 page 70.

11.4.3 Drain water circuit

- Tub drain pipe

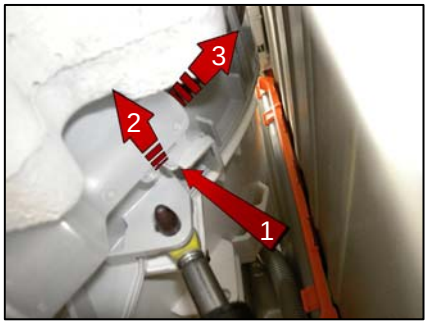


Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Unfasten the screws securing the door safety interlock
(see related paragraph).
Remove the front panel (see relevant paragraph).
Pull out the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

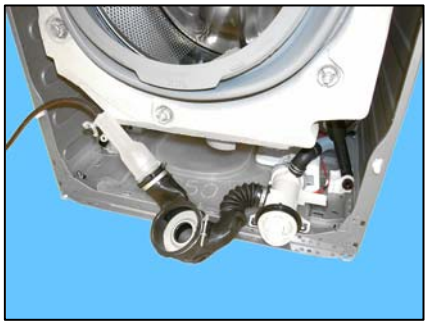
11.4.4 Pressure chamber

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

Loosen the screw of the clamp securing the drain pipe to the welded tub
Remove it from its position, pulling it out.



Push the hook (1) as shown by the arrow (2), while at the same time lifting the chamber (3) from the support securing it to the tub.



Turn the chamber under the tub and pull it out.

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

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

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

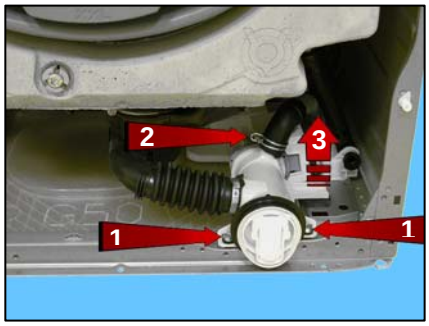
When repositioning the pressure chamber in the tub drain pipe, pay attention to the references.

The size of the clamp to use is 52.5mm.

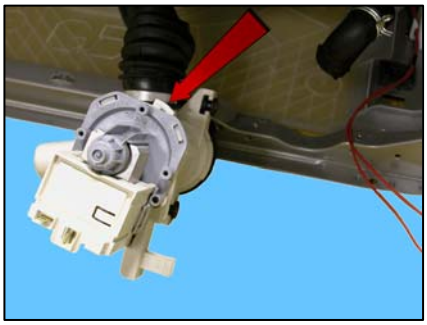
When reassembling the pressure chamber, reposition the pipe connecting the analog pressure switch inside the anchors provided around the welded tub to prevent it from touching the cabinet.

11.4.5 Filter body

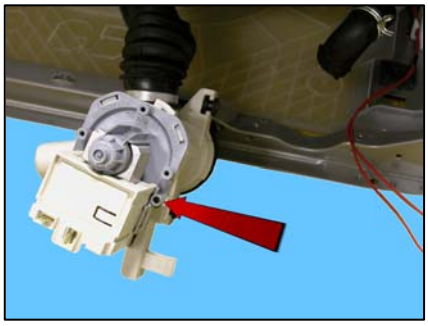
Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Unfasten the screws securing the door safety interlock (see related paragraph).
Remove the front panel (see relevant paragraph).
Loosen the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



11.4.6 Drain pump



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



If the lock catch securing the pump to the filter body breaks.

Secure the pump by screwing a screw in the slot shown by the arrow.

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

11.4.7 Welded tub assembly

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

11.4.8 Tub suspension springs

- Left spring

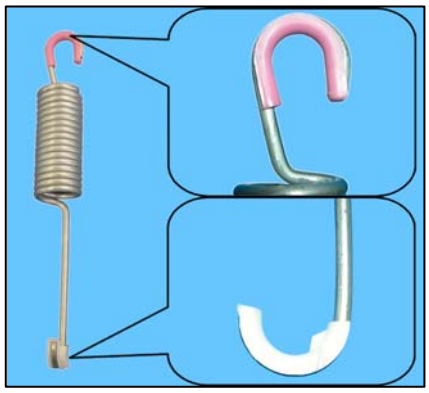
Attach the spring as shown in the figure: the shortest leg faces towards the side, whereas the longest leg faces towards the welded tub.

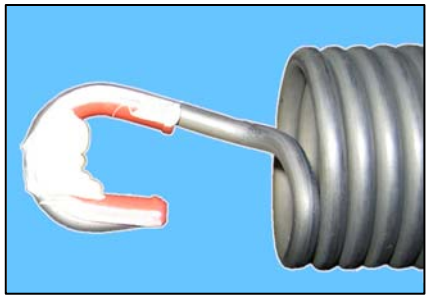
- Right spring

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.
Pay attention to the differences between the bushings (see enlarged details).
Spare bushings are available, under the following codes:

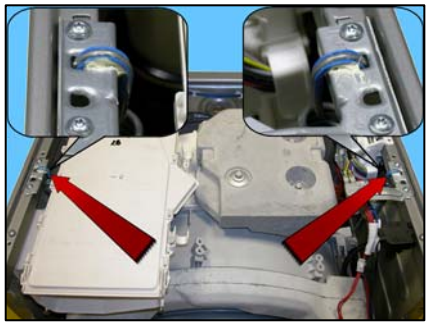
Upper bushing Code 405 50 62-51/9
Lower bushing Code 405 50 62-52/7





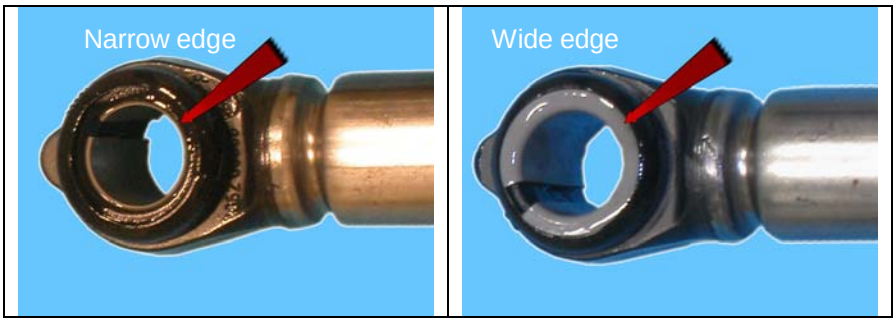
Apply some grease on either end of the spring. Use grease Code 5026 24 16-00/6

Position in which the springs are hooked to the sides.



11.5 Shock absorber pin

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



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

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

11.6 Accessing the rear part

11.6.1 Back panel

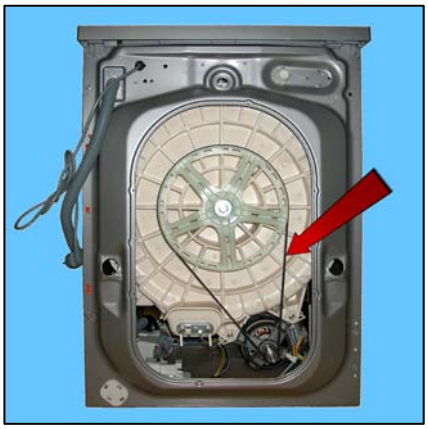
Loosen the screws that fix it to the cabinet.

11.7 From the back panel, you can access

1. Belt
2. Plastic pulley
3. Inverter
4. Motor
5. Heating element
6. Aqua control
7. Shock absorber

11.7.1 Belt

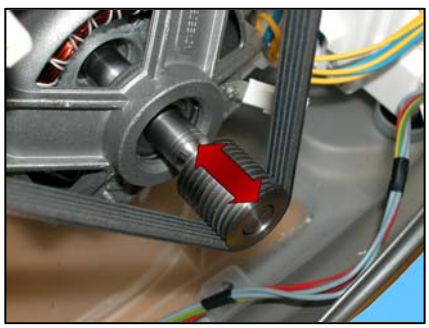
Remove the back panel (see relevant chapter).
Take the belt, turning the pulley, and remove it.



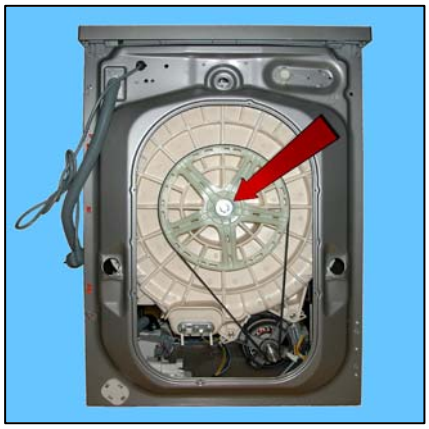
When reassembling:
Position the belt and align it with the centre of the pulley (∅ 273mm) as shown in the figure.

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.



11.7.2 Plastic pulley



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

Tighten the screw at a torque of 60 Nm.

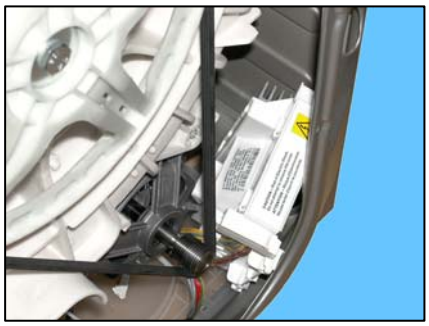
11.7.3 Inverter

Remove the back panel (see relevant chapter).

Loosen the two screws that fix it to the cabinet.

Disconnect the connector from the terminal board and the earth connection from the motor.

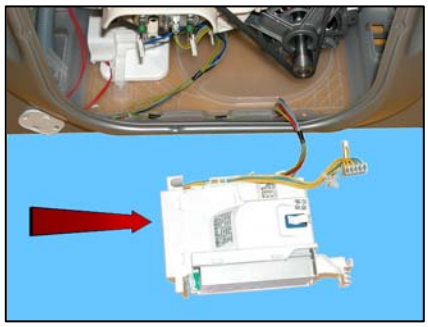
Move the inverter towards the inside of the appliance and lift it up.



Turn it and position it as shown in the figure.

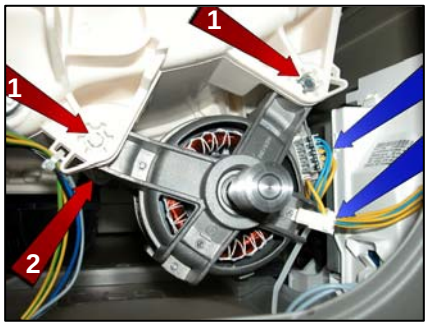
Push the washing unit towards the inside and remove the inverter.

Open the wiring protection and disconnect the connectors.



When repositioning the inverter in its seat, pay attention that the hook is inserted in its position in the crosspiece.

11.7.4 Motor



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

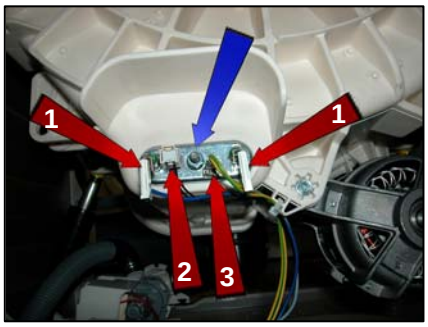
Disconnect the connectors: for the power supply and earthing (blue arrows)
Loosen the two front fastening screws (1) and the rear ones (2) (red arrows).

When reassembling, restore the connections.

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

Tighten the screws at a torque of 5 Nm.

11.7.5 Heating element

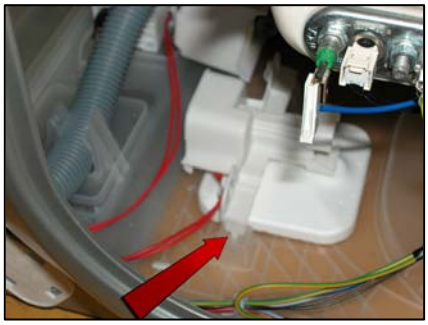


Remove the back panel (see relevant chapter).

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

Tighten the nut at a torque of 4 Nm.

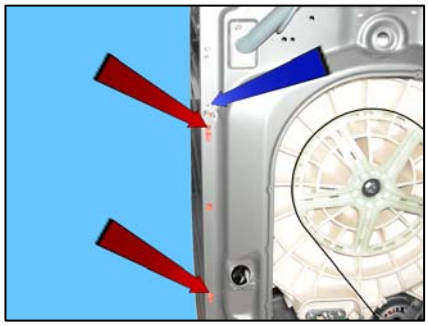
11.7.6 Aqua control



Remove the back panel (see relevant chapter).

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

11.7.7 Drain pipe/cabling support

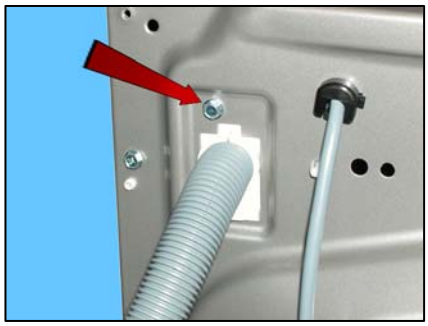


When fixing the drain pipe/cabling support make sure that the two stops (indicated by the red arrows) fit into their housings, locking the support to the unit.

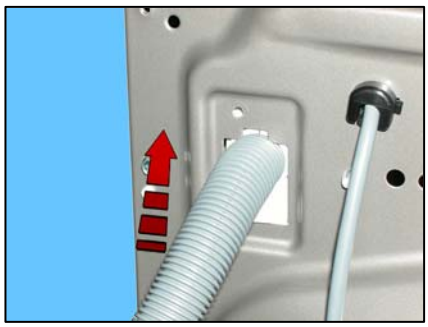
If the fixing is not stable and there is a risk of it coming out of its position, fasten the support to the unit with a screw (3.5x6.5 mm) screwed into the hole indicated by the blue arrow.

11.7.8 Drain pipe fastener

Loosen the screw that secures it to the cabinet.

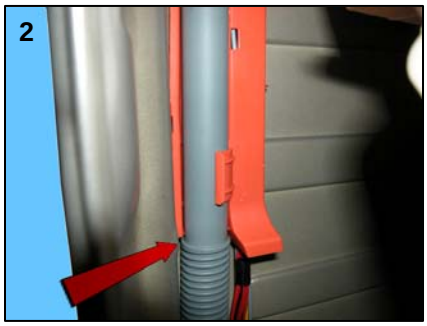


Push it towards the inside while lifting it.



11.7.9 Main drain pipe

Arrange the drain pipe as shown in the figures.



11.7.10 Power supply cable clamp

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

Revision	Date	Description	Author	Approved by:
00	01/2012	Document creation	DMM	XX – 0X/201X