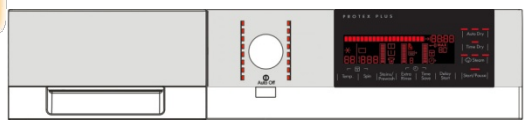
Electrolux

SERVICE MANUAL

WASHING

SERIES 9



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Technical Support

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Washer-dryer with heat pump HP

electronic control

EWX11831

EAX14

Technical and functional characteristics

NEW COLLECTION

SERIES 9

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 appliances with information regarding washer-dryers fitted with the EWX/11831/EAX14 electronic control system.

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

The current electronic appliances manufactured (EWX/11831/EAX14 platform) use a heating element with thermal fuses (inside its branches) for safety, which interrupt in case of temperature overload caused by the water level dropping below the minimum level permitted.
The incorporated NTC probe contacts have a 2.5 mm pitch.

The manual deals with the following topics:

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

Low consumption mode

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

“Stand-Off” mode

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

“Auto-off” mode

If, after 5 minutes, during the programme selecting phase or after the end of the cycle, the appliance receives no further instructions, it is automatically turned off (for energy savings in conformity with the standards on energy consumption).
All the settings are stored so that when the appliance is turned back on, the programme is ready or if the auto-off mode was triggered after the end of the cycle, the user can see that the cycle ended normally, and can restart it if necessary.

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

“Zero Watt” mode

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

a. When you press the ON/OFF button to turn off the appliance, the Zero Watt circuit is triggered and cuts off the supply voltage after a few seconds, just long enough to secure the washing machine (motor off, door locked, etc…), the cycle and any options selected are reset, so that the next time the appliance is turned on, it is ready to perform the programme.
   (To open the door, you will have to wait one or two minutes for the door safety lock to be released).

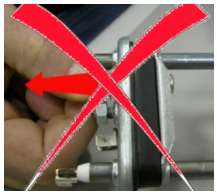
b. If, after 5 minutes, during the programme selecting phase or after the end of the cycle, the appliance receives no further instructions, it is automatically turned off and the Zero Watt circuit which cuts off the supply voltage is triggered (for energy savings in conformity with the standards on energy consumption).
   All the settings are stored so that when the appliance is turned back on, the programme is ready or if the auto-off mode was triggered after the end of the cycle, the user can see that the cycle ended normally, and can restart it if necessary.

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

2 WARNINGS

- **Any work on electrical appliances must only be carried out by qualified personnel.**
- **Before carrying out work on the appliance, use suitable instruments to check that the power supply system in the house is fully efficient. For example: refer to the indications provided/illustrated in the <<metratester>> course at the address (http://electrolux.edvantage.net) on the Electrolux Learning Gateway portal.**

  On completing operations, check that the appliance has been restored to the same state of safety as when it came off the assembly line.
- **If the circuit board has to be handled/replaced, use the ESD kit (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.**
- **Make resistance measurements, rather than direct voltage and current measurements.**
- **Warning the sensors located on the display board could be at a potential of 220 Volts.**
- **When replacing the heating element, replace it with one that has the same characteristics (2 thermal fuses) in order not to compromise the safety of the appliance. NEVER remove/switch the NTC sensors between heating elements.**



- **Always empty the appliance of all the water before laying it on its side (see the relevant paragraph).**
- **Never place the appliance on its right side (electronic control system side): some of the water in the detergent dispenser could leak onto the electrical/electronic components and cause these to burn.**
- **When replacing components, please refer to the code shown in the list of spare parts relating to the appliance.**
- **Do not place any kind of container under the appliance to catch any drips of water.**
- **The appliance must be handled in a vertical position, and it must be switched on 6 hours after installation.**

3 SERIES 9

3.1 General characteristics

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

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

The EWX11831/EAX14 control system consists of:

- A main board
- A display board
- A motor control
- A weight sensor (where featured).

↳ 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 bottom right of the appliance (seen from the rear), it receives commands from the display board, powers the electrical components and it communicates with the following boards: motor control (Inverter) and with the WD-HP module.

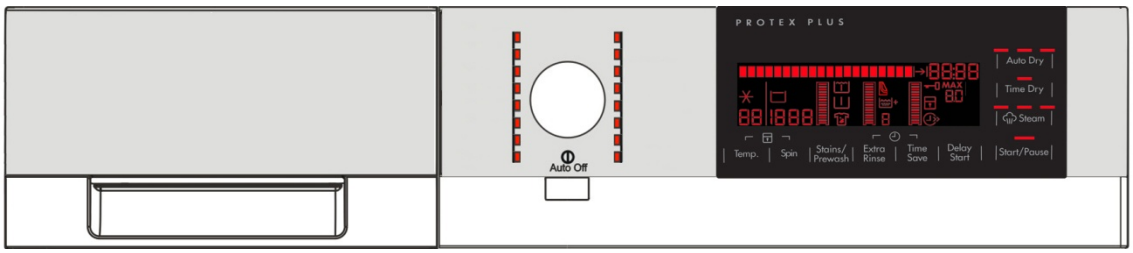
3.1.1 General characteristics

No. buttons	▪ max 1 (ON/OFF)
No. LEDs	▪ maximum 24 (programmes+options+start/pause)
Programme selector	▪ 16 positions (incorporated in the circuit board)
Serial port	▪ DAAS-EAP communication protocol up to 115,200 baud
Power supply voltage	▪ 220/240 V ▪ 50/60 Hz (configurable)
Washing type	▪ Traditional with “Eco-ball” sphere
Rinsing system	▪ Traditional with “Eco-ball” sphere
Motor	▪ Two-pole asynchronous (three-phase) ▪ Triple-phase synchronous motor with permanent magnets
Spin speed	▪ 400–1600 rpm
Anti-unbalancing system	▪ AGS
Cold water fill	▪ 1 solenoid valve with 1 inlet – 2 outlets
Detergent dispenser	▪ 4 compartments: prewash, wash, stain remover and conditioners
Control of water level in the tub	▪ Electronic/analogue pressure switch
Door safety interlock	▪ Instantaneous
Heating element heat output, washing	▪ 1950 W with thermal fuses incorporated
Temperature control, washing	▪ NTC probe incorporated in the heating element
Drying unit	▪ Heat pump
Compressor	▪ 300–400 W ▪ 2950 rpm
Start-up capacitor	▪ 10 µF
Fan	▪ 230 V ▪ 50 Hz ▪ 4000 rpm
Temperature control, drying	▪ NTC
Humidity level control	▪ NTC
Buzzer	▪ Traditional incorporated in the PCB
Sensors	▪ Water fill gauge (2–12 l/m flowmeter) ▪ Water control

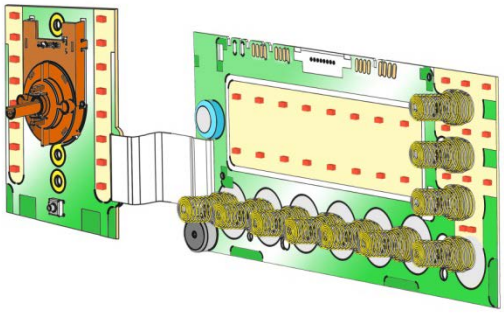
3.2 Control panel

3.2.1 Styling

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

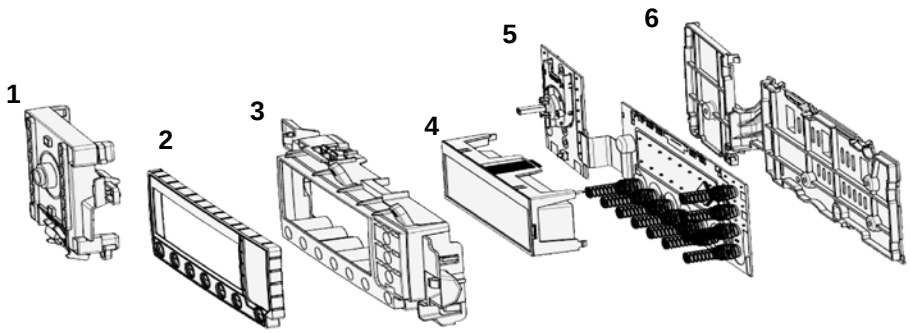


- Positioning of LEDs and buttons

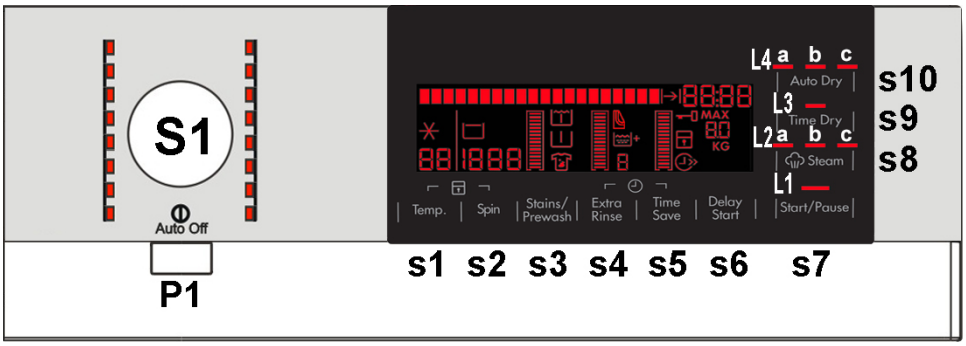


- Display board assembly, exploded view

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



3.2.1.1 Control panel configuration



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

3.2.1.2 Initial Start up

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

3.2.1.2.1 Set Language

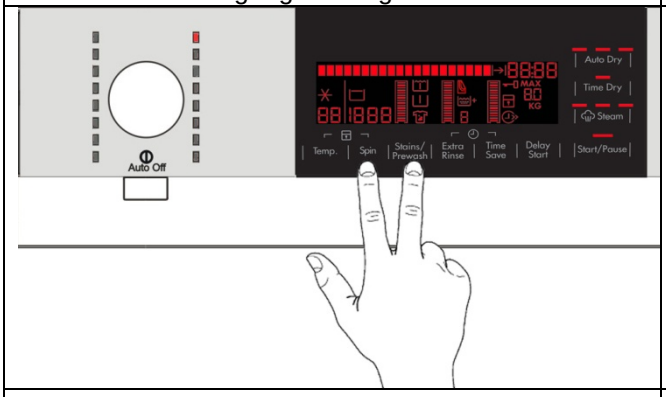
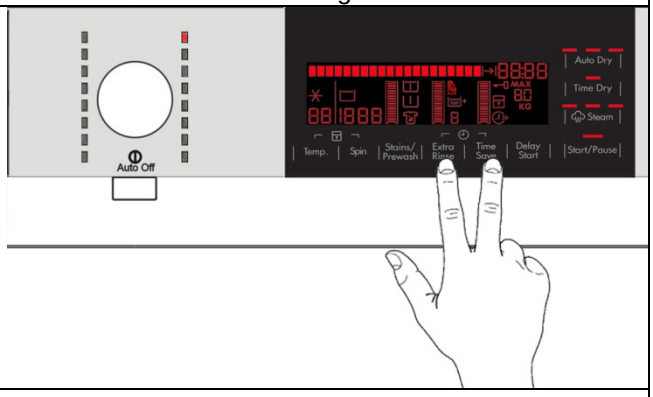
The first time the appliance is turned on or after a diagnostic cycle, the text line prompts you to turn the selector to choose your language (the language displayed is the one of the silk screen printed control panel) for approximately 3 seconds. Once you have chosen your language, after another 3 seconds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

3.2.1.2.2 Setting the time of day

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

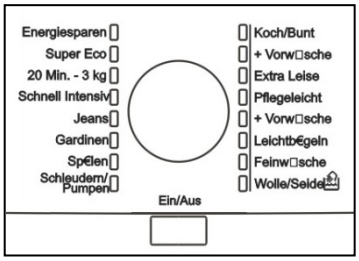
The digits relating to the minutes start to flash. Again, turn the selector dial to adjust them too and confirm with the START/PAUSE sensor. Now the time of day has also been set.

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

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

3.2.1.3 Programme selector (S1)

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



3.2.1.4 Programme configuration

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

Types of fabric	Cotton/linen, Synthetic fabrics, Delicates, Wool, Hand-wash, Shoes, Jeans, Duvet, Silk.
Special programmes	Soak, Miniprogramme, Easy-Iron, Conditioner, Rinses, Delicate rinses, Drain, Delicate spin, Spin, Drying.
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, Delay Start, Dryness.

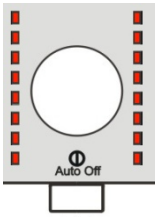
3.2.1.5 Pushbuttons – LEDs and LCD

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

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

– 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.

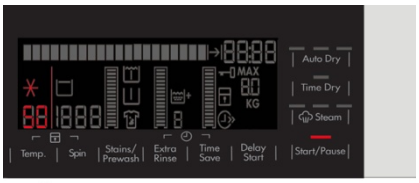
The operation of the ON/OFF depends on the configuration of the main circuit board. It can cut the appliance off from the electricity mains completely (0 Watt circuit) or set the appliance to low energy consumption mode (without 0 Watt circuit) in which case you will need to take the plug out of the socket to cut off the electricity supply completely.
Unlike the other versions, in the SERIES 9, after pressing the ON/OFF button the LCD displays the time of day (for two seconds to allow the user to check it and if necessary update it) followed by the programme information.



P1

- **Sensor no. 1**: TEMPERATURE

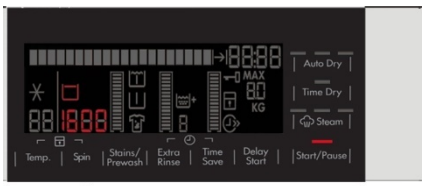
It is related to the part of the LCD display (see figure) where the temperature of the washing cycle is shown.
The initial temperature displayed is that set for the chosen programme.
Touch the sensor with your finger to lower it. Once you have reached the lowest one, the selection starts off again from the highest temperature.
The cold cycle is represented by the cold symbol  and by two dashes  to replace the Digits.
The temperatures available (displayed in °C) are:
95°C, 60°C, 50°C, 40°C, 30°C, 20°C, cold cycle.
Concurrently with the display of the temperature in degrees, the name of the selected function appears at the top of the display in the text line.



s1

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

It is related to the part of the LCD display (see figure) where the spin speed of the washing cycle is shown.
The initial speed shown on the LCD display is that configured for the selected programme.
Touch the sensor with your finger to lower the speed. Once the lowest speed has been reached, the next selection is “Rinse Hold” and the related symbol  lights up (where compatible with the chosen programme), which is also lit during the “Extra silent” programme.
The next selection will be the speed configured for the programme.
The spin speeds are:
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 “ **- - -** ”.
Concurrently with the display of the spin speed in rpm, the name of the selected function appears at the top of the display (in the text line).

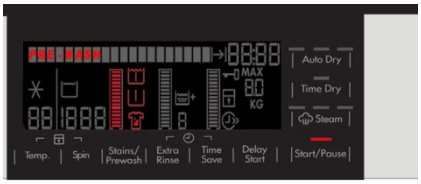


s2

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

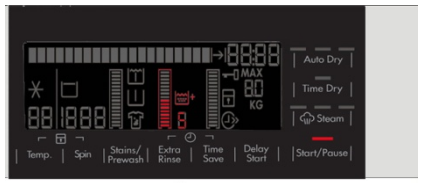
- **Sensor no. 3**: OPTION
  It is related to the part of the LCD display (see figure) where a graphic bar and the symbols relating to the options are displayed, depending on the chosen programme.
  Touch the sensor with a finger and the graphic bar starts to light up.
  The symbol for Stains is turned on at the same time.
  As you continue, the Prewash symbol lights up.
  The selection order is as follows:
  1. Stains
  2. Pre-wash
  3. Stains + Prewash
  4. Stains + Soak
  5. No Option

  It may happen that it is not possible to select the option(s) where the stains item is displayed, due to the washing temperature being too low, and consequently the options are skipped.
  Concurrently to the displaying of the symbol for the option, as the graphic bar is gradually illuminated, the name of the chosen option is displayed in the text line in the top left.



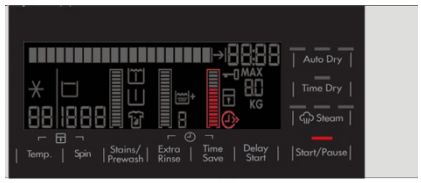
s3

- **Sensor no. 4**: EXTRA RINSE
  It is related to the part of the LCD display (see figure) showing: the graphic bar, a digit and the symbol for the “Extra rinse” option.
  Touch the sensor with your finger and the graphic bar begins to light up. Concurrently, the symbol lights up and you can choose the number of rinses to add to the programme, which are displayed by the digit (depending on the programme).
  Concurrently to the displaying of the symbol for the option, as the graphic bar is gradually illuminated, the name of the option is displayed in the text line in the top left.



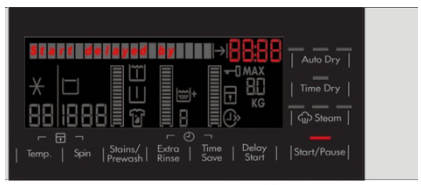
s4

- **Sensor no. 5**: OPTION
  It is related to the part of the LCD display (see figure) showing: the graphic bar and the “Time save” option.
  Touch the sensor with your finger, half or all of the graduated scale may light up, depending on the configuration and the related symbol also lights simultaneously.
  Touch once
  – and the chosen option is “Daily”.
  Touch again and the graduated scale lights up completely
  – the chosen option is “Super Quick”.
  Concurrently to the displaying of the symbol for the option, as the graphic bar is gradually illuminated, the name of the chosen option is displayed in the text line in the top left.

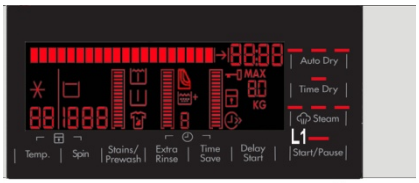
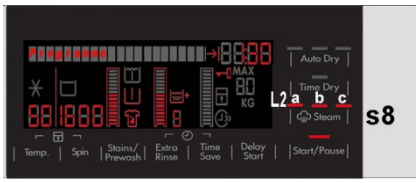
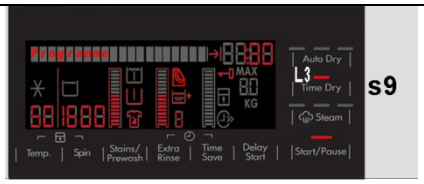
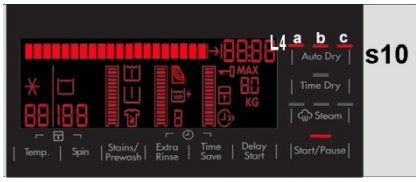


s5

- **Sensor no. 6**: DELAYED START
  It is related to the part of the LCD display (see figure) showing: the four digits and the text bar.
  Touch the sensor with your finger. The LCD display is updated according to the status of the door: if the door is open, the words “Start delayed by” are displayed and the delay time is displayed in the digits for approximately 5 seconds, whereas if the door is closed, the words “Programme ending at” are displayed along with the programme end time.

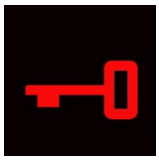
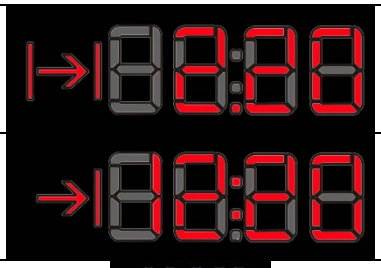


s6

During the last hour, the time decreases minute by minute. To cancel the delayed start time, after the cycle has started, pause the washing machine using the related sensor (7) and cancel the option.	
• **Sensor no. 7**: START/PAUSE Touch the sensor with your finger to START or PAUSE the appliance. It is related to LED (L1), which flashes when the appliance is on pause, whereas it is lit continuously when the appliance is performing a washing cycle.	 **s7**
• **Sensor no. 8**: STEAM (where featured) Touch this sensor with your finger in sequence to select among the three steam intensity levels shown by the lighting of LEDs L2a/L2b/L2c. The text line displays the status of the option.	 **s8**
• **Sensor no. 9**: TIME-CONTROLLED DRYING	 **s9**
• **Sensor no. 10**: Automatic DRYING Touch this sensor with your finger in sequence to select among the three drying intensity levels shown by the lighting of LEDs L4a/L4b/L4c. The text line displays the status of the option.	 **s10**

- **LCD**

The information described below also appears on the LCD:

• **Padlock**: The icon lights up when the “child lock” is on. To indicate that all the sensors are disabled to prevent children from modifying, starting or pausing the cycle. A sensor combination needs to be pressed to activate/deactivate it. It may be silk-screen printed on the control panel or described in the instruction manual.	
• **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 (evident with PTC delaying devices, which need one or two minutes to open).	
• **Cycle time**: It lights up to indicate the cycle time.	
• **Time left:** It lights up to indicate the time left until the end of the cycle.	
• **Weight:** This lights up when the door is opened, to inform the end user of the maximum laundry load to place inside the drum.	
• **Delayed start** Selected on the related sensor. After the START/PAUSE sensor has been touched, 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... ☞ 20hrs. ☞ 0hrs.). During the last 2 hours, it decreases by 30 mins at a time. Touch the sensor in sequence to increase the delay by 30’ up to 10 hours, whereas from 10 hours to 20 hours, the increase is of 1 (one) hour every time the button is pressed. During the programme selection phase, a delayed start can be selected, from 30’ to 20 hours (30’ ☞ 60’ ☞ 90’ ☞ 10h ☞ 11h… ☞ 20h ☞ 0h) and the time is shown on the LCD display; during the last one, the time decreases one minute at a time. To cancel the delayed start time, after the cycle has started, pause the washing machine using the related button and cancel the option.	
• **Text line** Information for the end user is displayed in the text line, including: Programme name……. If an incorrect selection is made, the display will show “Not compatible”.	

• **End of cycle** **End of the programme** is indicated by **a permanently lit zero** (when the door can be opened). • **Appliance stopping with water in the tub**, at the end of Programmes with the RINSE HOLD option, this is displayed by **a permanently lit zero.** The LED indicating the door remains on, while the LED for the START/PAUSE button flashes. The washing machine continues to operate, rotating the drum once every 2 minutes.	
• **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).	
• **Drying filter** This icon: ↳ stays on permanently at the end of the drying cycle, to remind you to clean the main filter. ↳ flashes when the main filter is not inserted properly. ↳ flashes every five drying cycles to remind the user to clean both filters.	

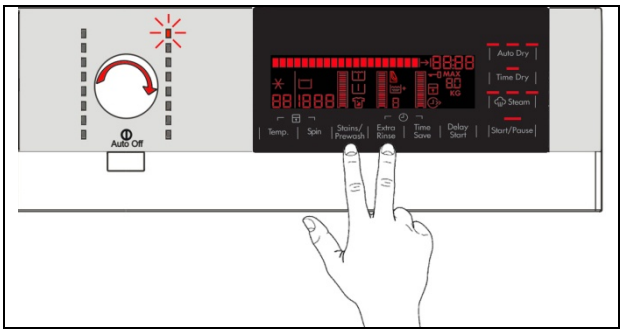
3.2.1.6 Buzzer

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

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

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

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



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

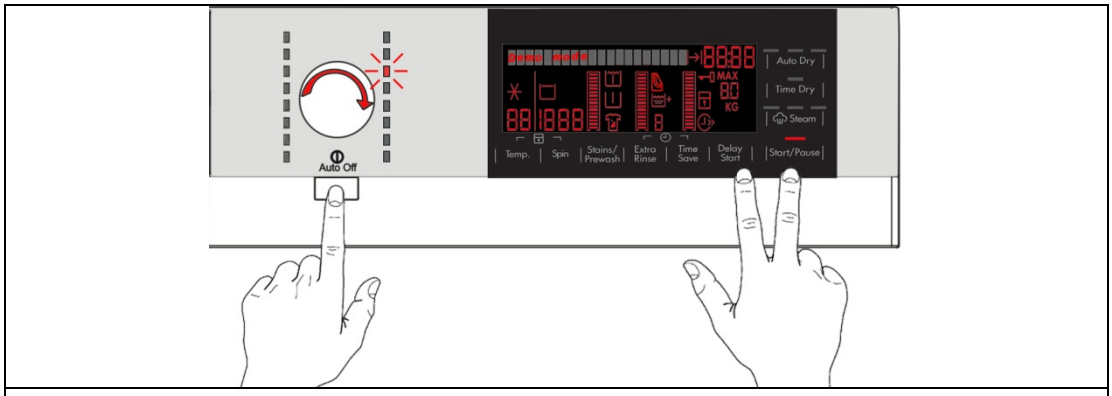
4 DEMO MODE

A special cycle is designed to demonstrate the operation of these appliances in shops, without connecting them to the water mains. In this way it is possible to select one of the programmes and, once the start touch sensor (START/PAUSE) has been touched, 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.

4.1 Access to DEMO settings

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



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

1. Turn the appliance on at the ON/OFF switch.
2. Turn the selector dial until the third LED in the right-hand row is on.
3. Simultaneously press the **START/PAUSE** touch sensor and the nearest **option** touch sensor (as shown in the figure).
4. Hold down the touch sensors (for approximately three to five seconds) until “Demo” flashes for a short time.

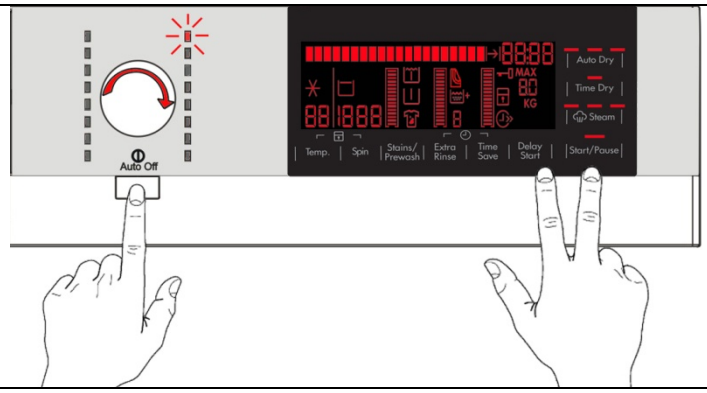
4.2 Exiting DEMO mode

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

5 DIAGNOSTICS SYSTEM

5.1 Accessing diagnostics

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



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

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

In the first position, the operation of the touch sensors, 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.) **and the memories with customised programmes are also deleted**.

5.2 Quitting the diagnostics system

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

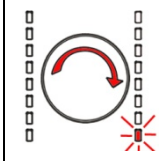
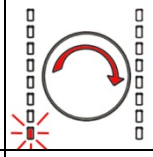
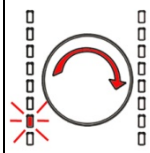
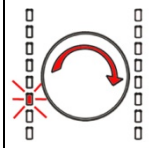
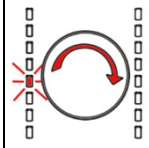
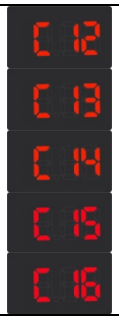
5.3 Phases of the diagnostics test

Warning:

Appliances produced during/after serial number 431xxxxxx are designed to accommodate the HP drying circuit efficiency control, in the tenth position of the diagnostics cycle (see description on page 58).
For appliances produced before then, the software will need to be updated to activate this control.

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

Selector position		Components activated	Working conditions	Function tested	LCD screen
1		- The LEDs light up in sequence, the symbols on the LCD display light up in in groups and the backlighting comes on, - When a button/sensor is pressed, the group of icons on the LCD display or the corresponding LED lights up and the buzzer sounds	Always active	User interface functions	
2		- Door safety interlock - Wash solenoid valve	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to wash compartment	 Water level in the tub (mm)
3		- Door safety interlock - Pre-wash solenoid valve	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to pre-wash compartment	 Water level in the tub (mm)
4		- 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 (hot water, if present)	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to Fourth solenoid valve compartment	 Water level in the tub is displayed (mm)
7		- Door safety interlock - Wash solenoid, if the water in the tub is not enough to cover the heating element - Heating element - Weight sensor (if present, an extra litre of water is loaded) - Recirculation pump	Door closed Water level above the heating element. Maximum time 10 mins up to 90°C. **(*)**	Warming up Circulation	 Temperature in °C measured using the NTC probe

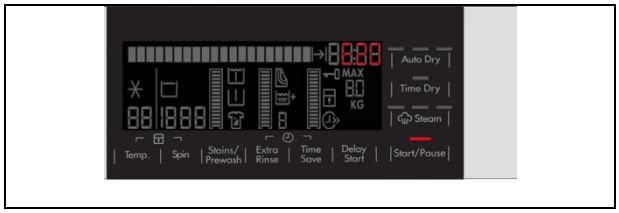
8		- Door safety interlock - Wash solenoid, if the water in the tub is not enough to cover the heating element - Motor (55 rpm clockwise, 55 rpm anti-clockwise, 250 rpm pulse)	Door closed Water level above the heating element	Check for leaks from the tub	 Drum speed in rpm/10
9		- Door safety interlock - Drainage pump - Motor up to 650 rpm then at maximum spin speed (**)	Door closed Water level lower than anti-boiling level for spinning	Drain, calibration of analogue pressure switch and spin	 Drum speed in rpm/10
10		- Door safety interlock - Drainage pump - Compressor Fan* - Power fan - Compressor - *Operates at the beginning for 10 seconds only	Door closed Water level below anti-boiling level Maximum time 20 minutes.	Drying	 Displays the air temperature alternating detection by the three NTC probes (input output and capillary)
11		- Reading/Deleting the last alarm	-----	----	
12 – 16		- The LEDs light up in sequence, the symbols on the LCD display light up in in groups and the backlighting comes on, - When a button/sensor is pressed, the group of icons on the LCD display or the corresponding LED lights up and the buzzer sounds	Always active	User interface functions	

(*) In most cases, this time is sufficient to check the heating. However, the time can be increased by repeating the phase without draining the water: pass for a moment to a different phase of the diagnostic cycle and then back to the heating control phase (if the temperature is higher than 80°C, heating does not take place).
(**) The check at the maximum speed occurs without control of the A.G.S. and no garments must be inside the appliance.

6 ALARMS

6.1 Displaying user alarms

When a problem occurs in the appliance and a “WARNING” or “ALARM” is triggered, this is shown in the text line. This information ceases to be displayed when the problem is repaired/solved. The buzzer then emits a sound for 5 minutes. This does not occur for alarm EH0.



The alarms displayed to the user are listed below:

- *Check the tap*
- *Check the drain filter*
- *Check the door*
- Excessive detergent

The alarms listed below:

- Caution: water *(Aqua Control System)*

The intervention of a service engineer is required

For the alarm on the other hand:

- *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 the condition that:

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

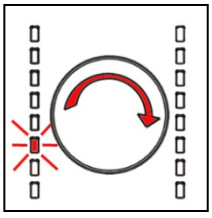
Certain alarm conditions require a drain phase to be performed before the door can be opened for safety reasons:

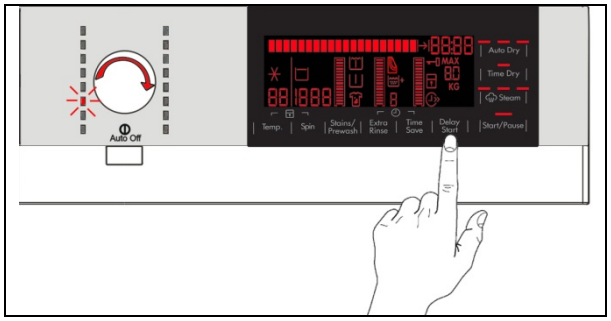
- Cooling water fill if the temperature is higher than 65°C.
- Drain until the analogue pressure switch is on empty, during a max. 3-minute interval.

6.2 Reading the alarms

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

- Enter the diagnostic mode (para. 5.1).
- 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, touch the sensor to the left of the START/PAUSE sensor in sequence (as shown in the figure).
- To return to the last alarm, touch the START/PAUSE sensor.





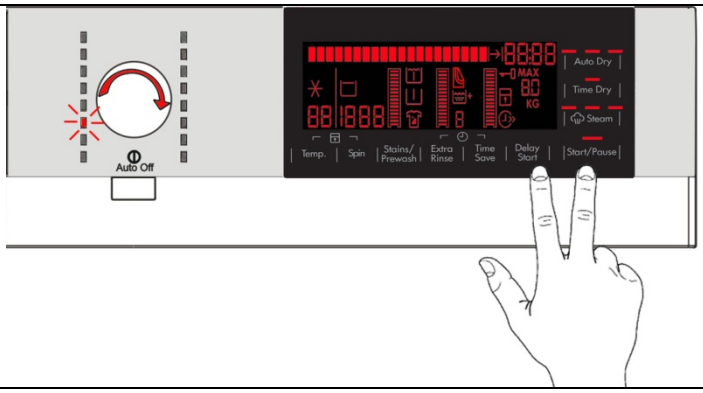
6.3 Rapid reading of alarms

The last alarm can even be displayed if the selector is not in the tenth diagnostic position or the machine is in normal operation (e.g. while a washing programme is in progress):
→ Touch the **START/PAUSE** touch sensor and the nearest **option touch sensor** simultaneously (as if you were entering DIAGNOSTIC mode) and hold for at least 2 seconds: the LCD display shows the last alarm.
→ The alarm will continue to be displayed until a button is pressed.
→ While the alarm is displayed the machine continues to carry out the cycle, or if it is in the selection phase any options that have already been selected will remain in the memory.

6.4 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



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. Simultaneously press the **START/PAUSE** touch sensor and the nearest **option touch sensor** (as shown in the figure).
4. Keep your fingers on the sensors until the LCD display shows “E00” (at least 5 seconds).

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

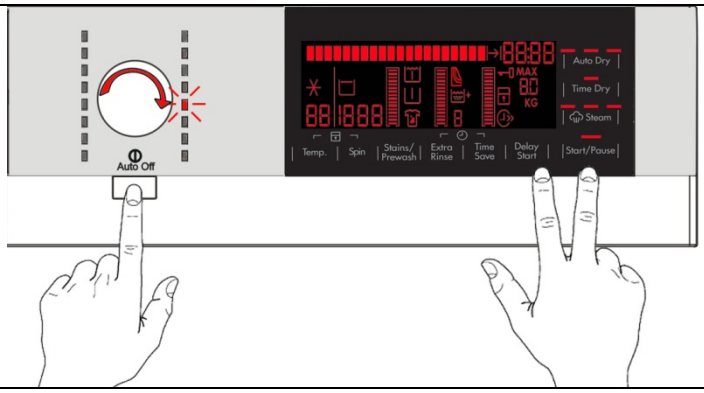
7 OPERATING TIME COUNTER

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)

7.1 Reading the operating time

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



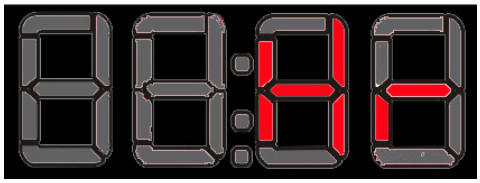
Do not start the procedure with the buttons in the combination pressed

1. Turn the appliance on at the ON/OFF switch.
2. Turn the selector in a clockwise direction until the **fifth** LED in the right hand row lights up.
3. Simultaneously press the **START/PAUSE** touch sensor and the nearest **option touch sensor** (as shown in the figure).
4. Hold your fingers on the touch sensors until the hours of operation appear on the display (at least 5 seconds).

7.2 Display of total operating time

The time is displayed as follows:

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

	Phase 1	Phase 2
	For two seconds It displays: Hr	For two seconds, the following digits are displayed: thousands (**6**) hundreds (**5**) tens (**5**) units (**0**)
		

The cycle is repeated at the end of the phase.
To return to normal mode, either: switch the appliance off or press a button or turn the selector knob.

8 OPTIONS

8.1 Compatibility between options

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

(*) Pre-wash and Soak exclude each other.
Pre-wash+Stains and Soak+Stains are compatible with one another depending on the detergent dispenser used.

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

8.2 Description of options

- **Rinse hold**

→ During the cycle the intermediate rinses and spins are performed.
→ Stops the appliance with water in the tub before the final spin cycle.
→ Once the Rinse Hold has ended, the appliance rotates the drum every two minutes for up to a maximum of 18 hours, after which it stops.
→ To drain the water, simply press the START/PAUSE button to run the drain and spin cycles.

- **Pre-wash**

→ Adds a pre-wash phase at the start of the cycle with water heating to 30°C (or cold, if selected).
→ In 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.

- **Prewash**

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

- **Stains**

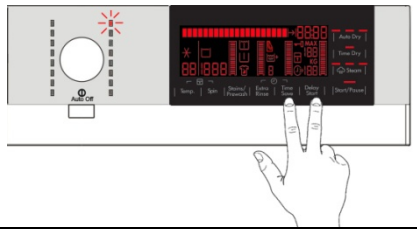
→ Adds a 5-minute motor movement phase after heating to 40°C.
→ Water flow to the pre-wash/stains compartment to introduce the special stain-removal product.
→ This option cannot be selected for WOOL and HAND WASH cycles.

- **Super rinse (SERIES 9 key combination)**

→ Adds **two** rinses in the COTTONS - SYNTHETICS - DELICATES cycles.
→ Eliminates the spin at the end of washing.

- **EXTRA rinse (SERIES 9)**

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

Appliances which do not envisage the option SUPER RINSE combined with a button can enable it through a key combination.

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 COTTONS - SYNTHETICS - DELICATES cycles by half a load.

- **Delayed start time**

→ Adds a pause before the start of the programme. The delay time is shown on the three digit display See page 15.

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

- **Automatic** drying (WASHER-DRYERS – only certain models)

→ You can choose from three different levels of automatic drying for COTTONS and one for SYNTHETIC FABRICS:

↳ Iron dry (only for cotton)
↳ Wardrobe dry (cotton and synthetic fabrics)
↳ Extra dry (only for cotton)

→ The drying time is calculated automatically by the appliance.

→ The drying phase can be performed both as automatic drying (non-stop programme), if selected together with a washing cycle, or as a separate programme.

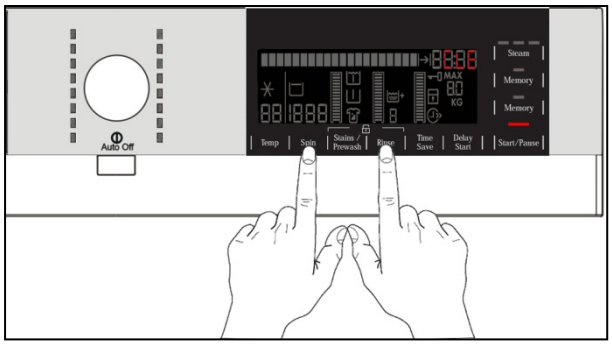
- **"Drying time"** button

→ Push this button to select from 10 to 250 minutes of drying for the COTTON cycles and from 10 to 210 minutes for the SYNTHETICS cycles, 5 minutes at a time.

→ The selected drying phase either in automatic drying or as a separate programme.

↳ **Removing fluff from the drum**

→ To remove fluff from the drum after a drying cycle, a drum cleaning cycle can be enabled by pressing a combination of keys. Select the rinse cycle by pressing the relevant key combination; the LCD screen displays "CLE" (where the wash or drying time is shown). At the end of the cleaning cycle, the LCD screen goes back to displaying the rinse cycle time.



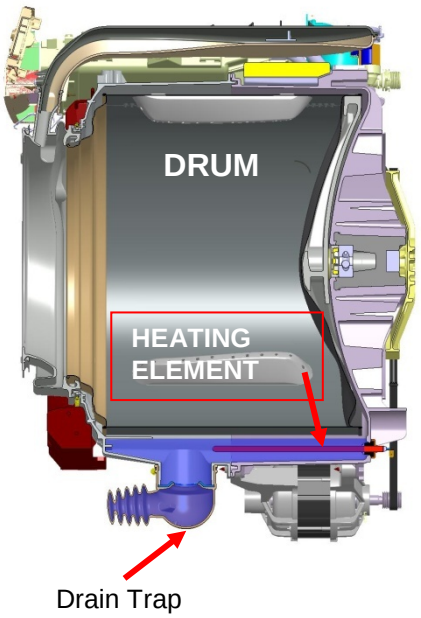
9 Generating STEAM

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

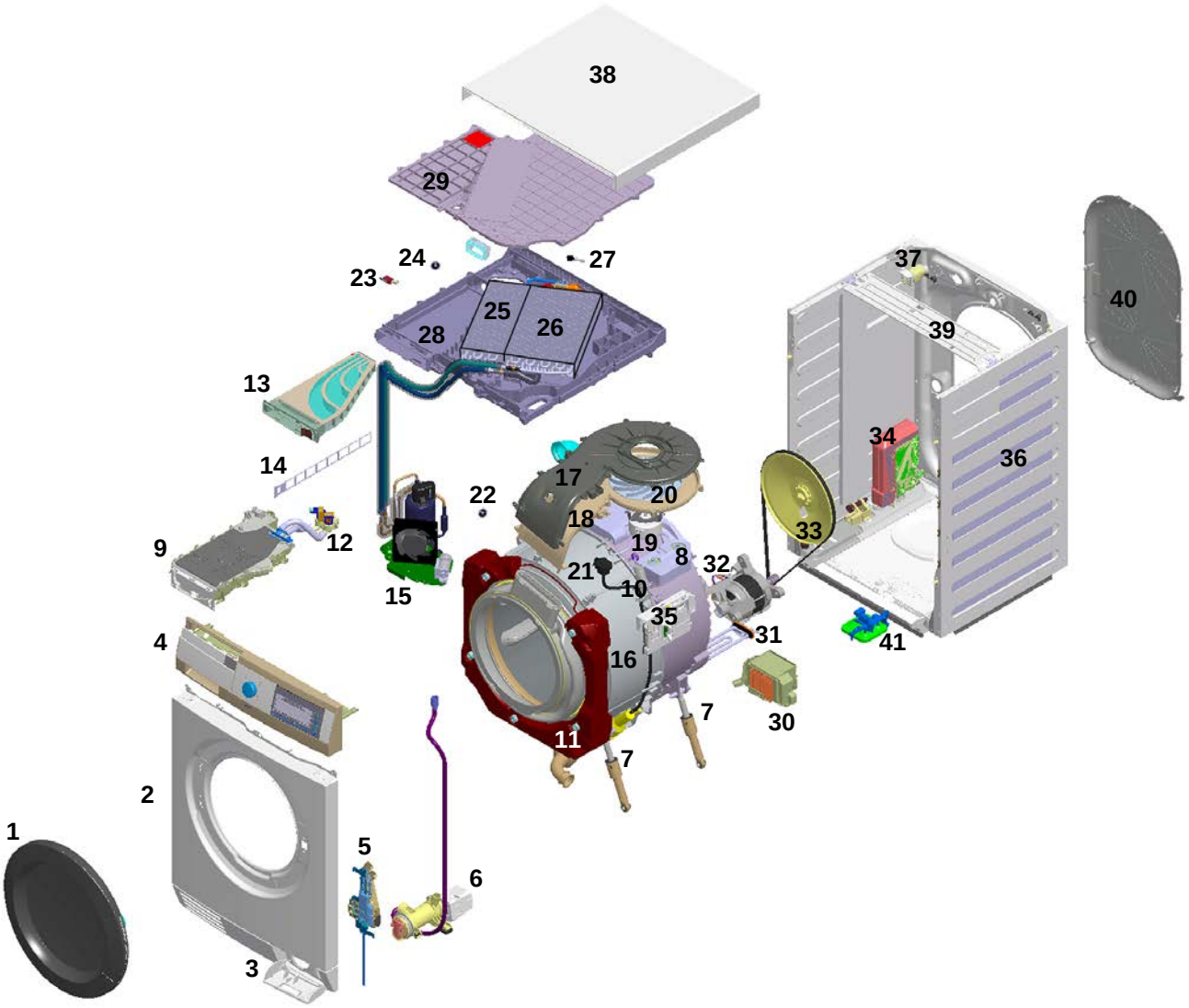
During the water filling and the movement of the drum, the laundry must not get wet.

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



10 TECHNICAL CHARACTERISTICS

10.1 Construction characteristics



1. Door	21. Analogue pressure switch
2. Front panel	22. NTC probe (drying)
3. Base board	23. Filter sensor
4. Control panel	24. NTC probe (humidity)
5. Door Lock	25. Evaporator
6. Drainage pump	26. Condenser
7. Shock absorbers	27. NTC probe (capillary)
8. Upper counterweight	28. Upper Housing Base WD-HP
9. Detergent dispenser	29. Upper Housing Cover WD-HP
10. Washing unit suspension springs	30. UIMC
11. Front counterweight	31. Washing heating element
12. Solenoid valves	32. Motor
13. Fluff filter	33. Belt and pulley
14. Internal fluff filter	34. Main electronic circuit board assembly
15. Compressor/fan assembly	35. WD-HP module
16. Washing unit	36. Back unit casing
17. Upper duct	37. Noise filter
18. Lower duct	38. Worktop
19. Fan motor	39. Crossbar
20. Fan	40. Back panel
	41. Water control

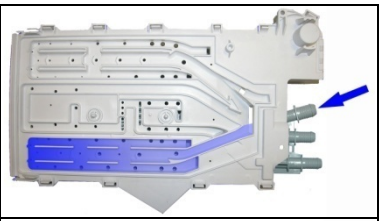
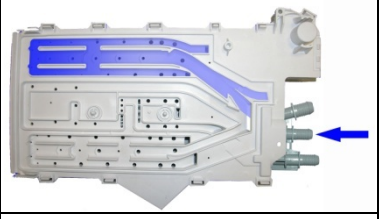
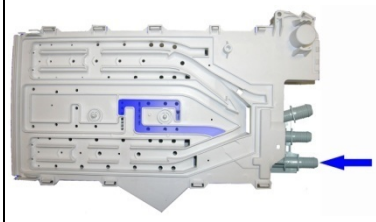
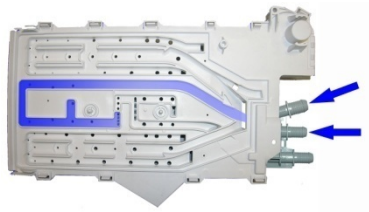
10.2 Detergent dispenser

10.2.1 Detergent dispenser with multi-way solenoid valves

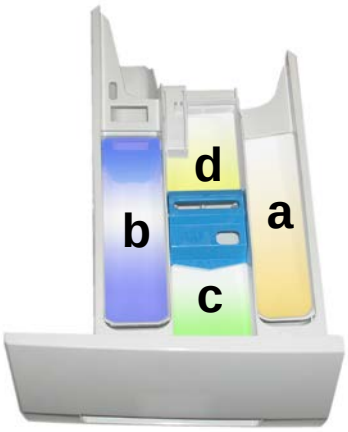
The water in the detergent dispenser is filled through a solenoid valve for cold water (with one inlet and 2 outlets);
The detergent dispenser has 4 compartments.

- Tray conveyor
- 4-way water inlet nozzle

10.2.2 Operating principle of 4-compartment conveyor

Water fill to pre-wash compartment (pre-wash solenoid) • This solution is used with the four compartment tray: the detergent in compartment “a” is loaded at the start of the pre-wash phase.	
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 activating wash compartment • In models with 4-compartment dispenser trays, the filling in tray “d” is performed by a purpose-provided solenoid valve during washing, when the water has reached 40°C. • In models with 3-compartment dispenser trays, this section is not used.	
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.	

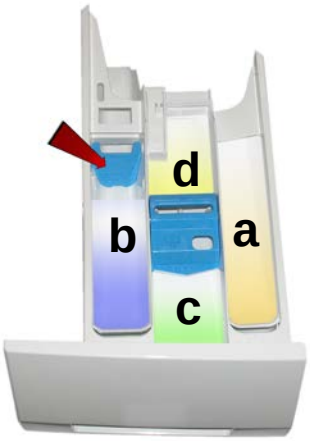
10.3 Detergent dispenser



10.3.1 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 70).

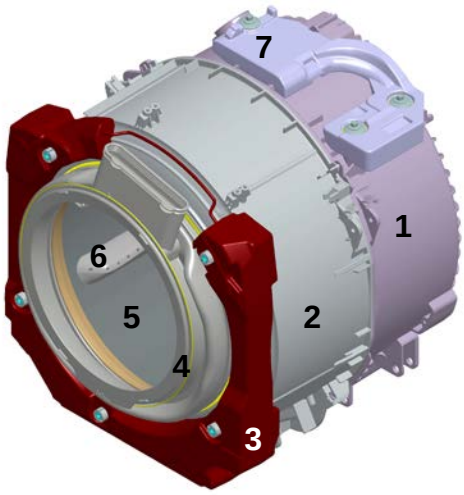
With the flap flipped down, the appliance is ready for use with liquid detergent.

For further details, read the instruction manual.

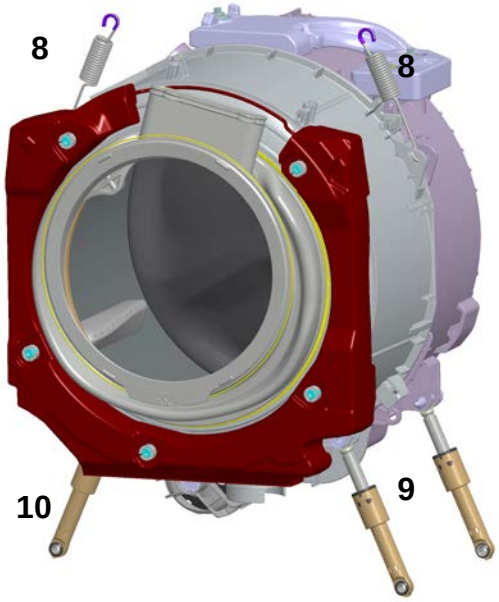
10.4 Washing unit

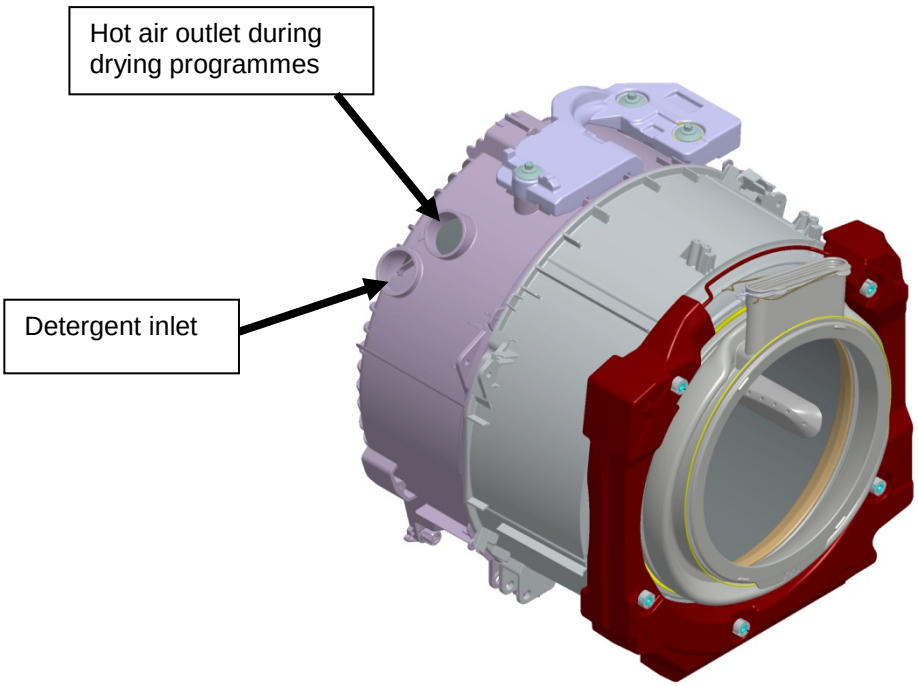
WASHING UNIT			
Type	Load capacity (cottons) Wash	Load capacity (cottons) Drying	Drum volume
	max.	max.	
G60	9 Kg	See instruction manual	66 Litres

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

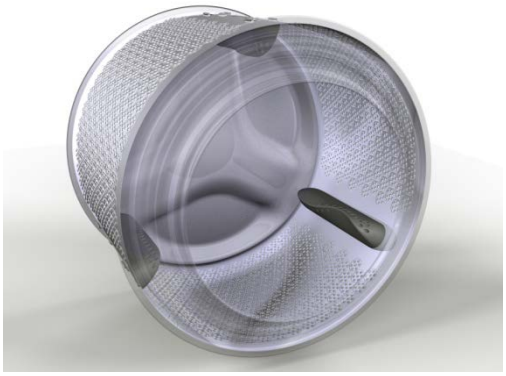


The washing unit is suspended by two coil springs (8) attached to the top crossbar, and the oscillations are dampened by three shock absorbers, two on the right (9) and one on the left (10) (looking straight at the front of the appliance).



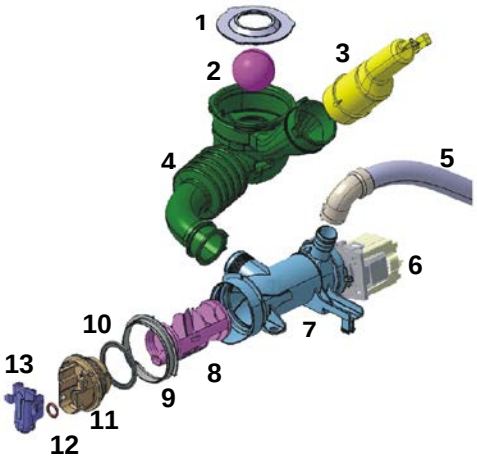


Drum with three blades inside.



10.5 Water circuit

10.5.1 OKO version drain circuit



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

10.5.2 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.

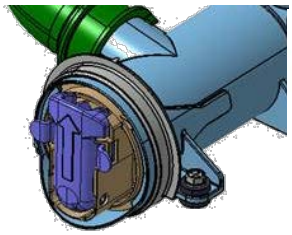


Fig. 1

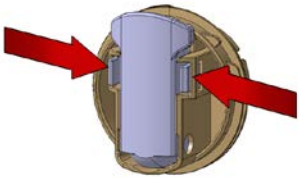


Fig. 2

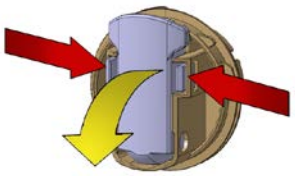


Fig. 3

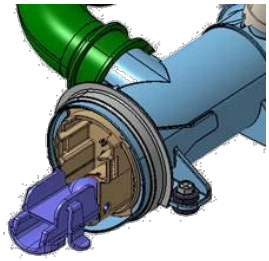
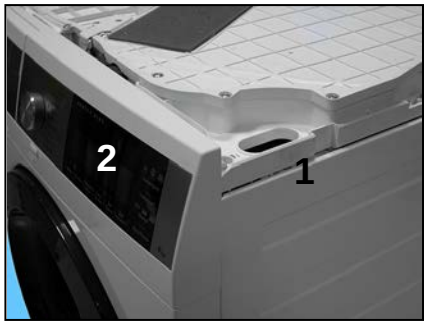


Fig. 4

11 ELECTRICAL CHARACTERISTICS

11.1 Electronic control



The electronic control is made up of:

1. Electronic WD-HP module.
2. Control/display circuit board.
3. Main circuit board (positioned at the bottom right of the appliance seen from the rear).
4. UIMC motor circuit board (positioned at the bottom left of the appliance seen from the rear).

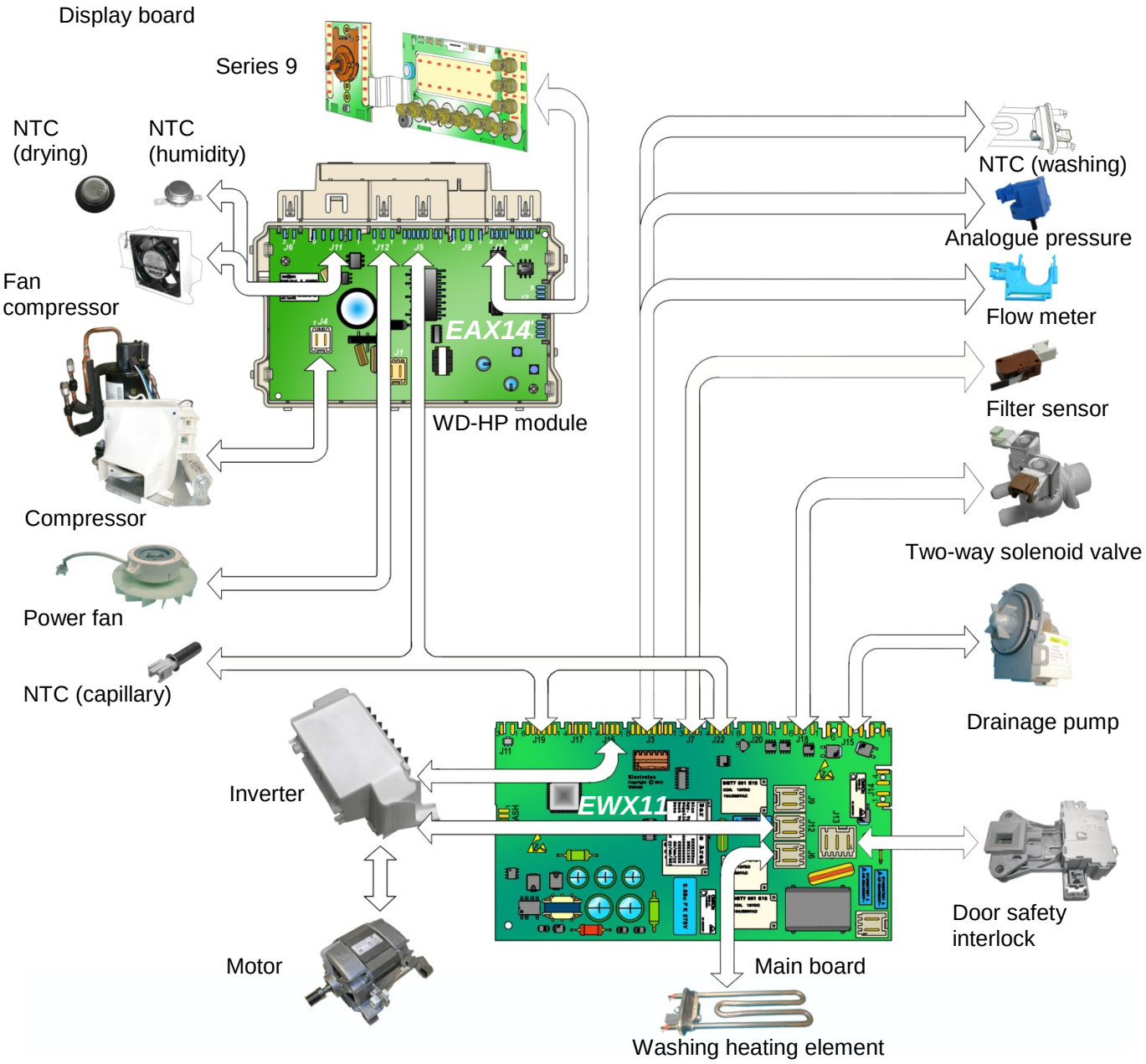
The control/display PCB contains: the selector dial, to select the washing programme, the LCD display, to display the programme information; the touch sensors to adjust the following: the washing temperature, the spin speed, to select: an option, the degree of drying and lastly the START/PAUSE touch sensor to pause or start a programme, while ON/OFF comes in the form of a 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 (solenoid valve, drain pump, heating element, door safety interlock, UIMC motor control board and the WD-HP module).
It controls the level of water via the analogue pressure switch.
It controls the status of the door.
It controls the speed of the motor.
It controls the temperature of the wash water via the NTC probe inserted in the heating element.
It controls the voltage and frequency of the power supply and ensures they are close to the rated ones.
It controls the flow of water through the solenoid valve via the flow meter.

The main board combined with the WD-HP module controls:

The laundry drying temperature via the NTC probe (positioned on the duct).
The degree of humidity of the laundry via the NTC probe (positioned in the HP module).
The temperature of the NTC probe situated in contact with the capillary.
Powers the compressor assembly and the compressor cooling fan.
Powers the power fan.
The WD/HP module conveys the data exchanged between the main board and the display board.

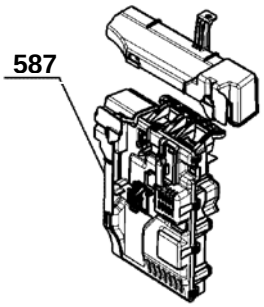
11.2 Electrical characteristics



11.3 Programming/Updating the main circuit board

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

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



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

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

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

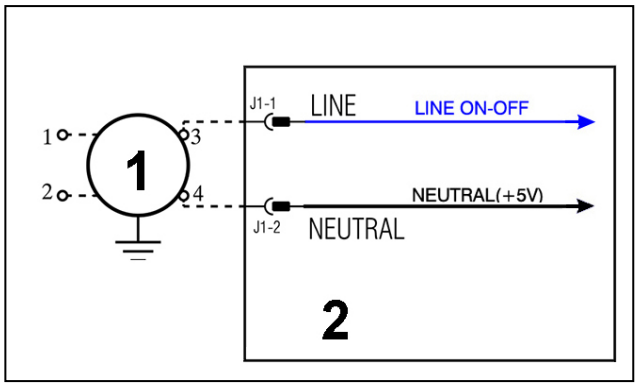
- **When replacing any of the components, please refer to the code shown in the list of spare parts relating to the appliance being repaired.**

12 ELECTRICAL COMPONENTS

12.1 Noise filter

12.1.1 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.



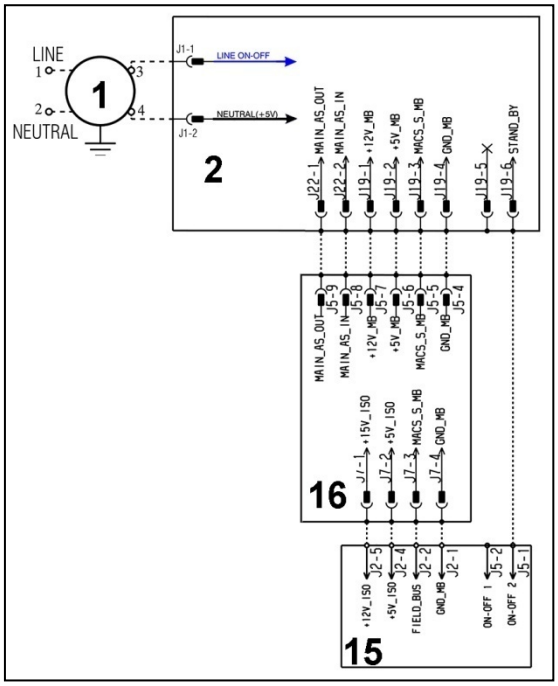
1. *Noise filter*
2. *Main electronic circuit board*

12.2 Display board

The main circuit board (2) supplies the power supply voltage to the control/display board (15).
It is possible to select the programmes by turning the selector. The options can be selected by pressing/touching the buttons and the START/PAUSE button is used to start the machine or pause it.
The buzzer - where featured - is powered by the display board.

The communication data between the main board and the display board pass via the WD-HP module (16).

The connector for programming/updating the main board is situated in the WD-HP module (16).

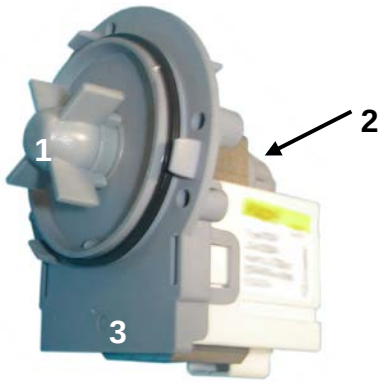


1. *Noise filter*
2. *Main electronic circuit board*
15. *Display board*
16. *WD-HP module*

12.3 Drain pump – Aqua control

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

12.3.1 General characteristics

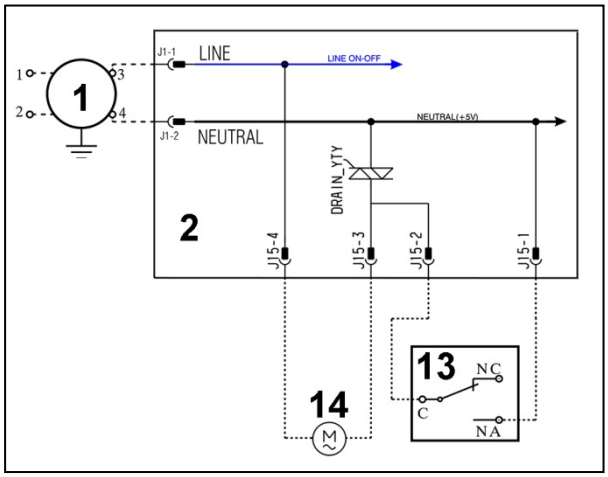


1. *Wheel*
2. *Rotor*
3. *Stator*

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

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

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



1. *Noise filter*
2. *Main electronic circuit board*
13. *Aquacontrol sensor*
14. *Drainage pump*

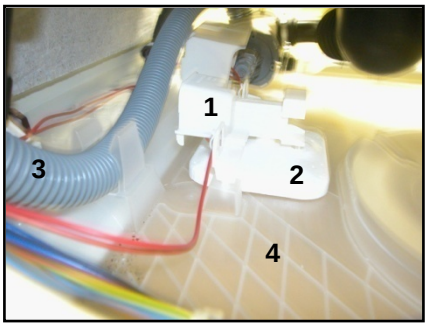
12.4 Water control

12.4.1 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).

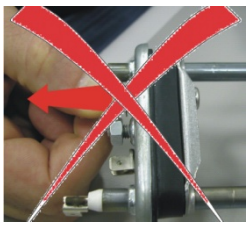
In the bottom of the washing machine there is a plastic bottom that forms a container. This collects any water leakage (from the tub, from the pipes, etc.), which flows into the area in which the float is positioned (made of polystyrene). In the presence of water this lifts up and triggers the microswitch, 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*



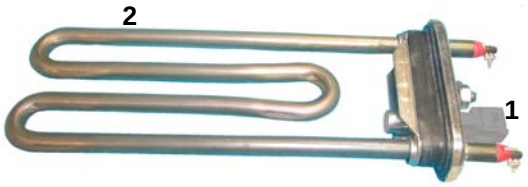
12.5 Heating element

- **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. replace the NTC probe, etc...)



12.5.1 General characteristics

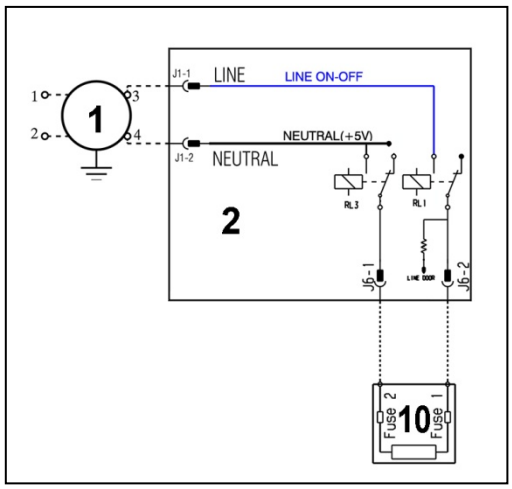
1. *NTC probe*
2. *Heating element*



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).

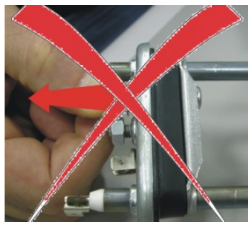
1. *Noise filter*
2. *Main electronic circuit board*
10. *Heating element*



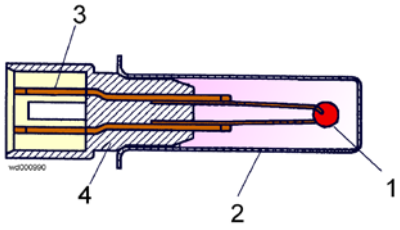
12.6 Temperature probe

- **When replacing the heating element, please refer to the code shown in the list of spare parts relating to the appliance.**
- **It is strictly forbidden to tamper with the heating element in any way!!!**

  (e.g. replace the NTC probe, etc...)



12.6.1 General characteristics

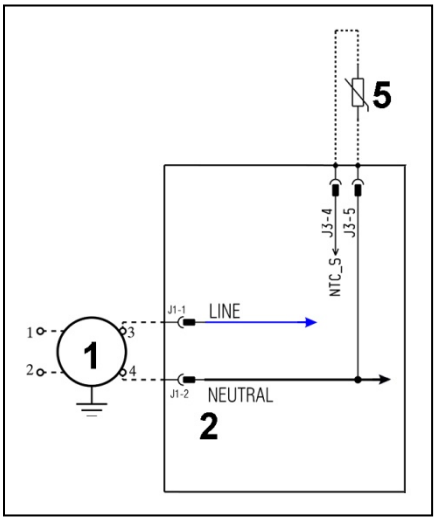


1. *NTC heating element*
2. *Metal capsule*
3. *Terminals*
4. *Plastic casing*

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

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

1. *Noise filter*
2. *Main electronic circuit board*
5. *NTC probe*



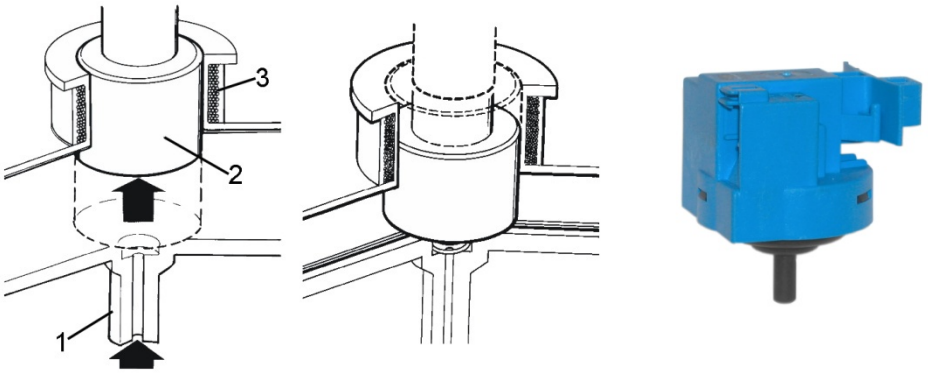
In the event of a fault (short-circuit or stoppage) an alarm will be displayed - see table of alarms.

12.7 Analogue pressure switch

12.7.1 General characteristics

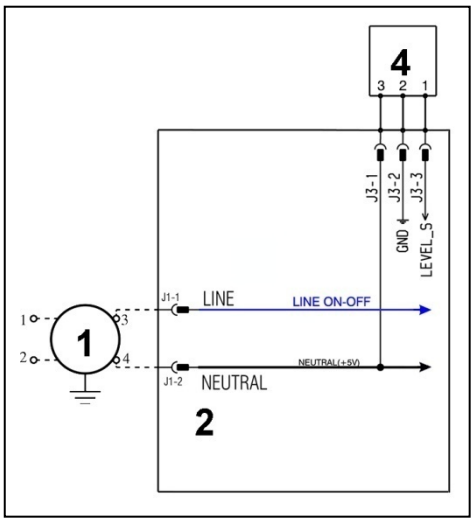
The electronic pressure switch is an analogue device that controls the water level in the tub, used in models with electronic control system, and it is directly connected to the main PCB.

1. *Small pipe*
2. *Core*
3. *Oscillating coil*

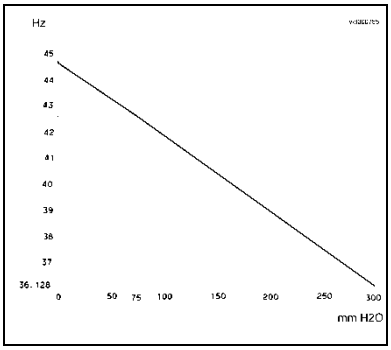


The pressure switch is connected via a pipe to the pressure chamber.
When water is introduced into the tub, this creates a pressure inside the hydraulic circuit that causes the membrane to change position. This in turn modifies the position of the core inside the coil, thus changing the inductance and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

1. *Noise filter*
2. *Main electronic circuit board*
4. *Analogue pressure switch*



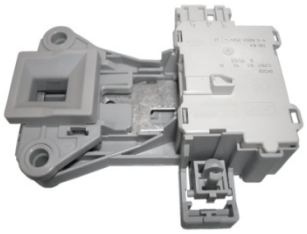
Operating frequency variation according to the quantity of water in the tub.



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

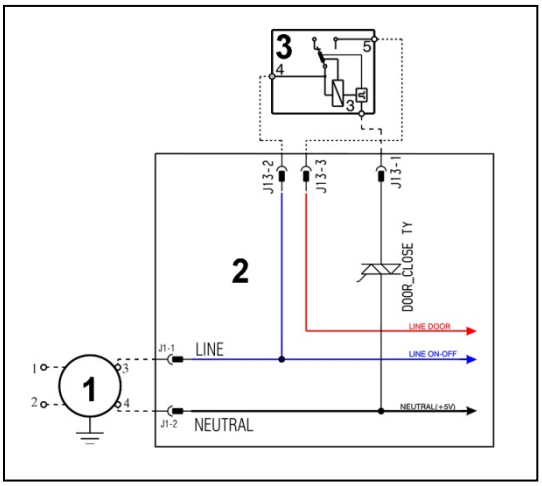
12.8 Door safety interlock

12.8.1 General characteristics

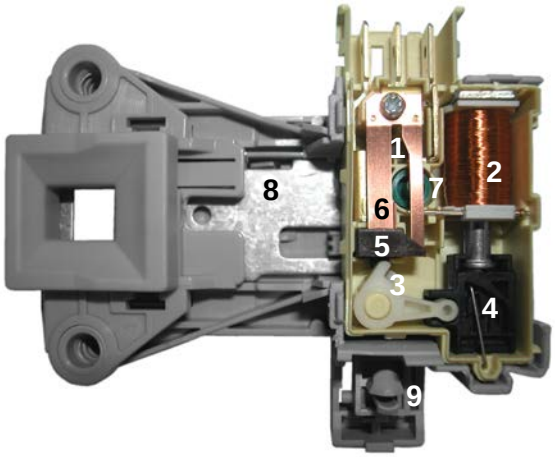


The instantaneous door interlock allows the door to be opened as soon as the drum stops, if the conditions described further are met.

1. *Noise filter*
2. *Main electronic circuit board*
3. *Door safety interlock*



12.8.2 Operating principle



1. *Solenoid protection PTC*
2. *Solenoid*
3. *Lifting assembly*
4. *Cam (Labyrinth)*
5. *Locking pin*
6. *Electrical contacts (main switch)*
7. *Door sensing switch*
8. *Cursor*
9. *Rod latch for manual door release*

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

→ Solenoid protection

A PTC is connected in series to the solenoid to limit the current (and therefore any overheating) in the following cases:
→ main circuit board triac short circuit
→ many consecutive pressings of the start/pause button (more than 5 times)

Appliance door/door open conditions

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

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

– Manual release device

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

The new device has a manual opening system (see fig. 1), which allows the door to be opened following the instructions below:

Before activating the manual opening of the door, check:

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

For manual opening, proceed as follows:

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

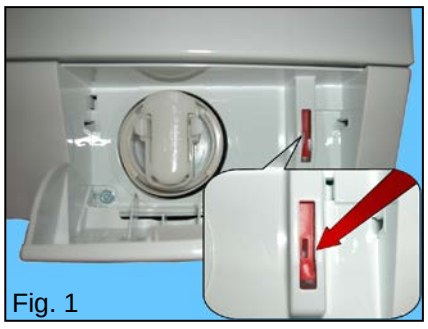


Fig. 1

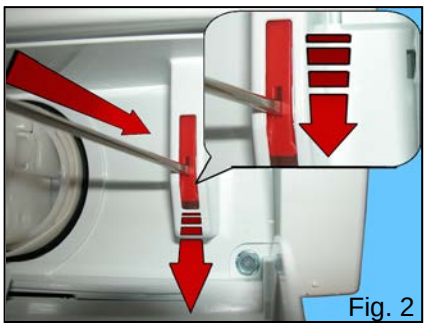


Fig. 2

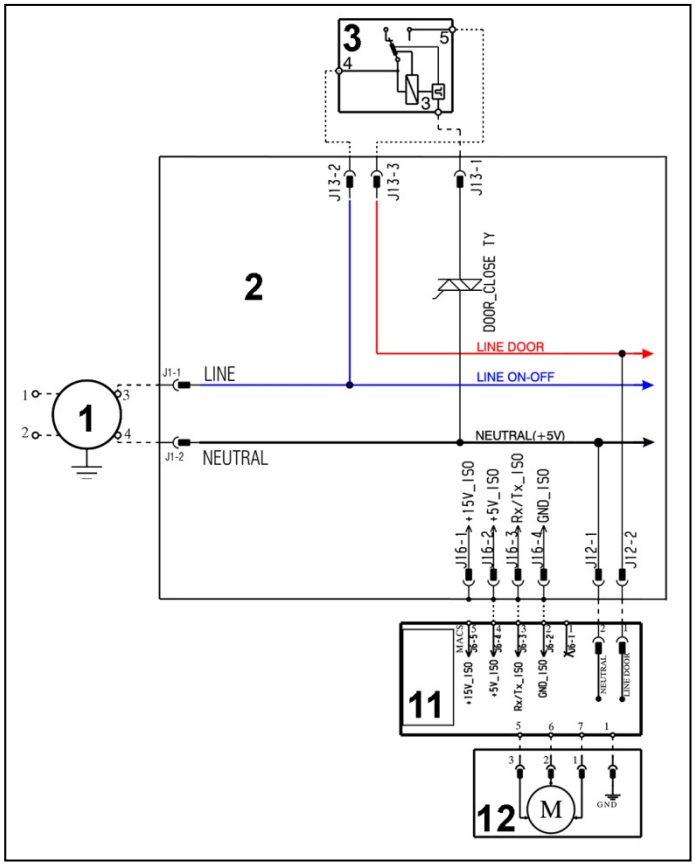

Fig. 3

12.9 Three-phase asynchronous motor – Inverter (where featured)

12.9.1 Motor

12.9.1.1 General characteristics

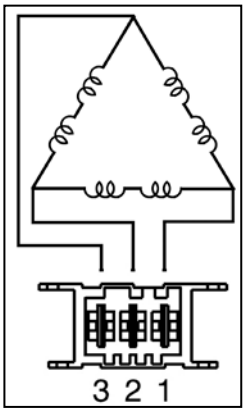
1. Noise filter
2. Main electronic circuit board
3. Door safety interlock
11. Inverter
12. Motor



12.9.1.2 Power supply to motor

Three-phase power is fed by the inverter (11), which sends through connectors 5-6-7 the three phases to connectors 1-2-3 on the motor.
The phase shift between the phases is 120° and peak amplitude is 310 V.

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



Coil y ohm 5.35 ~ ±7% (contacts 2-3)

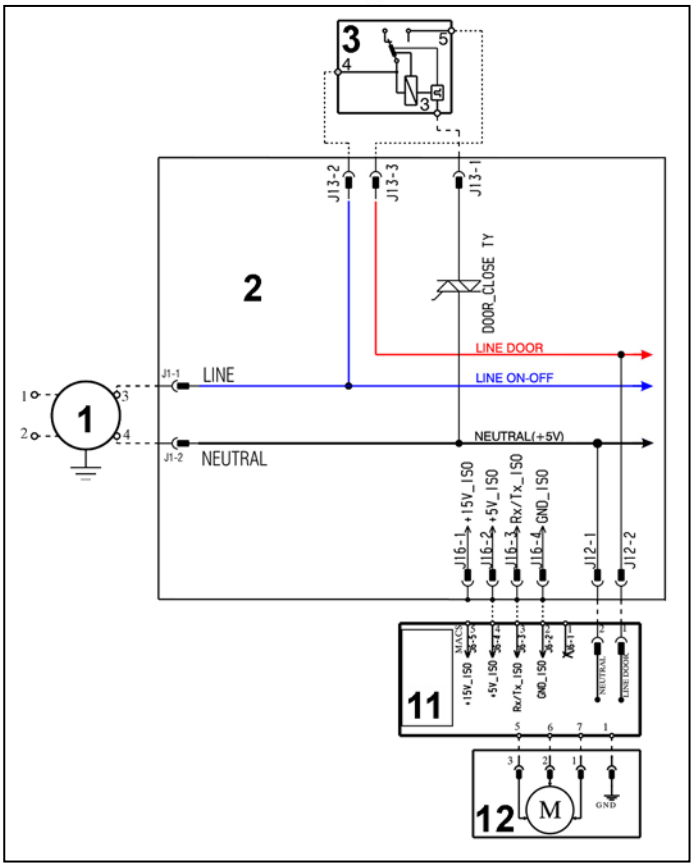
Coil x ohm 5.35 ~ ±7% (contacts 1-2)

Coil z ohm 5.35 ~ ±7% (contacts 1-3)

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

12.10 Three-phase synchronous motor with permanent magnets (where featured)

12.10.1 General characteristics

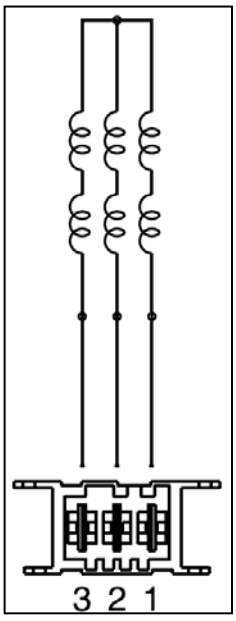


1. Noise filter
2. Main electronic circuit board
3. Door safety interlock
11. Inverter
12. Motor

Power supply to motor

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

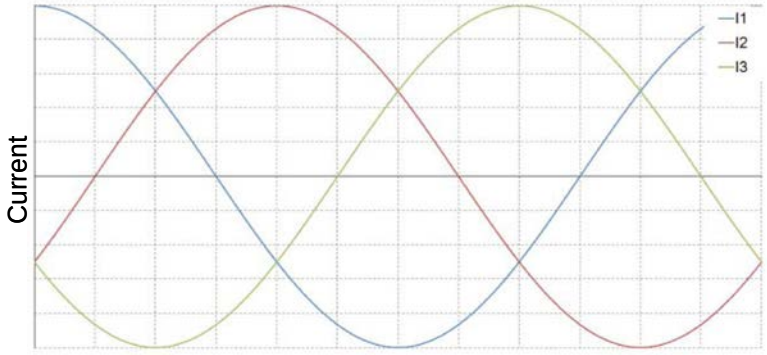
Coil y ohm 4.94 ~ ±7% (contacts 2-3)
Coil x ohm 4.94 ~ ±7% (contacts 1-2)
Coil z ohm 4.94 ~ ±7% (contacts 1-3)



12.10.2 Operating principle

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

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



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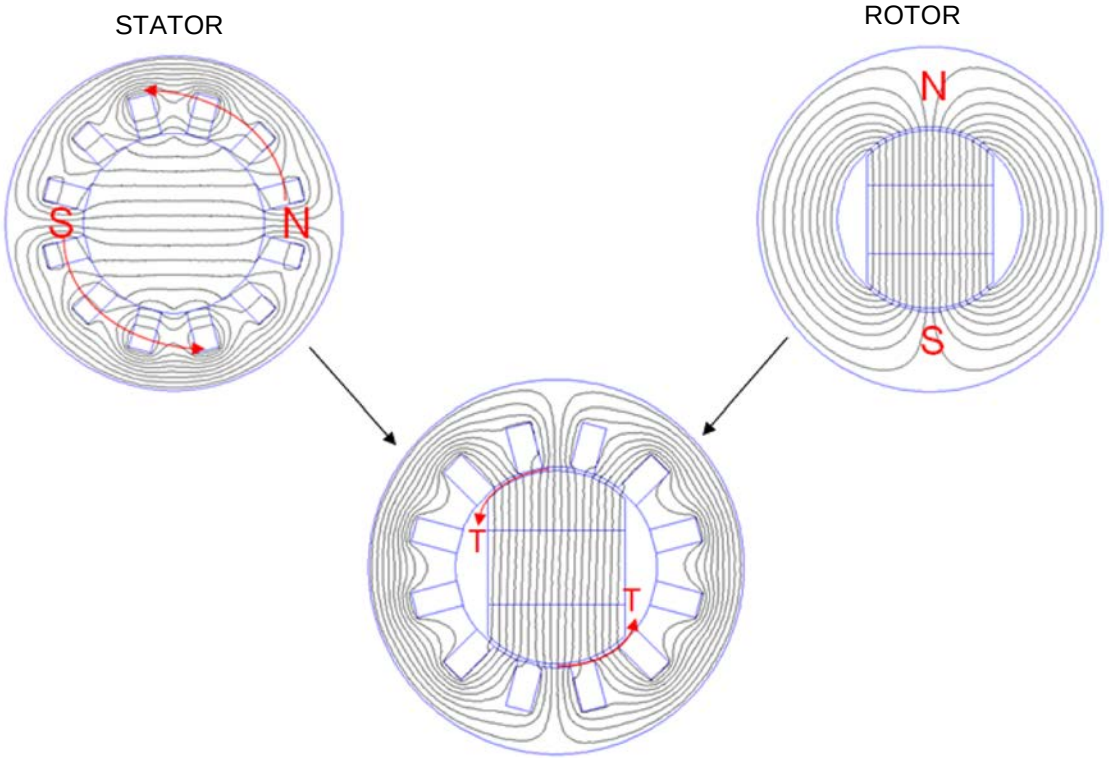
The magnetic field of the rotor is generated by the permanent magnets which are positioned in the rotor. When current passes through the stator windings, these generate a magnetic field that tends to attract the magnets (the north poles of the stator attract the south poles of the rotor, and the south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



OVERALL EFFECT

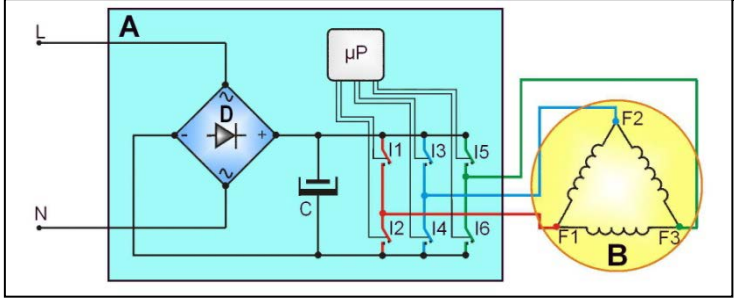
12.11 Inverter (UIMC)

12.11.1 General characteristics

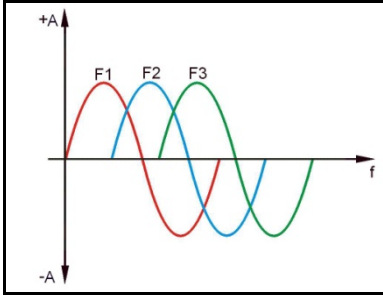
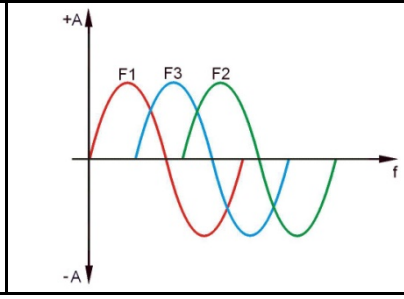
The EWX11831 electronics use a new asynchronous motor, with 2 poles, three-phase, with high performance and low noise levels.

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

“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 310 V at the ends of condenser C, which through the combination of the opening and closing of switches I1–I6 (piloted by the µprocessor) determines the piloting voltage and frequency of the motor.

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

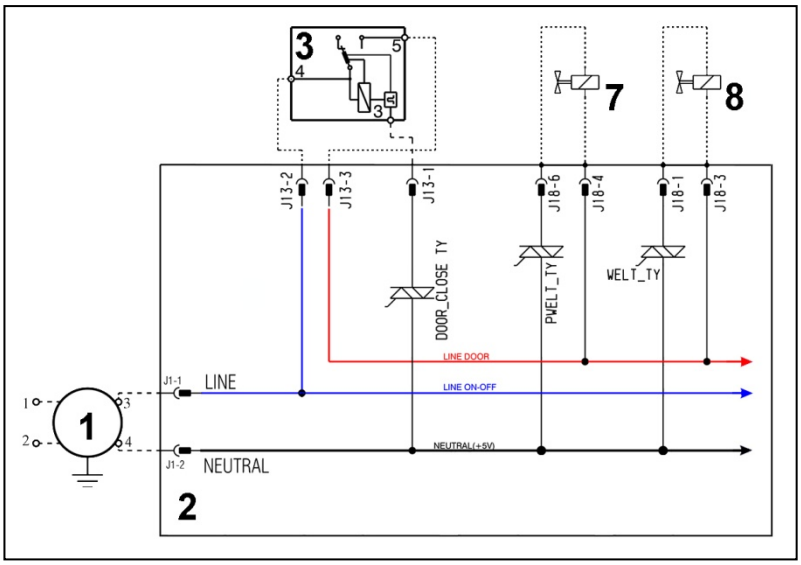
The motors powered by this inverter do not have tachometric winding.
The inverter can detect/adjust the motor speed via the current absorption.
During the spin phases, the microprocessor can perform, depending on the software configuration, the anti-foam check, where featured, and the anti-unbalancing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

- **Any work on electrical appliances must only be carried out by qualified personnel.**
- **Unplug the appliance before accessing internal components.**
- **After disconnecting the plug from the socket, wait about 2 minutes before removing the “UIMC” plastic cover, thus allowing any condensers to discharge and avoid an electric shock.**

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

12.11.2 Solenoid valves

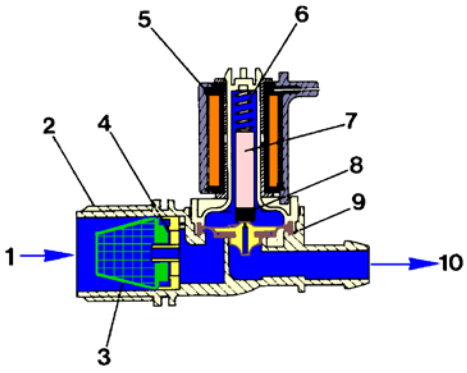
12.11.3 General characteristics



1. *Noise filter*
2. *Main electronic circuit board*
3. *Door safety interlock*
7. *Pre-wash solenoid valve*
8. *Wash solenoid valve*

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

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



12.11.3.1 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.

12.11.3.2 Mechanical jamming of the solenoid valve

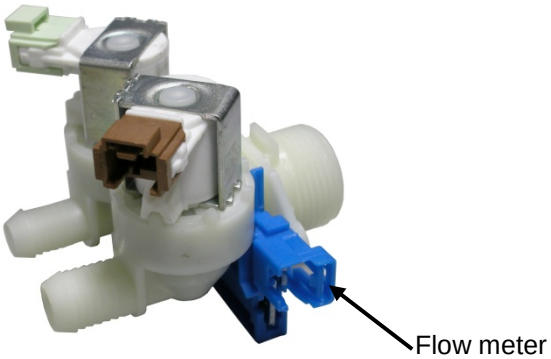
The solenoid valve may jam open without being actuated (which will cause flooding if the pressure switch controlling the water level does not trip). If this occurs, the electronic control system (which continuously monitors the flow sensor) will lock the door, start the drain pump and display an ALARM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

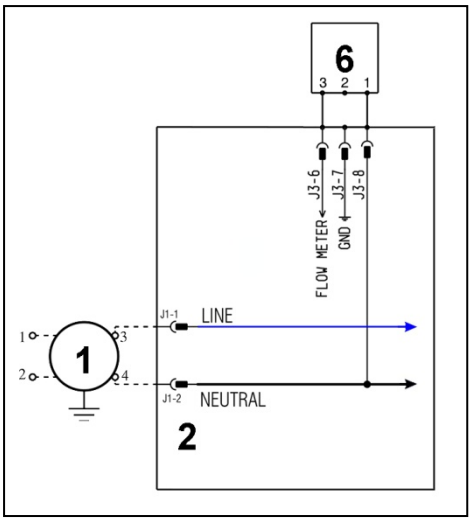
12.11.3.3 Low water pressure

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.

12.12 Flow meter

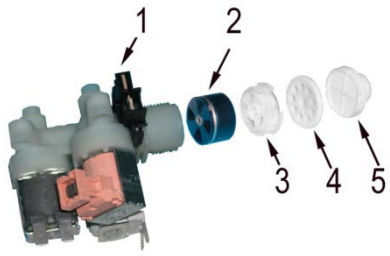
12.12.1 General characteristics





1. *Noise filter*
2. *Main electronic circuit board*
6. *Flow sensor*

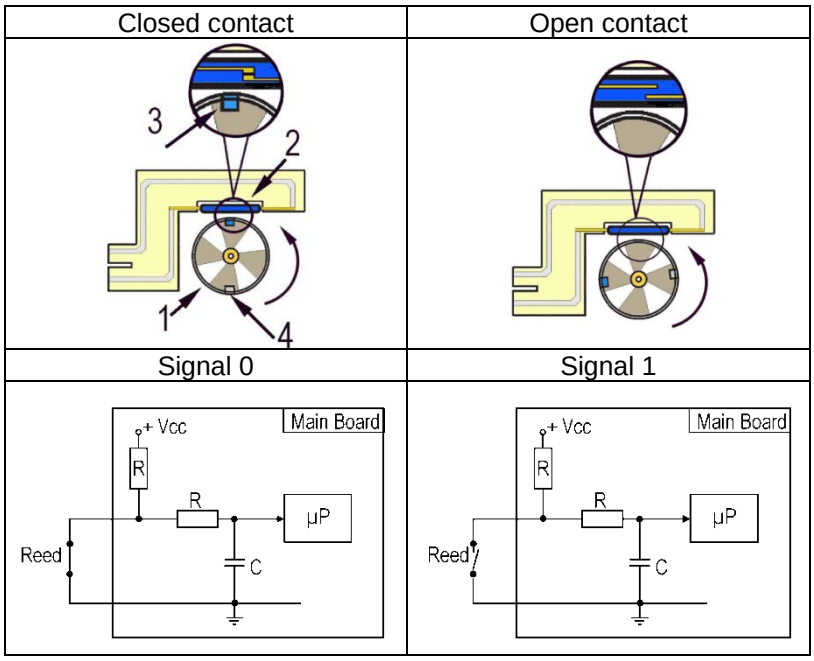
Some models of solenoid valves have a built-in flow sensor, which measures the quantity of water in litres that is loaded into the appliance.
In the event of a sensor failure, the water level is controlled by the analogue pressure switch.

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

12.12.2 Operating principle of the flowmeter

The main components of the flowmeter are:

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

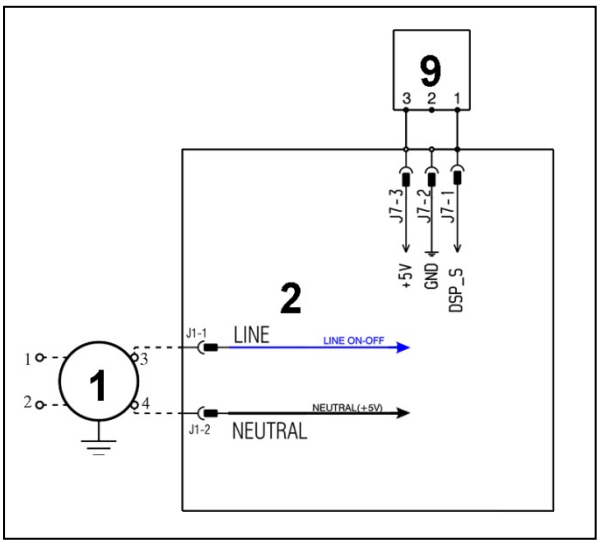


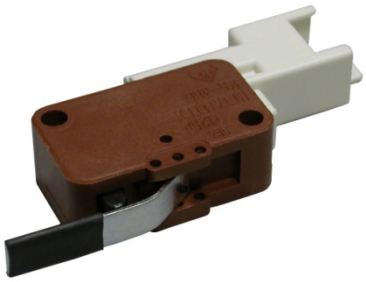
Water entering the solenoid valve rotates the turbine (1) and magnet (3), which passes in front of the Reed contact (2), thus closing it. As this contact opens and closes, it generates pulses (at a frequency that depends on the water flow rate).
The turbine completes 230 revolutions for each litre of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

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

12.13 Filter sensor

1. *Noise filter*
2. *Main electronic circuit board*
9. *Filter sensor*





It is a simple switch situated near the fluff filter seat. If there is no filter, the microswitch sends the microprocessor a signal that the filter is missing and informs the end user of this anomaly by lighting the related icon on the display.

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

13 DRYING CIRCUIT

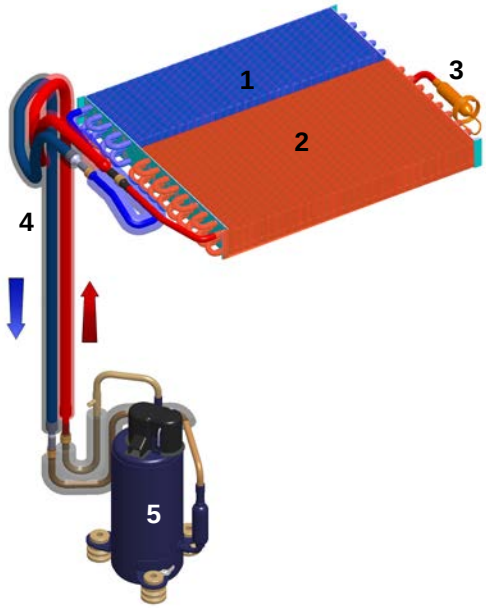
Up until now, the hot air that circulated in the drying circuit was generated by the heating of the two heating elements, which became incandescent as electricity ran through them, and the movement of the air was guaranteed by a fan.
In this appliance, the movement of the air is still guaranteed by a fan, but the hot air is no longer generated by incandescent heating elements, but by a "Heat Pump" instead.

13.1 Heat pump

13.1.1 Principle of the heat pump

The heat pump is a device designed to draw energy from nature and transform it into energy for heating/cooling.
The majority of energy used to operate it is drawn freely from its surroundings and only a small part is drawn from the electricity mains.
For this reason, using a heat pump means being environmentally-friendly, using renewable energy sources, which are clean and free.
The heat pump consists of:

1. Evaporator
2. Condenser
3. Capillary
4. Pipings
5. Compressor

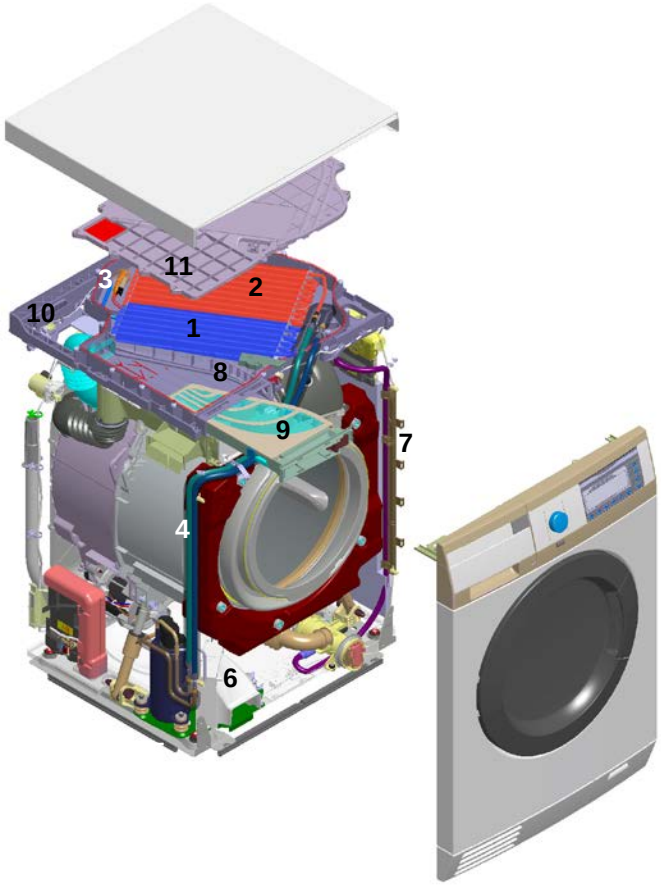


13.1.2 General heat pump operation

The compressor (5) begins to compress the refrigerant gas (R134a, 120g) inside the circuit; it travels along the red pipe to the condenser (2). Inside, the gas condenses and goes from a gaseous state to the liquid state, and in doing so raising the temperature of the condenser, which can reach up to 50°C. The capillary (3) is situated at the outlet and it forms a restriction, which causes the pressure to drop. The low-pressure liquid refrigerant enters the evaporator, where a heat transfer occurs and it is transformed from a liquid back into a gas, with the resulting drop in temperature of the evaporator, which can reach 20°C. As it comes out of the evaporator, the refrigerant is in a gaseous state and it returns to the compressor along the blue pipe, and the whole process is repeated for the full duration of the drying cycle.
In some circumstances, the first 5-15 minutes of the cycles, especially when it is cold, the temperature may even drop to near 0°C values (with the formation of frost on the coldest pipes of the evaporator for short periods of time).

13.2 Position of components inside the appliance

1. Evaporator
2. Condenser
3. Capillary
4. Flexible hoses
5. Compressor
6. Fan
7. Condensation water drain pipe
8. Sepik internal filter
9. Sepik filter assembly
10. Sepik lower WD-HP housing
11. Sepik upper WD-HP housing

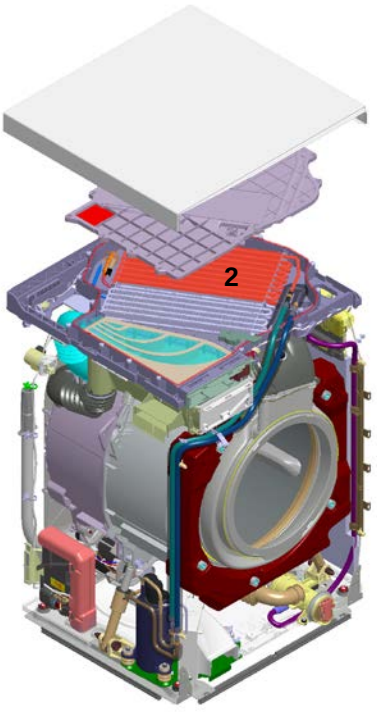


13.2.1 Hot air circulation inside the appliance

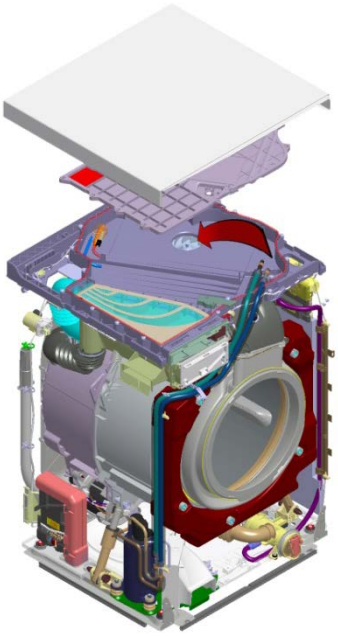
As described in Para. 13.1.2

The temperature of the condenser (2) rises (due to the compression, the passage from gaseous state to liquid state of the gas and the drying cycle phase) and reaches several temperatures depending on the area, for instance: in the inlet pipes, temperatures of up to 90°C can be registered, whereas in the central part of the heat exchanger up to its outlet pipe, the temperatures may reach 45–55°C (condensation temperature).

2 Condenser

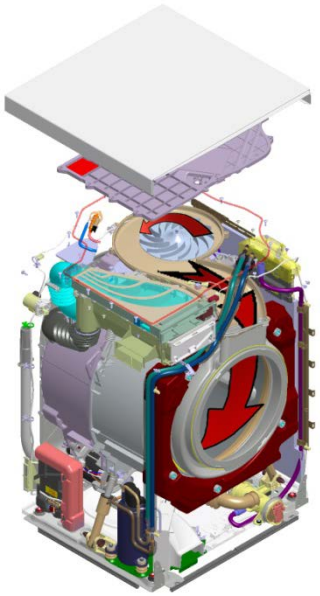


The hot dry air (generated by the condenser heating) travels through the hole (indicated by the arrow) in the lower WD-HP Housing and is taken in by the power fan.



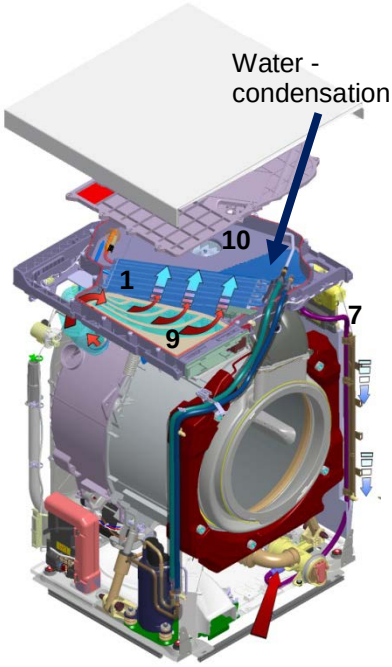
As it turns, it pushes the hot air towards the duct and through the bellow seal to reach inside the drum.

The drum is in motion with a clockwise and anti-clockwise rotation to allow the laundry to unfold and at the same time remove the moisture as hot air passes through it.



After moving through the laundry, the hot/moist air exits from the bottom of the casing (near the hole where the detergent fill pipe is inserted). The fan helps the air continue to circulate, through the Sepik filter assembly (9) and the evaporator (1), which since it is a low temperature (generated by the evaporation of the refrigerant) - causes a heat transfer and removes the moisture from the air while cooling it. During this heat transfer, the evaporator is coated with lots of water droplets, forming the condensation water which is collected in the lower WD-HP Housing (10) and is conveyed along a pipe (7) towards the heat pump assembly. Part of the condensation water is drained away in the tub drain pipe.

The above process is repeated until the end of the drying cycle.



13.3 Programmes

The drying cycles are spilt into:

a. Automatic cycles:
   The drying cycles can be performed at the end of the wash cycle or as a separate programme.
   The calculation of the time required to reach the desired degree of drying is made by the NTC probe positioned on the duct, combined with the microprocessor.
   Three types of drying can be selected:

   - Iron dry
   - Wardrobe dry
   - Extra Dry

   The automatic cycles last a maximum of 250 minutes.

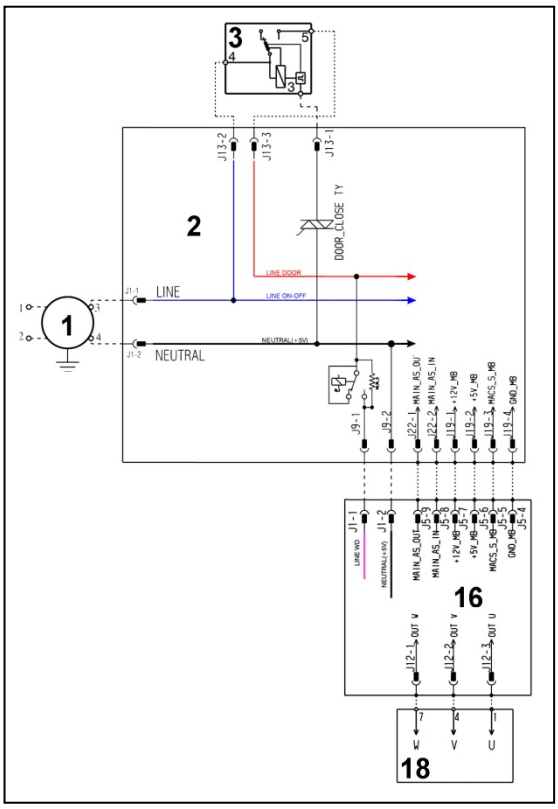
b. Time-controlled cycle:
   The user selects the drying time (max 250 minutes for COTTONS and max 210 minutes for SYNTHETICS).

13.4 Electric components

13.4.1 Three-phase power fan with permanent magnets

The motor that powers the air circulation fan for drying is three-phase with permanent magnets (making for high performance levels and low noise levels). The power supply is generated by an inverter incorporated within the EAX14 board, and it is powered for the full duration of the drying phase.
Its speed is 4000 rpm

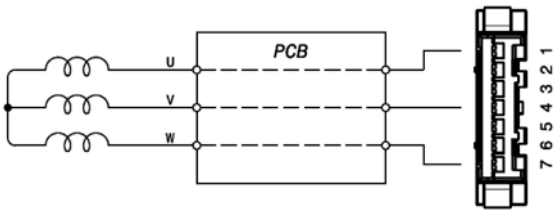
Its flow rate is approximately 90 m^3 – hour



1. *Noise filter*
2. *Main electronic circuit board.*
3. *Door delay system*
16. *WD-HP module*
18. *Power fan*

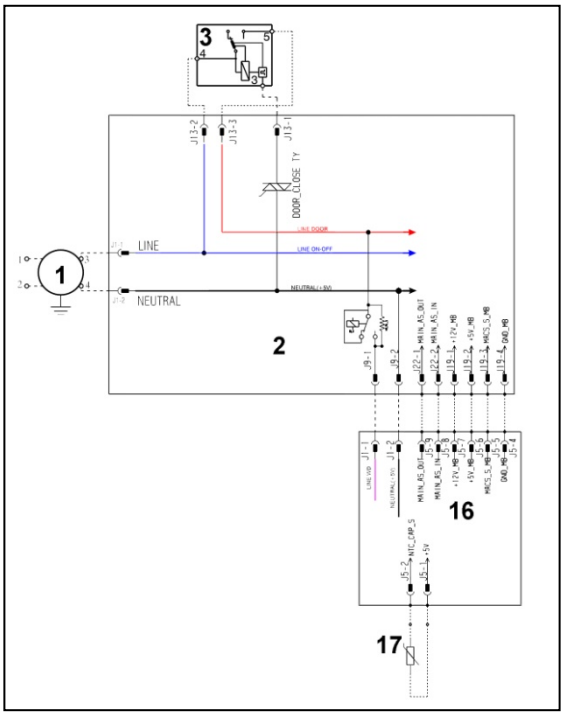
	In case of repair requiring the disconnection of the power fan power supply connector, proceed as follows: - Unplug the appliance from the electricity socket. - Wait approximately two minutes to allow a high flow rate condenser (situated in the drying board) to discharge and avoid over voltages which could damage the power fan. - Disconnect the power fan power supply connector.

It is possible to get an indication of the efficiency of the power fan by checking certain resistance values between the connector terminals with a tester.



Connector terminals	1-4	4-7	7-1
Resistance	26.8±7%	26.8±7%	26.8±7%Ω

13.4.2 Capillary Sensor

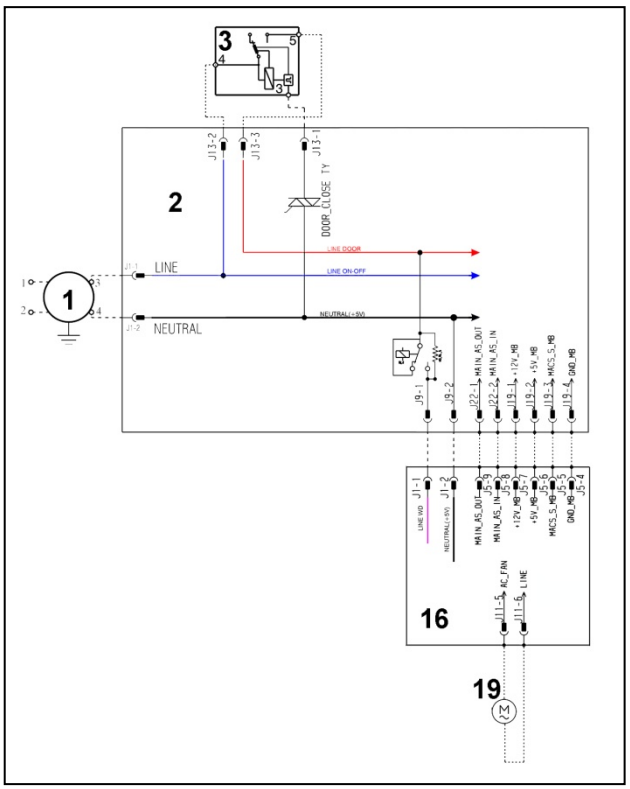


1. *Noise filter*
2. *Main electronic circuit board*
3. *Door delay system*
16. *WD-HP module*
17. *NTC probe*

It is inserted in a cylinder in close contact with the capillary, to control its temperature.

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

13.4.3 Compressor Fan



1. *Noise filter*
2. *Main electronic circuit board*
3. *Door delay system*
16. *WD-HP module*
19. *Power fan*

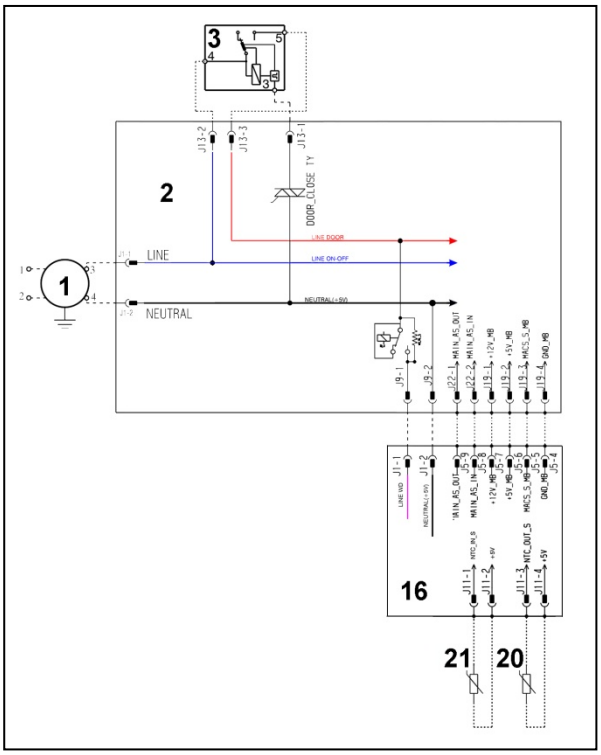
It generates a flow of air to cool the compressor.

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

13.5 Temperature and humidity control

When an automatic drying cycle is set, the degree of humidity and the temperature degree which the air inside the drum containing the laundry are established concurrently.

Two NTC probes are used to this end, situated: one in the duct, which controls the temperature of the air, and the other in the WD-HP module to control the degree of humidity.



1. *Noise filter*
2. *Main electronic circuit board.*
3. *Door delay system*
16. *WD-HP module*
20. *NTC probe (humidity)*
21. *NTC probe (Drying)*

Technical characteristics of NTC probes		
	Resistor at 25°	
NTC probe (humidity)	5000Ω	
NTC probe (drying)	5000Ω	

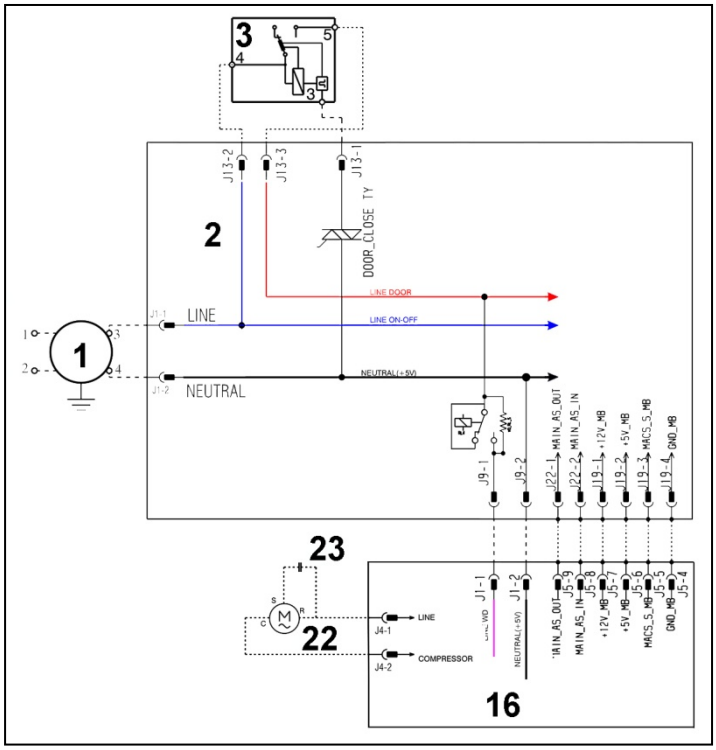
In the event of a fault an alarm will be displayed - see table of alarms.

13.5.1 Compressor and start-up capacitor

Start-up capacitor

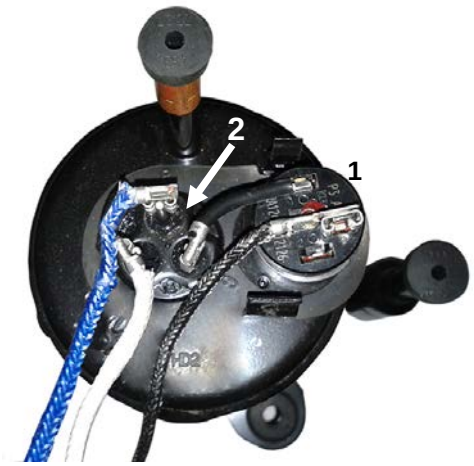
Compressor

1. *Noise filter*
2. *Main electronic circuit board*
3. *Door delay system*
16. *WD-HP module*
20. *Compressor*
21. *Start-up capacitor*



This is a rotating compressor controlled by an asynchronous motor powered at a voltage of 220–240 V and with a nominal consumption of 1.35 A.

The head of the compressor is fitted with a mechanical overload cut-off (1) with the function of protecting the motor from overloads or overheating and the contact terminals (2).



13.6 HP Heat Pump efficiency control

To check the efficiency of the heat pump, the appliance cannot have performed a washing or drying cycle for some hours, and the drum must be empty (otherwise the control is falsified).

Steps to carry out:

1. Set the diagnostics cycle (see page 19)
2. Turn the selector knob to the tenth position (without stopping at any intermediate position)

Once you have selected the tenth position, the display will indicate alternately the temperatures corresponding to the NTC sensors (the relevant value is more or less the room temperature).
Make a note of the three initial temperatures on a sheet of paper.

If they are the same or if they differ by a maximum of three degrees, the NTC sensors are not in anyway faulty, whereas if the difference is more than three degrees, check the sensor that detects the temperature that is not consistent with the others.

The letter preceding the temperature value detected indicates the position of the NTC probe:

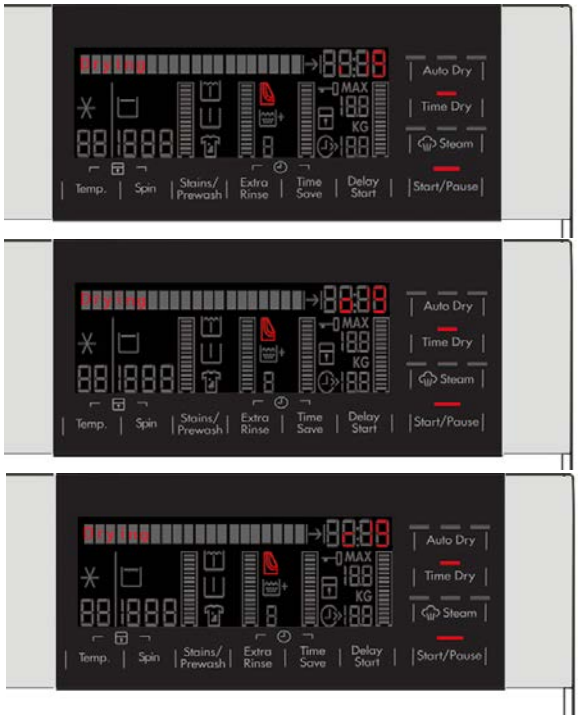
in (input)  , **o**ut (output)  , **c**apillary 

Control panel display

NTC Temperature at **I**nput (drying NTC positioned on the duct)

NTC Temperature at **O**utput (humidity NTC positioned on the housing assembly)

NTC Temperature in contact with **C**apillary



Approximately 15 minutes after setting it to the tenth position: detect the temperatures and compare them with the ones detected initially.
If the temperature value has increased by a minimum of:

NTC **I**nput	NTC **O**utout	NTC **C**apillary
6°	3°	7°

The circuit is full.

Whereas if the maximum increase is of:

NTC **I**nput	NTC **O**utout	NTC **C**apillary
2°	2°	2°

the circuit is empty.

14 ALARM SUMMARY TABLE

Alarm	Description	Possible fault	Machine status/action	Reset
E00				
E11	**Water fill difficulty during washing**	Tap closed or water pressure too low; Drain pipe improperly positioned; Water fill solenoid valve faulty; Leaks from water circuit on pressure switch; Pressure switch faulty; Wiring faulty; Main PCB faulty.	Cycle is paused with door locked	START/RESET
E12	**Water fill difficulty during drying**	Tap closed or water pressure too low; Drain pipe improperly positioned; Water fill solenoid valve faulty; Leaks from water circuit on pressure switch; Pressure switch faulty; Wiring faulty; Main PCB faulty.	Cycle is paused with door locked	START/RESET
E13	**Water leaks**	Drain pipe improperly positioned; Water pressure too low Water fill solenoid valve faulty; Water circuit on pressure switch is leaking/clogged; Pressure switch faulty.	Cycle is paused with door locked	START/RESET
E21	**Drain difficulty during washing**	Drain pipe kinked/clogged/improperly positioned; Drain filter clogged/dirty; Wiring faulty; Pressure switch faulty; Drain pump rotor blocked; Drain pump faulty; Main PCB faulty.	Cycle is paused (after 2 attempts)	START ON/OFF RESET
E22	**Drain difficulty during drying**	Drain tube kinked/clogged/improperly positioned; Drain filter clogged/dirty; Wiring faulty; Drain pump faulty; Pressure switch faulty; Main PCB faulty;	Cycle is paused	START/RESET
E23	**Faulty triac for drain pump**	Wiring faulty; Drain pump faulty; Main PCB faulty.	Safety drain cycle – Cycle stops with door open	RESET
E24	**Drain pump TRIAC "sensing" circuit faulty.**	Main circuit board faulty.	Safety drain cycle – Cycle stops with door unlocked	RESET
E31	**Electronic pressure switch circuit faulty**	Wiring; Faulty pressure switch; Main PCB;	Cycle stops with door locked	RESET
E32	**Calibration error of the electronic pressure switch**	Drain tube kinked/clogged/improperly positioned; Faulty solenoid; Drain filter clogged/dirty; Drain pump faulty; Leaks in the pressure switch hydraulic circuit; Pressure switch faulty; Wiring; Main PCB;	Cycle is paused	START/RESET
E35	**Overflow**	Water fill solenoid valve faulty; Leaks from water circuit on pressure switch; Wiring faulty; Pressure switch faulty; Main PCB faulty.	Cycle interrupted. Safety drain cycle. Drain pump continues to operate (5 mins. on, then 5 mins. off, and so on)	RESET
E38	**Internal pressure chamber is clogged (water level does not change for at least 30 sec. of drum rotation)**	Motor belt broken; Water circuit on pressure switch clogged.	Heating phase is skipped	RESET
E41	**Door open**	Check whether the door is closed properly; Wiring faulty; Door safety interlock faulty; Main circuit board faulty.	Cycle is paused	START/RESET
E42	**Problems with door lock**	Wiring faulty; Door safety interlock faulty; Electrical current leak between heating element and ground; Main PCB faulty.	Cycle is paused	START/RESET
E43	**Faulty triac supplying power to door delay system**	Wiring faulty; Door safety interlock faulty; Main circuit board faulty.	(Safety drain cycle) Cycle blocked	RESET

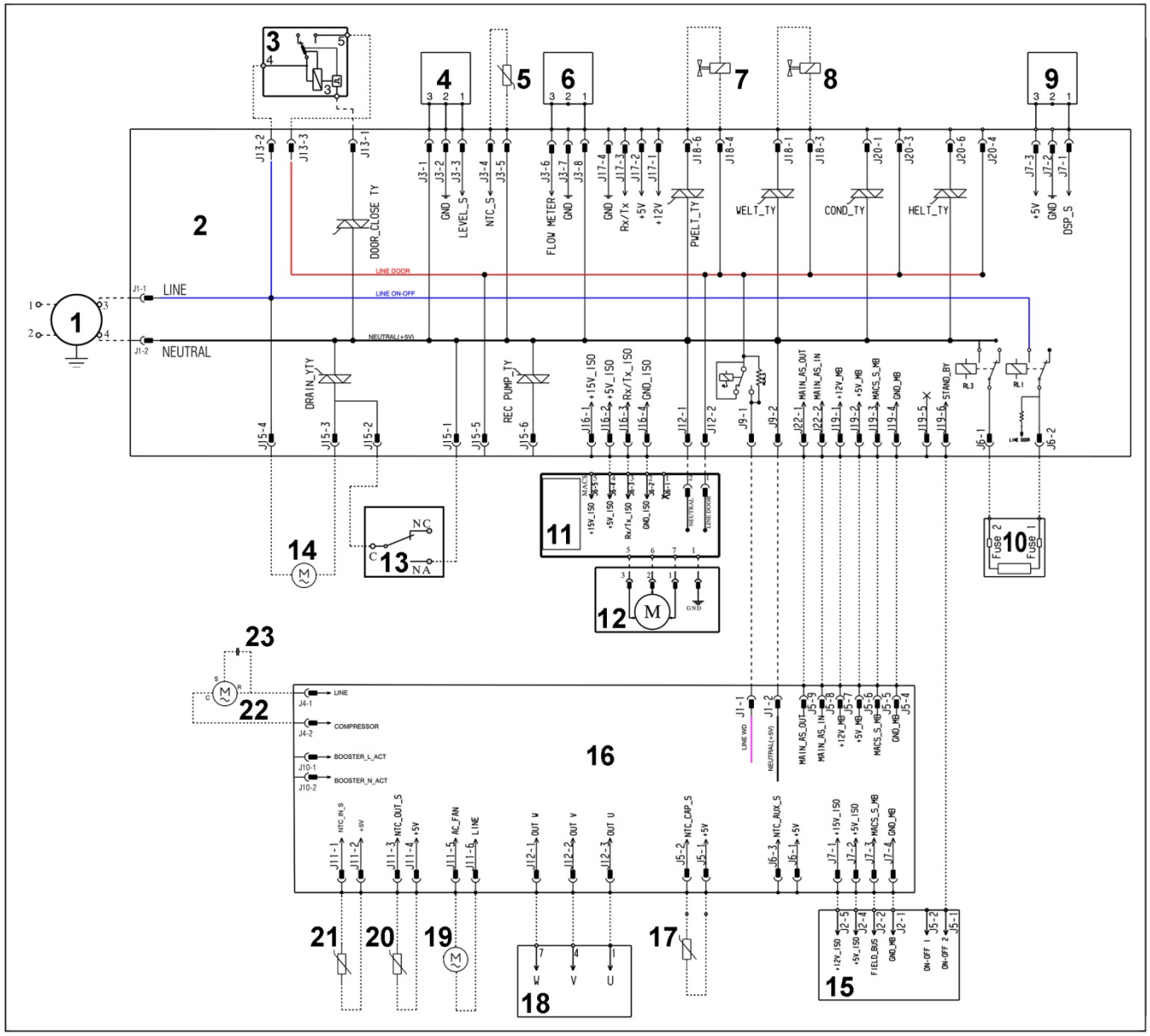
Alarm	Description	Possible fault	Machine status/action	Reset
E44	**Faulty sensing by door delay system**	Main circuit board faulty.	(Safety drain cycle) Cycle blocked	RESET
E45	**Faulty sensing by door delay system triac**	Main circuit board faulty.	(Safety drain cycle) Cycle blocked	RESET
E57	**Inverter is drawing too much current (>15 A)**	Wiring faulty on inverter for motor; Inverter PCB faulty; Motor faulty.	Cycle stops with door locked (after 5 attempts)	ON/OFF RESET
E58	**Inverter is drawing too much current (>4.5 A)**	Motor malfunction (overload); Wiring faulty on inverter faulty; Motor faulty; Inverter PCB faulty.	Cycle stops with door locked (after 5 attempts)	ON/OFF RESET
E59	**No rotation of the motor**	Wiring faulty on inverter for motor; Inverter PCB faulty; Motor faulty;	Cycle stops with door locked (after 5 attempts)	ON/OFF RESET
E5A	**Overheating on heat dissipator for Inverter**	Overheating caused by continuous operation or ambient conditions (let appliance cool down); Inverter PCB faulty.	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 175 V**	Wiring faulty; Inverter PCB faulty;	Cycle stops with door locked (after 5 attempts)	ON/OFF RESET
E61	**Insufficient heating during washing**	Wiring faulty; NTC probe for wash cycle faulty; Heating element faulty; Main PCB faulty.	The heating phase is skipped	START/RESET
E62	**Overheating during washing (temperature higher than 88°C for more than 5 min.)**	Wiring faulty; NTC probe for wash cycle faulty; Heating element faulty; Main PCB faulty.	Safety drain cycle Cycle stops with door open	RESET
E66	**Heating element power relay faulty (inconsistency between sensing and relay status)**	Earth leakage between washing heating element and earth; Main PCB faulty;	Safety water fill Cycle stops with door closed	ON/OFF RESET
E68	**Earth leakage**	Earth leakage between washing heating element and earth.	The heating phase is skipped	START/RESET
E69	**Washing heating element damaged**	Wiring faulty; Heating element for washing interrupted (thermal fuse open); Main circuit board faulty.	----------	START ON/OFF RESET
E6A	**Heating relay sensing faulty**	Main circuit board faulty.	Cycle stops with door locked	RESET
E6H	**Washing 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
E71	**NTC probe for wash cycle faulty (short-circuited or open)**	Wiring faulty; NTC probe for wash cycle faulty. Main circuit board faulty.	The heating phase is skipped	START/RESET

Alarm	Description	Possible fault	Machine status/action	Reset
E72	**Fault in NTC-OUT (HP Module) sensor (voltage out of range, short-circuit or open circuit)**	Wiring faulty; NTC-OUT sensor (WD-HP Module) improperly positioned or faulty; WD-HP Module faulty.	The drying phase is skipped	START/RESET
E73	**Fault in NTC-IN (Drying duct) sensor (voltage out of range, short-circuit or open circuit)**	Wiring faulty; NTC-IN sensor (duct) improperly positioned or faulty; WD-HP Module faulty.	The drying phase is skipped	START/RESET
E74	**NTC probe for wash cycle improperly positioned**	NTC probe for wash cycle improperly positioned; Wiring faulty; NTC probe faulty; Main PCB faulty.	The heating phase is skipped	RESET
E75	**Fault in capillary NTC sensor (voltage out of range, short-circuit or open circuit)**	Wiring faulty; Capillary NTC sensor faulty; WD-HP Module faulty.	The drying phase is skipped	START/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, WD-HP Module 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
E9E	**Display board sensor/touch key faulty**	Display board faulty.	----------	ON/OFF
EC1	**Electronically controlled valve blocked with operating flow meter**	Wiring faulty; Solenoid valve faulty/blocked, Main 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, Main 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

Alarm	Description	Possible fault	Machine status/action	Reset
Ed1	**Data transfer error between WD-HP Module and main PCB**	Wiring faulty; Control/display PCB faulty, Inverter board faulty, Weight sensor board faulty, WD-HP Module faulty, Main PCB faulty.	Cycle blocked	START ON/OFF RESET
EdA	**WD-HP Module power supply outside the limits**	Problem with the power supply network (incorrect/disturbed); WD-HP Module faulty;	Wait for nominal frequency conditions	START ON/OFF RESET
EdH	**WD-HP module microprocessor faulty**	WD-HP module faulty;	No action to be performed, if continues, replace the WD PCB	START ON/OFF RESET
EE1	**The current required by the WD-HP module suddenly rises above (>2.5 A)**	Power fan-WD-HP module wiring faulty; WD-HP module faulty, Power fan faulty.	Cycle blocked	START ON/OFF RESET
EE2	**The current of one fan phase rises above (>0.8 A for 0.6 ms)**	Abnormal power fan operation (check that the fan is not obstructed); Fan-WD-HP Module wiring faulty; Fan faulty; WD-HP Module faulty	Cycle blocked	START ON/OFF RESET
EE4	**Motor fan/fan rotation speed incorrect.**	Abnormal power fan/fan operation (check that the fan is not obstructed); Fan-WD-HP Module wiring faulty; Fan faulty; WD-HP Module faulty	Cycle blocked	START ON/OFF RESET
EE5	**Input voltage is lower than 160 V (for 20 ms)**	Check the power supply voltage (measure the mains voltage); WD-HP Module faulty.	Cycle blocked	START ON/OFF RESET
EE6	**Input voltage is too high above 282 V (for 20 ms)**	Power supply voltage (measure the mains voltage); WD-HP Module faulty.	Cycle blocked	START ON/OFF RESET
EE7	**Fan not connected**	Fan-WD-HP module wiring faulty; Fan faulty; WD-HP module faulty.	Cycle blocked	START ON/OFF RESET
EE8	**If the temperature is above 109°C or below -5°C for 5 s near the fan power module.**	WD-HP module faulty;	Cycle blocked	START ON/OFF RESET
EEH	**Inconsistency between the status of the relay powering the compressor cooling fan and the sensing or sensing signal of the power supply line is disturbed**	Compressor fan-WD-HP module wiring faulty; Compressor fan faulty; WD-HP module faulty.	No action	START ON/OFF RESET
EEC	**Inconsistency between the status of the relay powering the compressor and the sensing or sensing signal of the power supply line is disturbed**	Compressor-WD-HP module wiring faulty; Compressor thermal cut-out, Compressor faulty; WD-HP module faulty.	No action	START ON/OFF RESET
EF1	**Drain filter clogged (drain phase too long)**	Drain filter clogged/dirty. Drain hose blocked/kinked/too high.	Warning displayed at the end of cycle	START/RESET
EF2	**Overdosing of detergent (too much foam during drain phases)**	Excessive detergent dosing; Drain hose kinked/blocked; Drain filter clogged/dirty.	Warning displayed after 5 attempts	RESET

Alarm	Description	Possible fault	Machine status/action	Reset
EF3	**Aqua control system intervention**	Water leaks onto base frame; Aqua control system faulty; Drain pump winding interruption/overheating.	Appliance drain	ON/OFF RESET
EF4	**Water fill pressure too low, no signal from flow meter and electronically controlled valve is open**	Tap closed, water fill pressure too low.	----------	RESET
EF5	**Unbalanced load**	Final spin phases skipped.	----------	START/RESET
EF6	**Reset**	If it continues, replace the main board.	No action to be taken	----------
EF7	**No drying filter**	Drying filter improperly positioned or missing; Filter sensor-main circuit board wiring faulty; Filter sensor faulty; Main circuit board faulty.	Pause	START ON/OFF RESET
EH1	**Appliance power supply frequency out of 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
EHC	**WD line relay faulty (inconsistency between relay status and relay sensing)**	Main circuit board faulty.	Safety drain cycle Cycle stops with door open	ON/OFF RESET
EHD	**WD line relay sensing faulty**	Main circuit board faulty.	Cycle stops with door locked	RESET
EHE	**Inconsistency between FCV relay (in the main board) and safety "sensing" circuit**	Faulty wiring; 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

15 OPERATING DIAGRAM



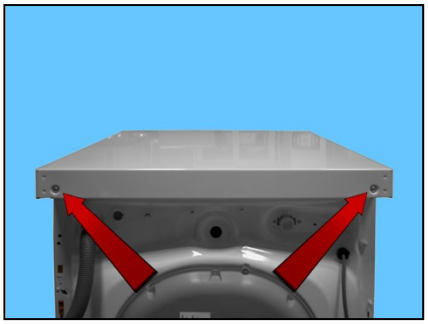
15.1 Key to diagram

Appliance electrical components		PCB components	
1.	Noise filter	DRAIN_YTY	Drain pump Triac
2.	Main electronic circuit board	DOOR_CLOSE_TY	Door interlock Triac
3.	Door safety interlock	REC PUMP_TY	Circulation pump Triac switch
4.	Electronic pressure switch	PWELT_TY	Pre-wash solenoid Triac
5.	NTC (washing)	WELV_TY	Wash solenoid Triac
6.	Flow meter sensor	COND_TY	Condensation solenoid Triac
7.	Pre-wash solenoid valve	HELT_TY	Hot water solenoid triac
8.	Wash solenoid valve	RL1	Heating element relay
9.	Filter sensor	RL2	Heating element relay
10.	Heating element		
11.	UIMC board		
12.	Triple-phase motor		
13.	Aqua control sensor		
14.	Drainage pump		
15.	Display board		
16.	WD-HP module		
17.	Capillary sensor		
18.	Fan motor		
19.	Compressor fan		
20.	Humidity sensor		
21.	Drying temperature sensor		
22.	Compressor		
23.	Start-up capacitor (compressor)		

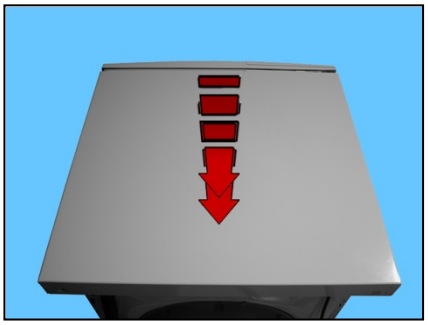
16 WM ACCESSIBILITY

16.1 Worktop

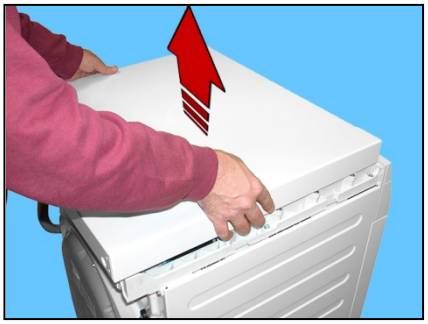
Loosen the screws that fix it to the rear.



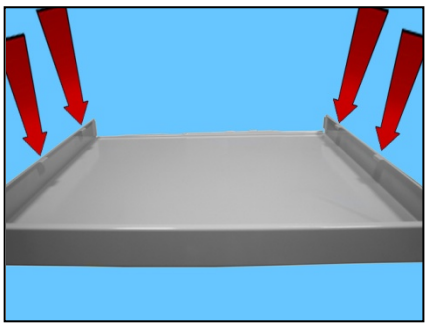
Pull it out towards the back until it is locked in place.



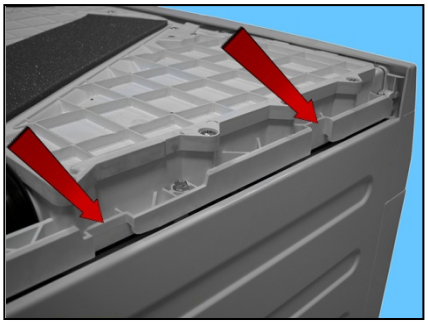
Lift it to remove it.



When reassembling the sheet metal worktop, make sure the fastening guides (indicated by the arrows)



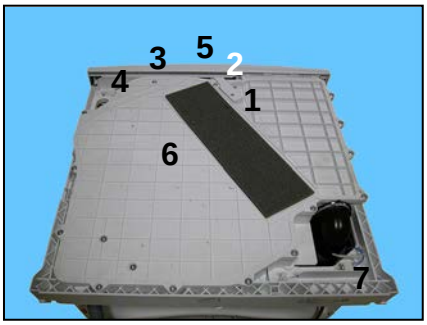
are inserted in the purpose-provided seats (indicated by the arrows) in the upper WD-HP module.



Tighten the screws at a torque of 3 Nm.

16.2 From the worktop, you can access

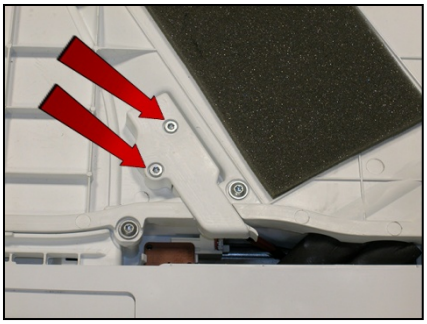
1. Humidity sensor NTC sensor
2. Filter presence sensor
3. Control panel
4. Assembly of display board/light diffuser
5. NTC probe (drying)
6. Upper WD-HP housing
7. Complete housing



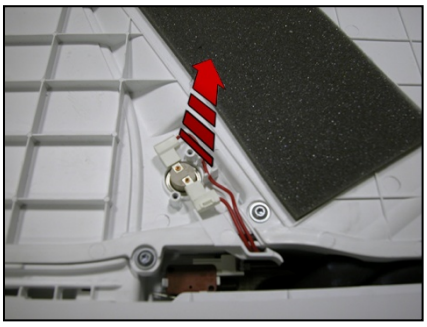
16.2.1 Humidity sensor NTC sensor

Remove the worktop (see relevant paragraph).

Loosen the two screws that secure the protection in place.



Raise it from its position.



Disconnect the connectors.

When replacing or removing the seat from its seat, it is advisable to replace the seal too (indicated by the arrow).

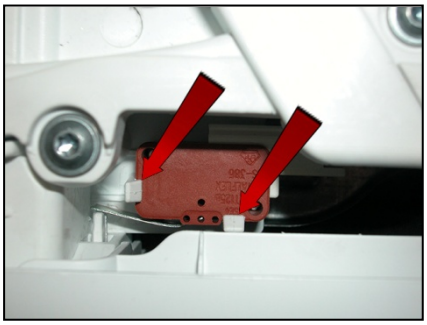
When reassembling, repeat these steps in the reverse order.

16.2.2 Filter presence sensor

Remove the worktop (see relevant paragraph).

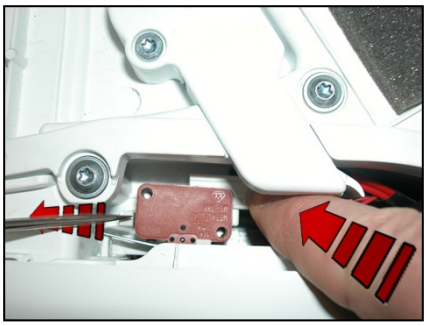
To remove it from its position, unhook the two tabs that secure it in place.

Take care not to break them.

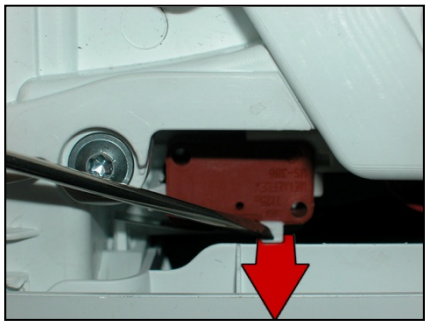


Push the connector down.

At the same time, move the tab with a screwdriver.
So that the sensor is raised and does not allow the tab to lock it in place.



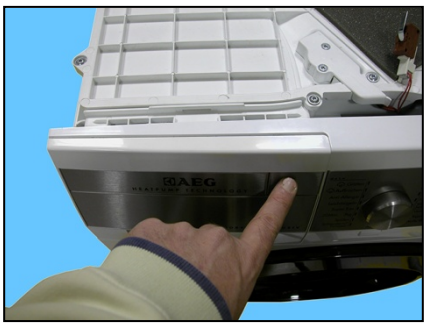
Move the other tab and remove it from its position.



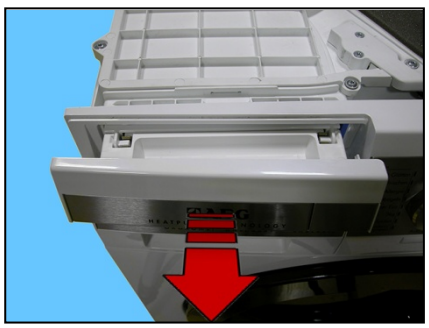
Slide off the connector.

Before repositioning the filter presence filter in its seat.

Push the button.



Remove the filter in order to position the sensor correctly.

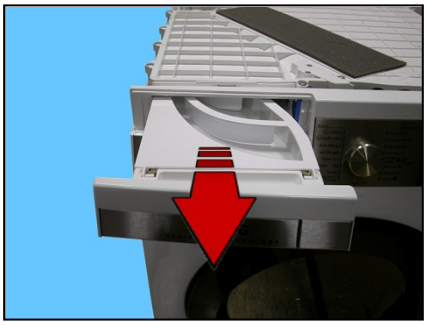


When reassembling, repeat these steps in the reverse order.

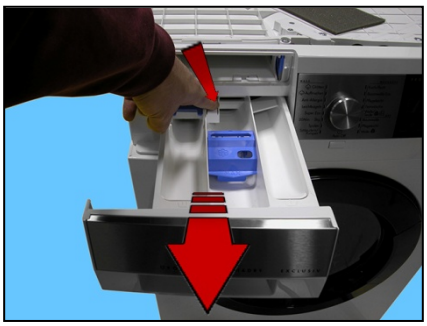
16.2.3 Control panel

Remove the worktop (see relevant paragraph).

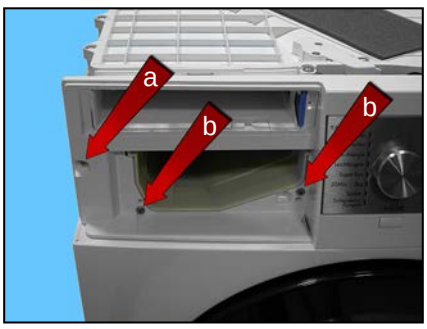
Push the button.



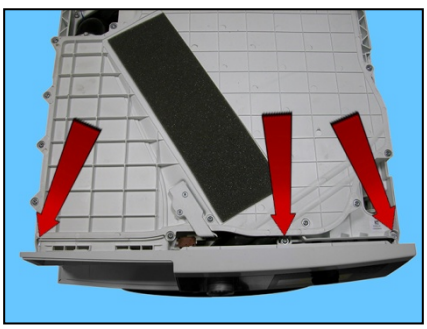
Remove the filter.



Pull out the detergent dispenser while pressing the tab that locks it in place.



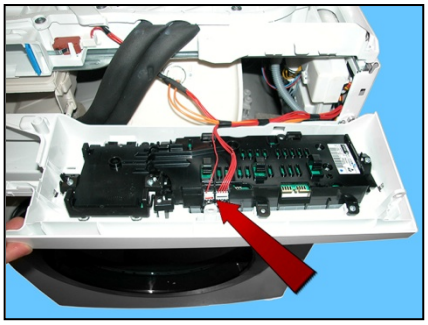
Loosen the screw that secures it to the cabinet (a).
Remove the two screws securing it to the detergent dispenser (b).



Loosen the two side screws that secure it to the cabinet.
Loosen the central screw that secures it to the upper WD-HP housing.

Raise the right-hand side of the control panel while at the same time removing it from its position.

If the left-hand side proves difficult to remove, lift the detergent dispenser and pull out the control panel.

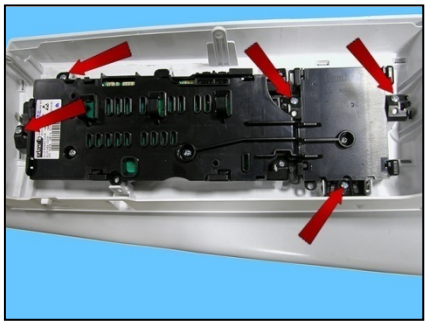


Pull out the display board connectors.

When reassembling, repeat these steps in the reverse order.

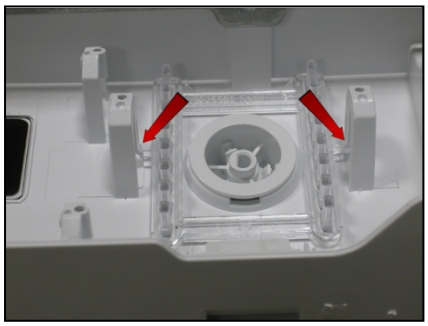
16.2.4 Assembly of display board/light diffuser

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



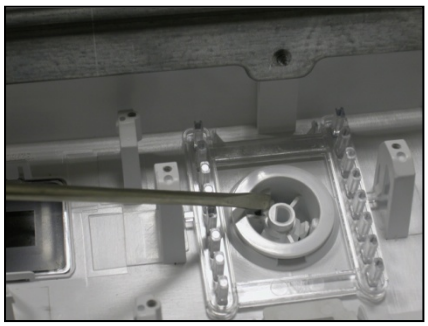
Remove the screws and release the hooks which secure the board assembly to the control panel.

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



- Selector light diffuser

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



When reassembling the display board assembly and the control panel,

Remove the dial from the dial cover.
Release the hooks that fasten them together, and fasten the whole to the control panel.

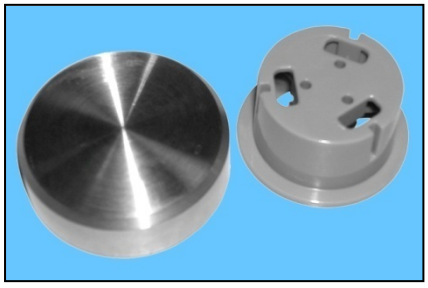
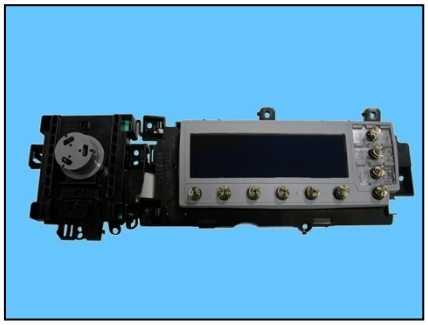


Illustration of the dial and the dial cover.

Thread the dial onto the selector pin.



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

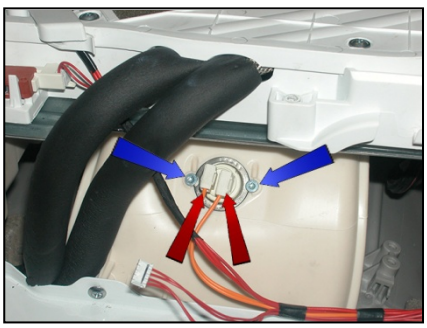
Insert the dial cover.

16.2.5 NTC probe (drying)

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

Pull out the connectors (red arrows).

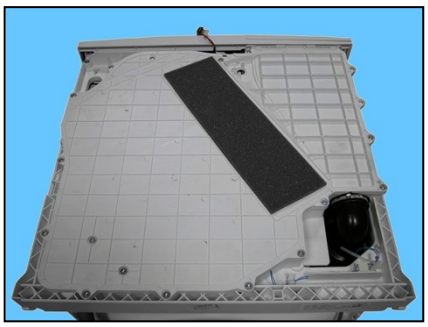
Loosen the screws (Torx T20) that secure it to the duct (blue arrows).



Replace the seal too.

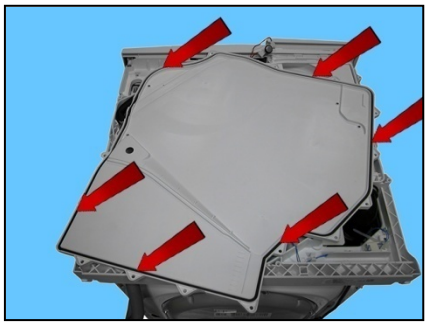
16.2.6 Upper WD-HP housing

Remove the worktop (see relevant paragraph).
Remove the humidity sensor NTC probe (see relevant paragraph).



Loosen the 18 screws that secure it to the rear.

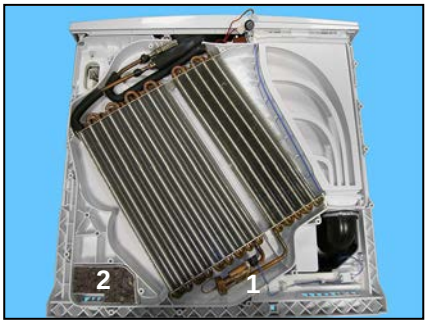
Lift the cover from the rear.



When reassembling, make sure the seal is in its seat and in perfect condition.
If it is damaged/warped, replace it.

Tighten the screws at a torque of 3 Nm.

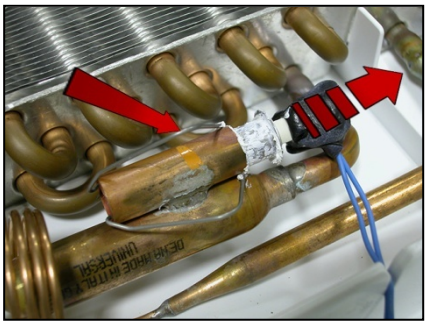
16.2.6.1 From the upper WD-HP housing, you can access



1. Capillary NTC sensor
2. Soundproofing filter

16.2.6.1.1 Capillary NTC sensor

Remove the worktop (see relevant paragraph).
Remove the humidity sensor NTC probe (see relevant paragraph).
Remove the upper WD-HP housing (see relevant paragraph).



Widen the spring that secures it to its seat.
Take it out of its seat.

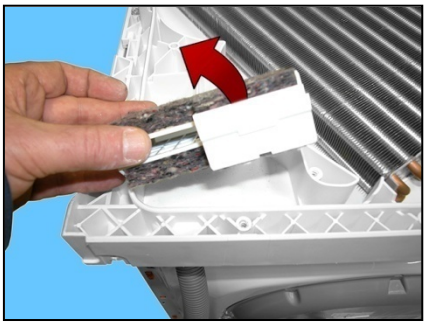
Remove the wiring from the clips and pull out the connector.

NTC probe.

When reassembling, repeat these steps in the reverse order and make sure the sensor is positioned correctly in its seat.

16.2.6.1.2 Soundproofing filter

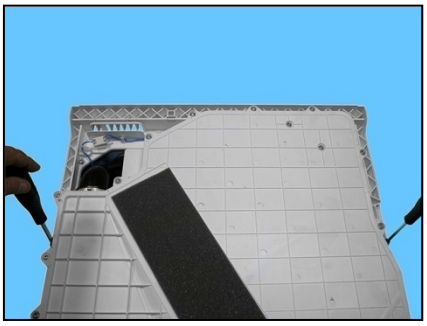
Simply lift it to remove it from its seat.



16.2.7 Complete WD-HP housing

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

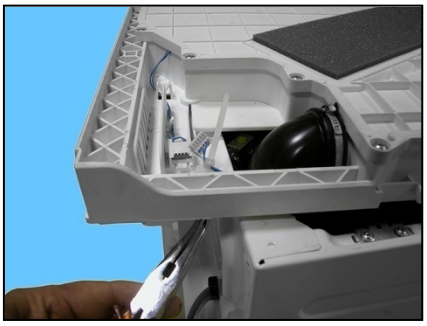
Loosen the two screws securing the WD-HP housing to the cabinet sides.



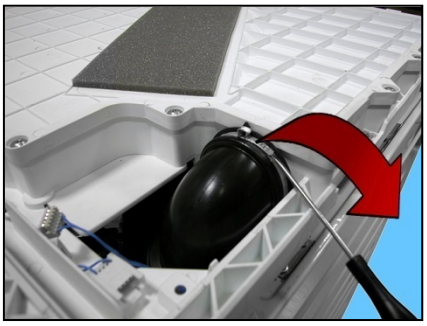
Loosen the two screws securing the WD-HP housing to the back of the cabinet.

Pull the connector out of the NTC probe.

Move the WD-HP housing back to allow the clamp to be removed with a pair of pliers.



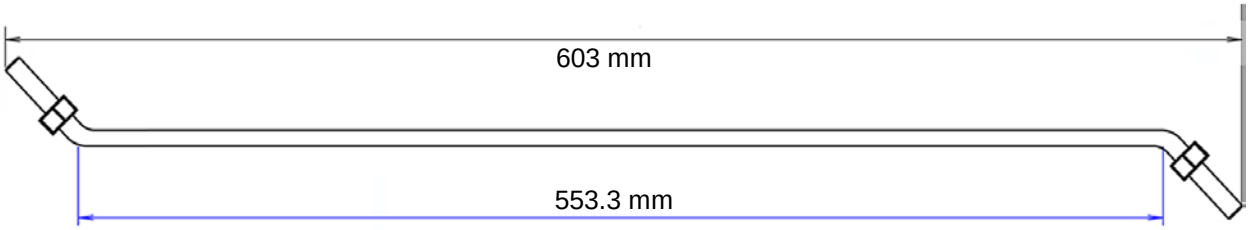
Break/open the clamp securing the pipe to the WD-HP housing.

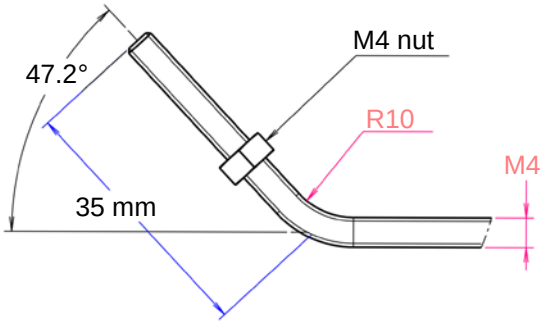


When re-assembling, replace the clamp with a new one measuring 65.5 mm in diameter.

To access the components situated beneath the complete WD-HP housing, you will have to lift it.

To lift it, use a support comprising a threaded 4 mm diameter bar, two nuts (all this can be found in a standard hardware shop).
The dimensions of the support are provided below.





16.2.7.1 Housing positioning

- Right side

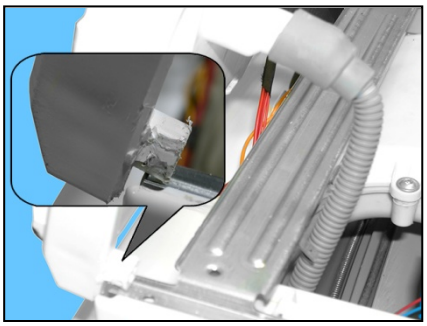
Lift the WD-HP housing and insert it in the duct placed above the detergent dispenser.

Enlarged detail where the housing should be placed above the detergent dispenser.

- Left side

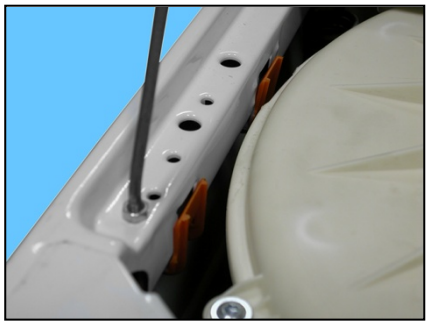
Do not pull out the condensation drain pipe.

Position the WD-HP housing up against the control crosspiece stop (see enlarged figure).



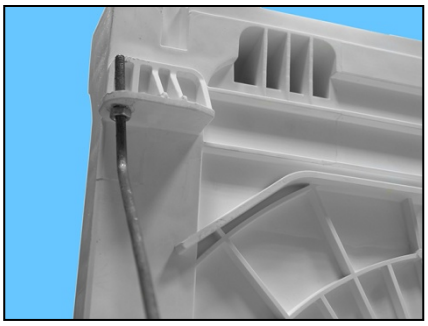
Take the support.

Insert one end in the first hole in the left side of the appliance, see figure opposite.



Insert the other end in the hole in the screw securing it to the top.

You can adjust the angle of inclination of the complete WD-HP housing by loosening/tightening the nuts.

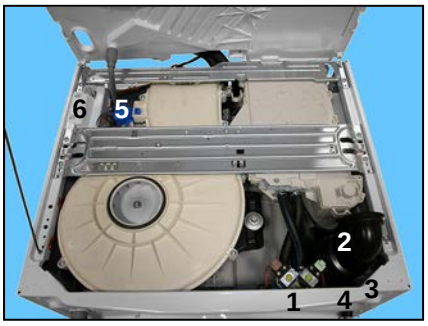


Lifted WD-HP housing to access the components situated beneath it.

Make sure it doesn’t slide off.

16.3 From the complete WD-HP housing, you can access

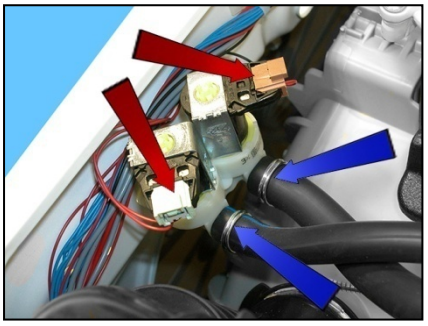
1. Solenoid valve
2. Hot air pipe
3. Noise filter
4. Power supply cabling sheath
5. Analogue pressure switch
6. WD-HP module



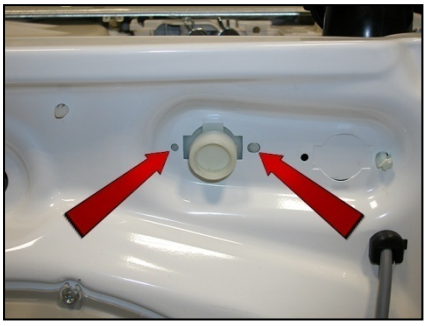
16.3.1 Solenoid valve

Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Lift the complete WD-HP housing (see relevant paragraph).

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



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

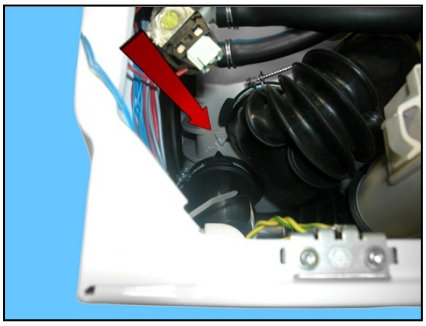


When reassembling, repeat these steps in the reverse order.

16.3.2 Hot air pipe

Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Lift the complete WD-HP housing (see relevant paragraph).

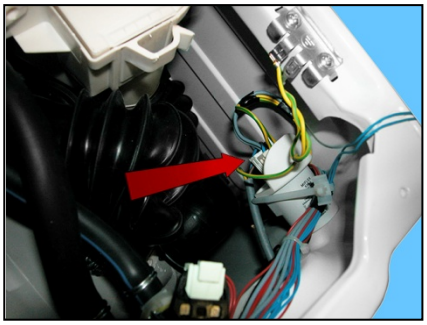
Unfasten the screw in the clamp that fixes the Hot air pipe to the tray, and remove it from its seat.



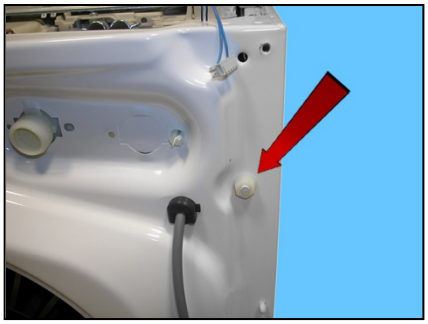
When reassembling, make sure the two references are aligned.

16.3.3 Anti-disturbance filter

Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Lift the complete WD-HP housing (see relevant paragraph).



Remove the connectors.



Loosen the nut securing it to the rear of the cabinet.

When reassembling, repeat these steps in the reverse order.

16.3.4 Power supply cabling sheath

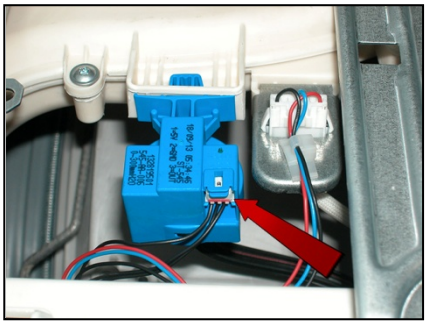
Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Lift the complete WD-HP housing (see relevant paragraph).

Using a pair of pliers, squeeze it and pull it out of the appliance.

N.B. Every time the cabling sheath is removed, you will need to replace it with a new one.

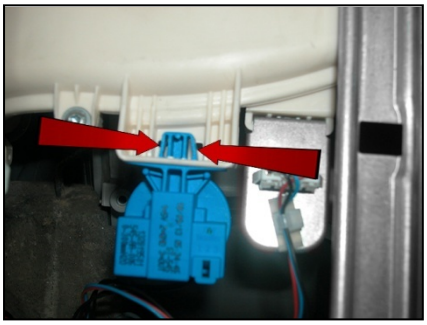
16.3.5 Analogue pressure switch

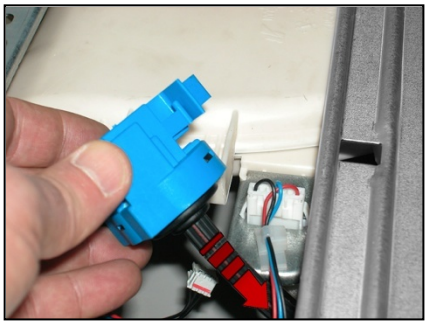
Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Lift the complete WD-HP housing (see relevant paragraph).



Remove the connector.

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



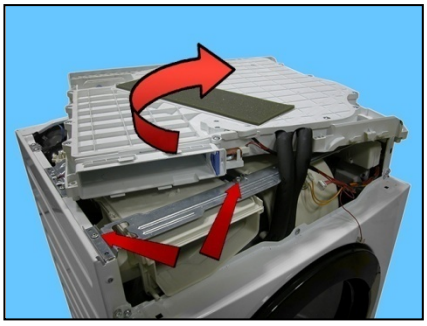


Pull out the small tube which connects it to the pressure chamber.

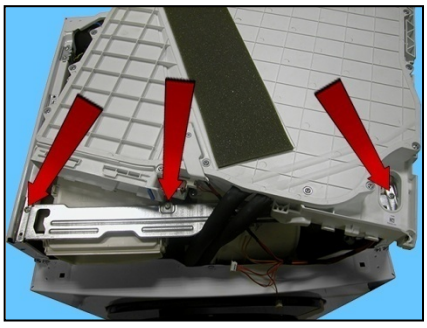
When reassembling, repeat these steps in the reverse order.

16.3.6 WD-HP module

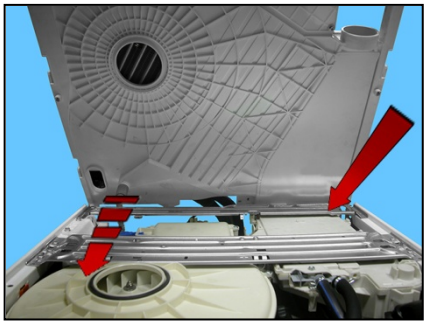
Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Loosen the two screws securing the complete WD-HP housing to the cabinet sides (see relevant paragraph).
Pull out the hot air pipe (see related paragraph).



Lift the complete WD-HP housing, turn it clockwise to access the screws:
that secure the control crosspiece to the sides and to the detergent dispenser
(indicated by the arrows).



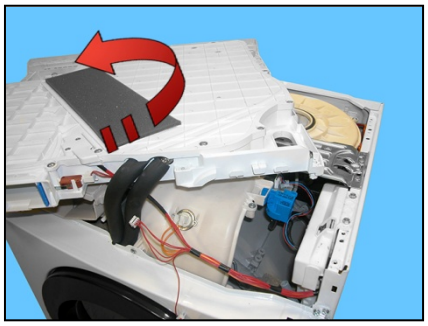
Unfasten the 3 screws.



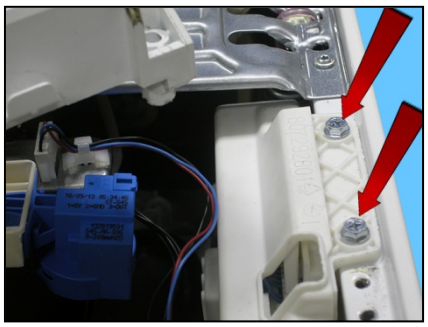
Lift the complete WD-HP housing so as to remove the control crosspiece.
Pull out the condensation drain pipe.

Make sure the complete WD-HP housing doesn't slip off the supports,
causing damage.

When repositioning the complete WD-HP housing on top of the appliance, turn it anti-clockwise.

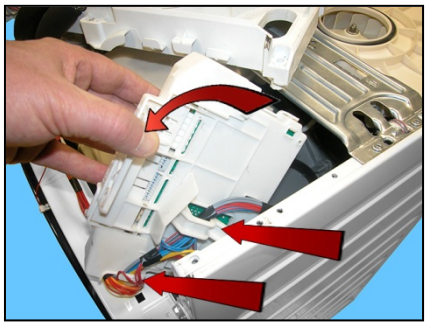


Loosen the two screws that secure the WD-HP Module to the side panel.

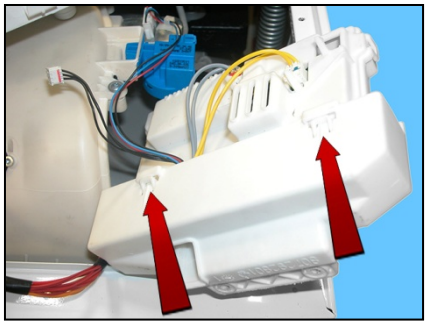


Remove the module from its position, turning it anti-clockwise.

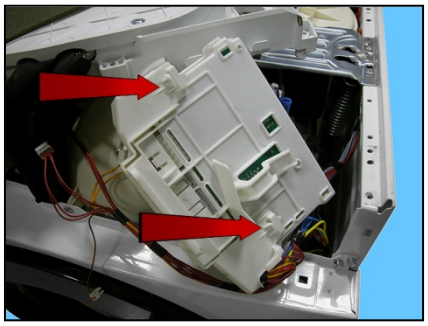
Remove the wiring from the hooks indicated by the arrows.



Disconnect the hooks fixing the connector protection on one side.



Then on the other.



Remove the connectors protection.

Disconnect.

When reassembling, repeat these steps in the reverse order.

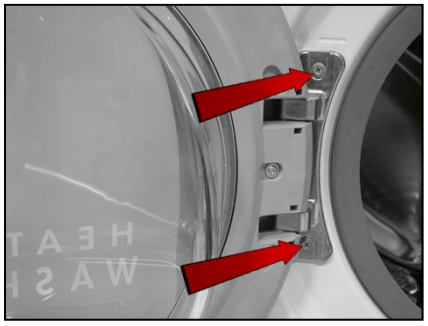
16.4 Accessing the front part

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

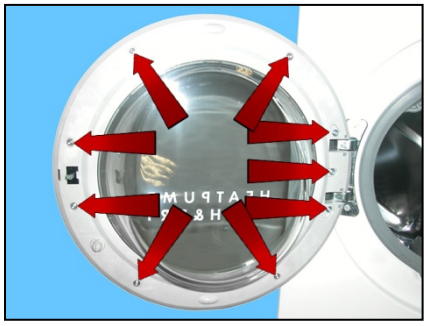
1. Door hinge – Door
2. Door safety interlock
3. Blade
4. Front panel

16.4.1 Door hinge – Door

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



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

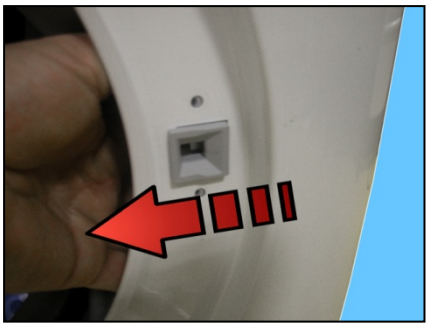


16.4.2 Door safety interlock

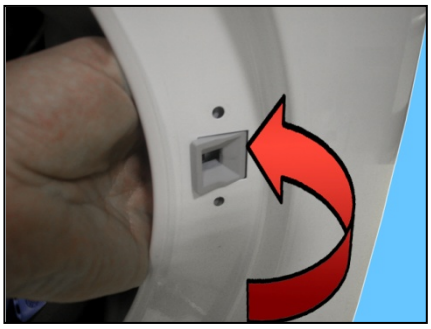
Remove the iron ring securing the bellow seal to the unit.
Remove the part of the bellow seal concerned from the unit.

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

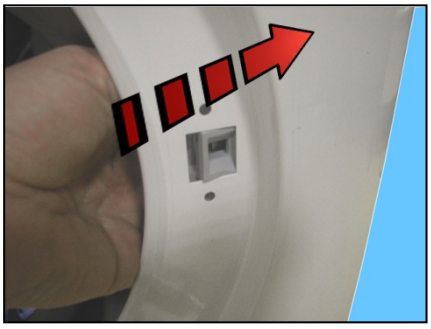
Take the device and move it to the left.



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

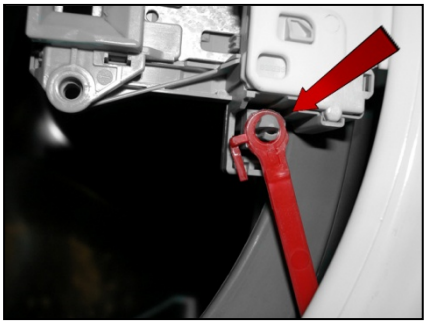


Pull it out towards the right and remove it.



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

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

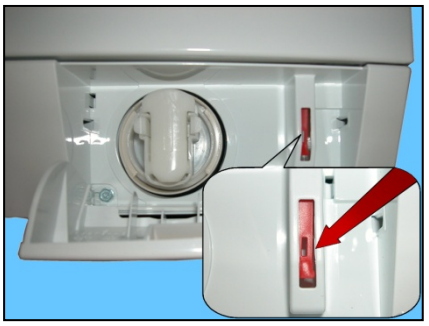


Pull out the wiring protection from the door safety interlock.
Disconnect the connector.

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

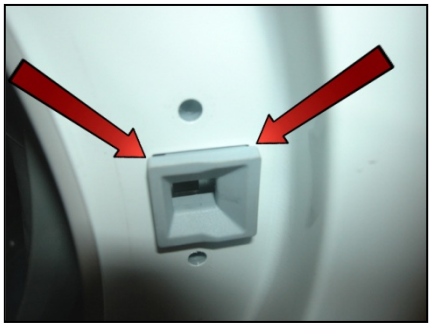
Make sure the small rod is correctly positioned with respect to the door safety interlock.

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



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

Tighten the screws at a torque of 2.5 Nm.



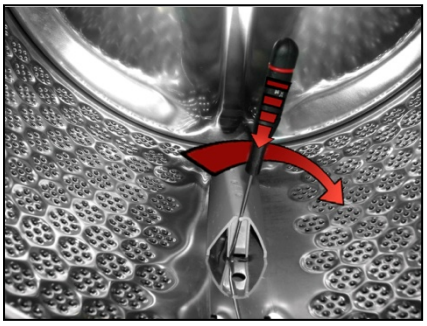
16.4.3 Blade

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

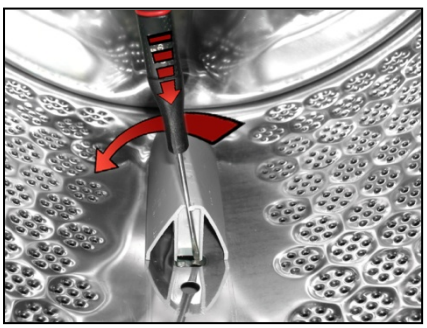
To remove it from the drum:

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

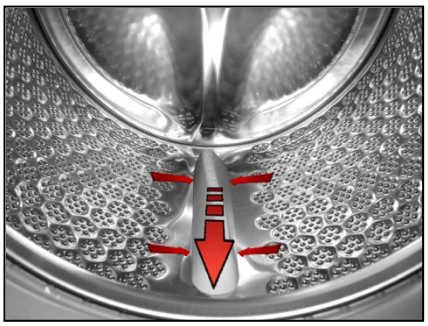
Place the screwdriver with the handle tilted towards the right;
Push the left-hand tab downwards.



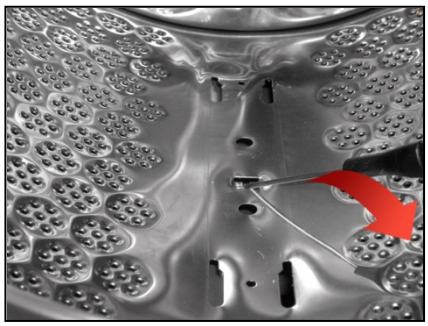
Place the screwdriver with the handle tilted towards the left.
Push the right-hand tab down.



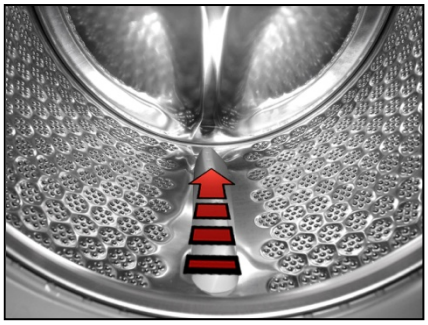
When the two tabs are down.
Move the blade towards the front of the drum, and if necessary squash the blade at the two ends.



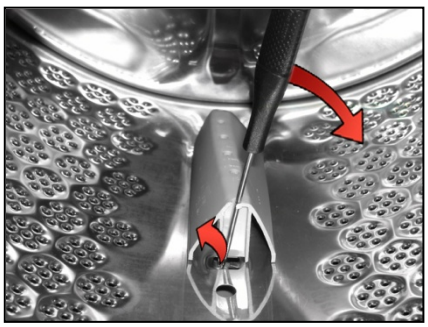
Before securing the new blade.
Insert a screwdriver beneath the tabs and raise them a little.



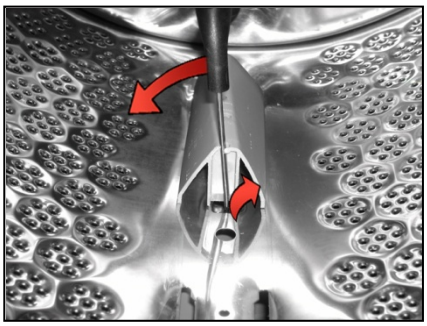
Position the new blade inside the drum guides.
Push it towards the back.



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



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



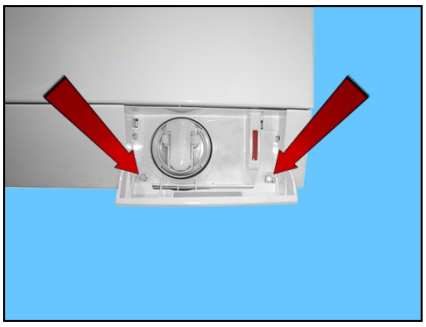
With the tabs raised, the blade is secured to the drum.

16.4.4 Front panel

Remove the sheet metal 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.

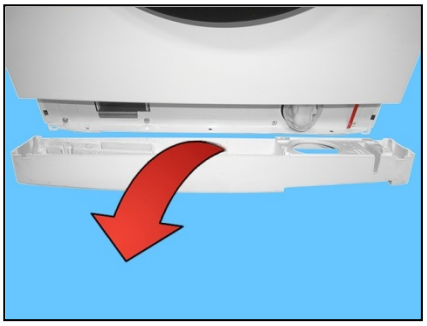
Open the filter flap and remove it if necessary.

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

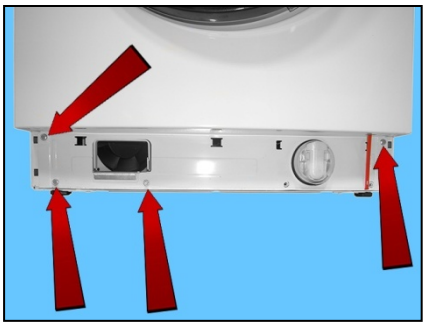


Release the two hooks that secure it to the front (indicated by the arrows).

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.

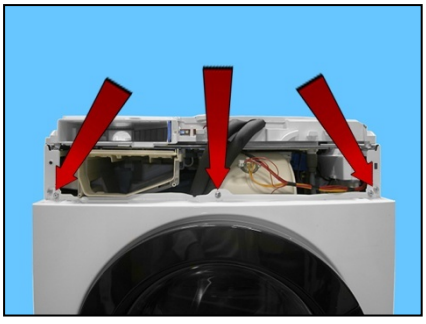


Loosen the screws that secure the lower part of the front panel to the cabinet casing.

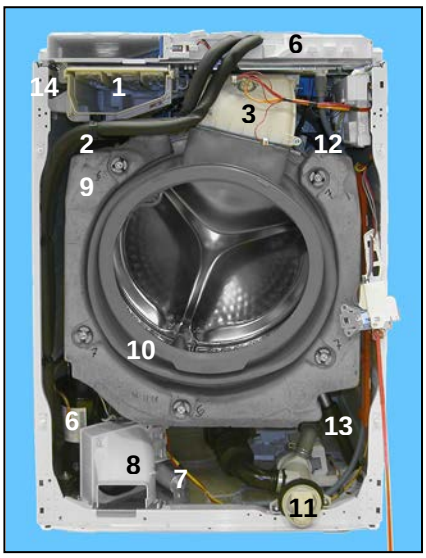


Loosen the central screw that secures the duct to the front panel.
Remove the four screws which secure the front panel to the sides.

Remove the front panel.



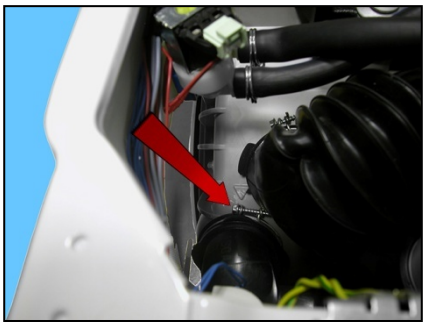
16.5 From the front panel/you can access



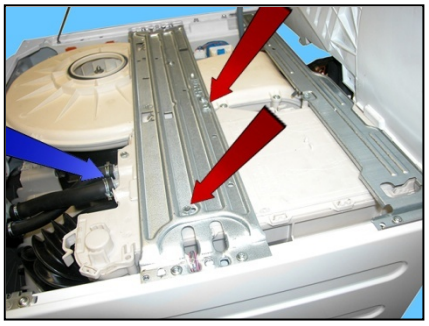
1. Detergent dispenser
2. Detergent fill pipe
3. Drying duct
4. Power fan
5. Upper counterweight
6. Complete WD-HP housing assembly/Compressor
7. Compressor Start-up capacitor
8. Compressor fan assembly
9. Front counterweight
10. Bellow seal
11. Drain water circuit
12. Condensation drain pipe
13. Front right shock absorber
14. Tub suspension springs
15. Shock absorber pin

16.5.1 Detergent dispenser

Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the front panel (see relevant paragraph).
Lift the complete WD-HP housing (see relevant paragraph).



Loosen the screw of the clamp securing the detergent loading pipe to the tub.
Lift the pipe out of its seat.



Remove the pipes that connect it to the solenoid valves (blue arrows).

Remove the the two screws securing it to the central crosspiece (red arrows).

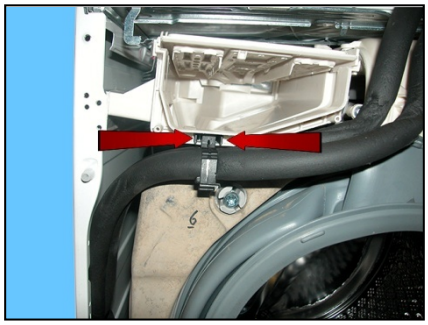
Attentions

If you remove this screw, the detergent dispenser is free and no longer has any anchor point, and consequently neither has the right-hand side of the WD-HP housing.
Hold the complete WD-HP housing with one hand.

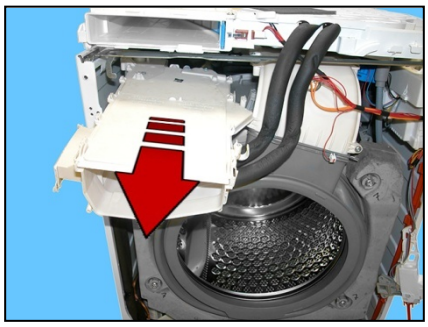
Remove the screw which secures the detergent dispenser to the control crosspiece.

Remove the support and lower the complete WD-HP housing in its original position.

Tighten the two fins (indicated by the arrows), pull out the pipe support positioned beneath the detergent dispenser.



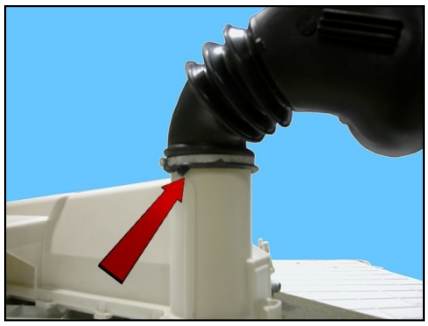
Pull out the detergent dispenser, taking care of any interference with other components.
If necessary, lower the washing unit.



When reassembling, repeat these steps in the reverse order.

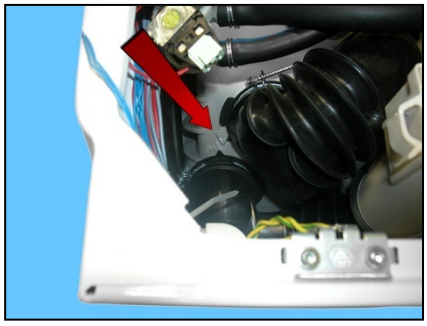
16.5.2 Detergent fill pipe

Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the front panel (see relevant paragraph).
Lift the complete WD-HP housing (see relevant paragraph).
Remove the detergent dispenser (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 **Ø** 65.5 mm.
When introducing the pipe into the dispenser, make sure the two references are aligned.



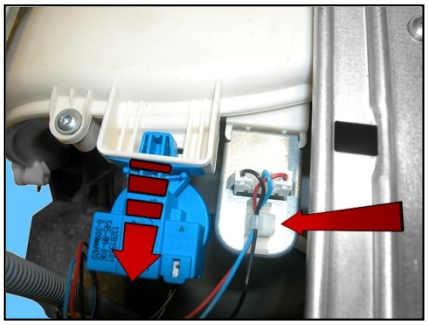
The references between the detergent loading pipe and tub must be aligned.

When reassembling, repeat these steps in the reverse order.

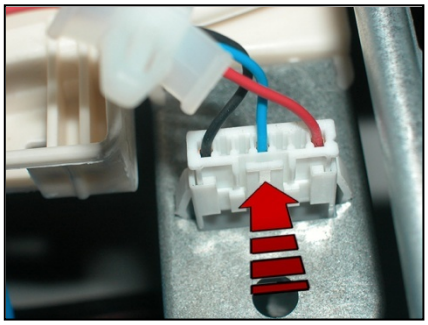
16.5.3 Conduit

Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the front panel (see relevant paragraph).
Lift the complete WD-HP housing (see relevant paragraph).

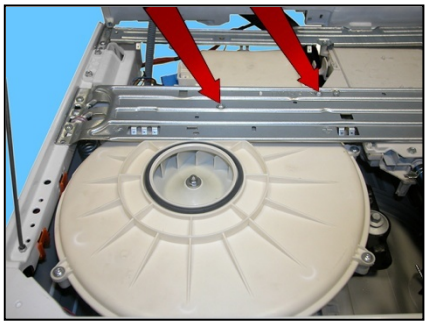
Detach and remove the electronic pressure switch from its seat.
Remove the clamp which secures the power fan wiring to the bracket.



To pull out the connect, press the fin indicated by the arrow.

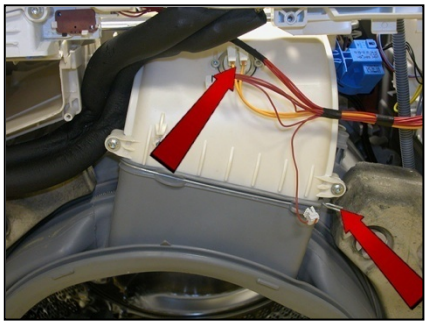


Unfasten the two screws securing it to the central crosspiece.



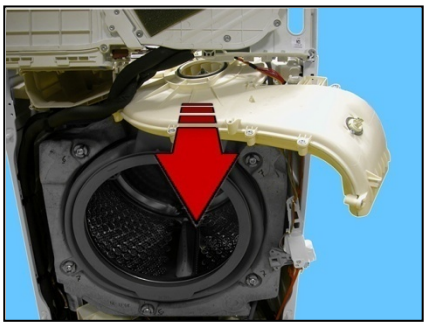
Pull it out from the bellow seal.

Disconnect the NTC probe connectors.

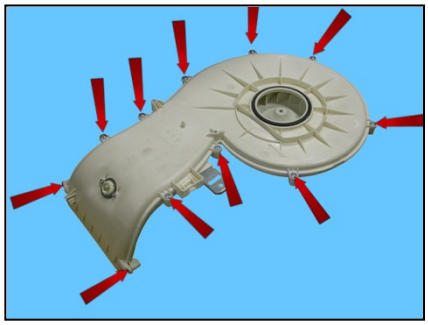


Lower the washing unit.
Introduce the duct beneath the detergent dispenser (indicated by the arrow).
Turn it anti-clockwise and push it towards the front of the appliance.

Remove it from the appliance.



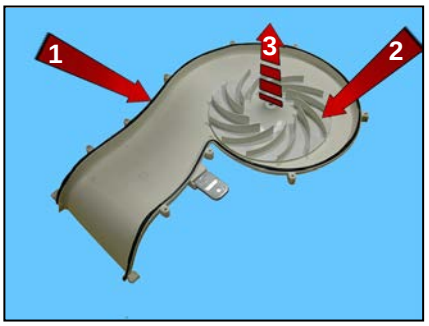
To open the duct, loosen all 11 screws.



When opening the duct, take care not to damage the seal (1), and if it comes out of its seat, reposition it.

16.5.3.1 Lower duct casing

The fan (2) is inside it: remove it.
Loosen the nut that secures the power fan shaft and remove it (3).

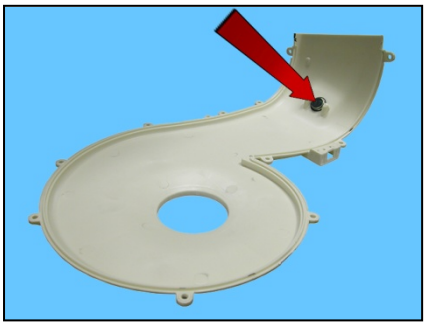


Fan

Once the fan has been removed, there is a washer in the centre of the screw immersed in grease Code 5026 24 16-00/6.
When replacing the power fan, make sure it is in correctly in place.

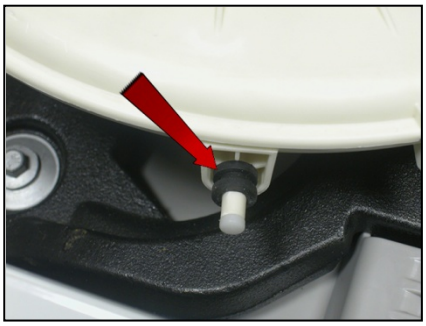
16.5.3.2 Upper duct casing

The arrow indicates the NTC probe.

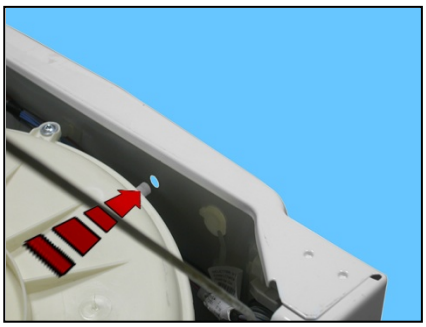


When reassembling, repeat these steps in the reverse order.

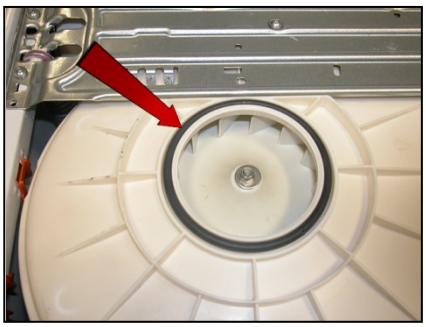
Make sure the rubber pad is on the pin.



Insert the pin in the hole in the back panel.



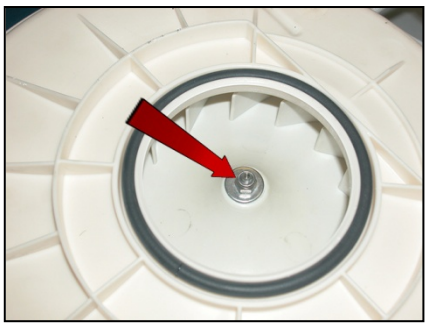
Make sure the seal is intact and positioned correctly in its seat. If warped, replace it.



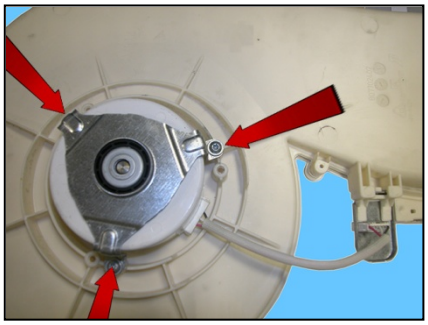
16.5.4 Power fan

Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the front panel (see relevant paragraph).
Lift the complete WD-HP housing (see relevant paragraph).
Remove the duct (see relevant paragraph).

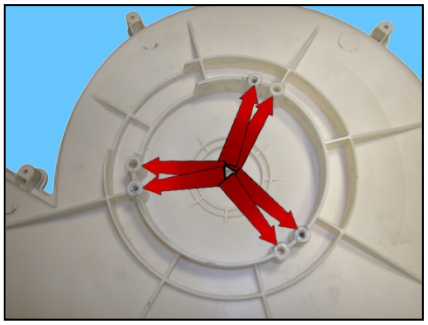
Loosen the nut that secures the fan to the power fan shaft.



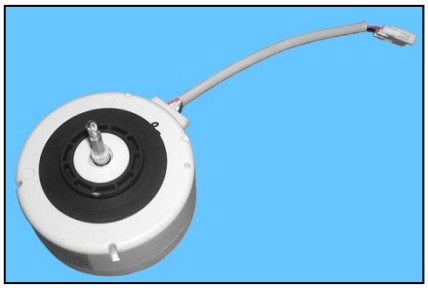
Overturn the duct, loosen the three screws that secure the power fan in place.



Once you have removed the motor fan, you will see that the duct features six slots, to secure the power fan, if three of the slots are damaged, you can use the other three.



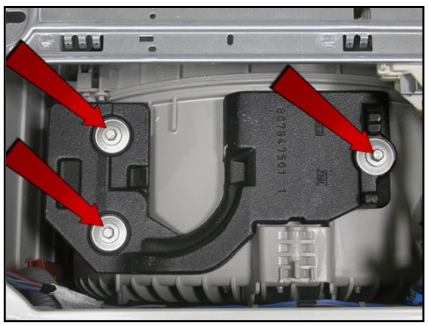
Power fan



16.5.5 Upper counterweight

Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the front panel (see relevant paragraph).
Lift the complete WD-HP housing (see relevant paragraph).
Remove the duct (see relevant paragraph).

Remove the three screws that secure it to the welded tub.

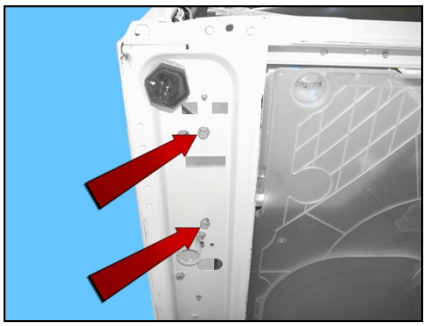


Upper counterweight

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

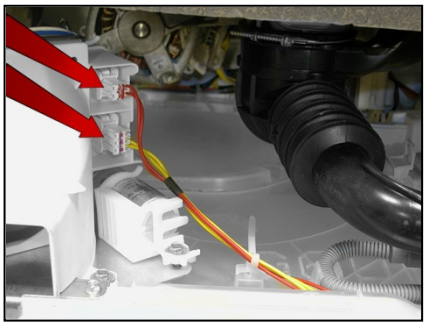
16.5.6 Complete WD-HP housing assembly/Compressor

Remove the sheet metal worktop (see relevant paragraph)
Remove the control panel (see relevant paragraph)
Remove the front panel (see relevant paragraph)

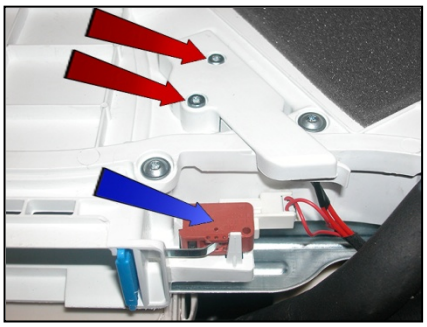


Place the appliance on its back.
Loosen the two screws securing the compressor support bracket to the crosspiece.

Return the appliance to the upright position.

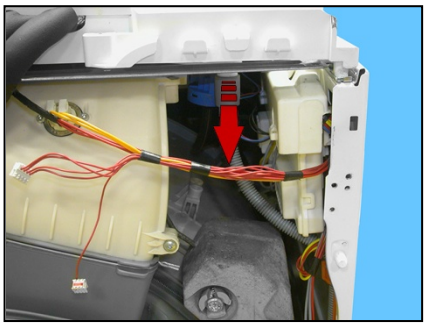


Disconnect the connectors which power the power fan and compressor.



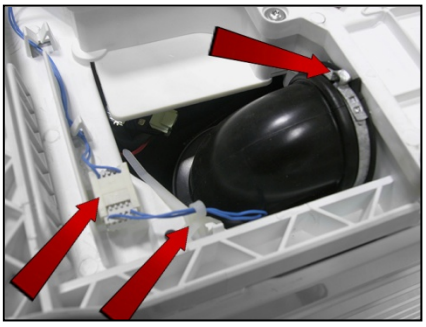
Loosen the two screws (red arrows) securing the cover of the NTC probe (humidity) and take it out of its seat.

Remove the filter sensor from its seat (blue arrow).



Pull out the condensation drain pipe.

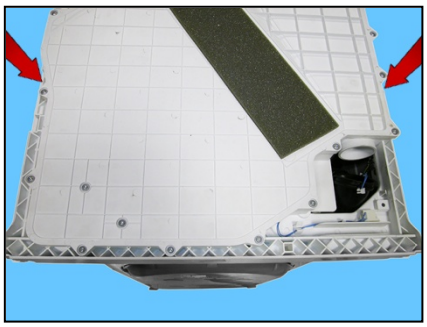
Do not remove it from the pipe support along the front panel, because since it is connected to the pump body, it may drain off the drain water.



Remove: the clamp, the connector

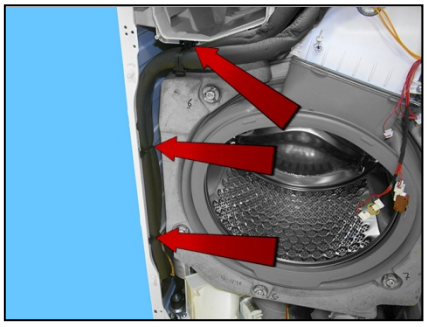
Break the clamp on the hot air bellow and remove it from its seat.

Loosen the two screws securing the complete housing to the cabinet sides. (The arrows indicate the position of the screws, because they are not visible in the photo).

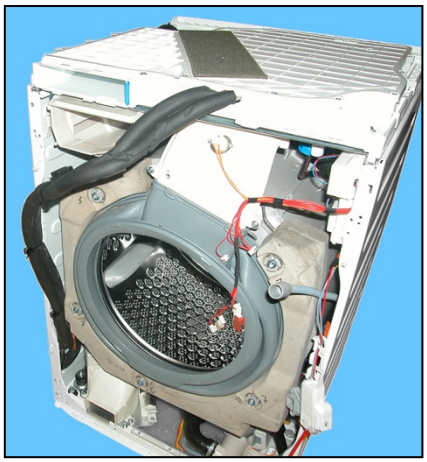


Detach the clamps that secure the pipes to the detergent dispenser and to the appliance side.

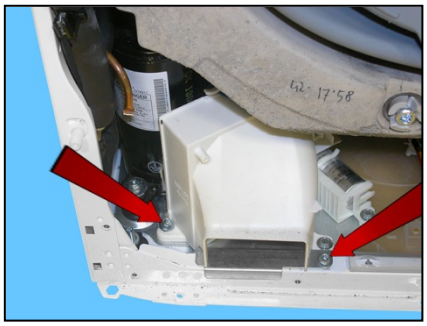
The clamps that secure the pipes to the appliance side cannot be re-used, so they will need to be replaced with identical ones with the same characteristics.



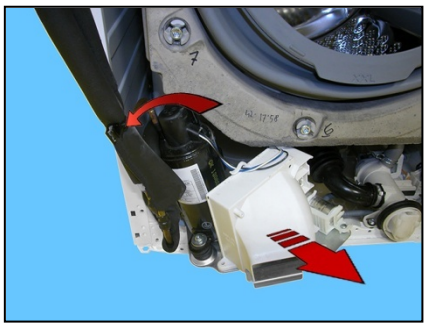
Appliance with the HP-WD piping removed.



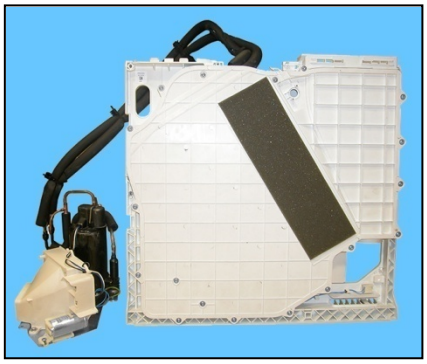
Loosen the two screws, one securing the bracket to the crosspiece and the other securing the fan assembly and the bracket to the crosspiece.



Tilt the compressor in the direction shown by the arrow, lift and move the washing unit to the right and remove the whole assembly: Compressor, fan and start-up capacitor.

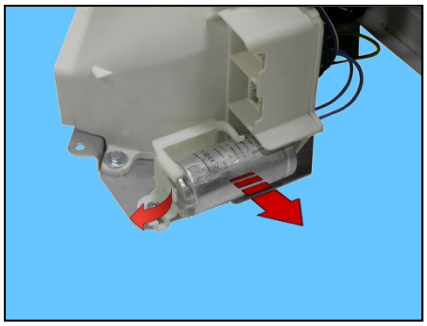


Housing assembly/Compressor/Fan/Start-up Capacitor.

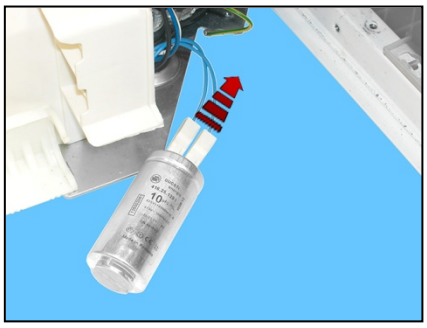


16.5.6.1 Condenser

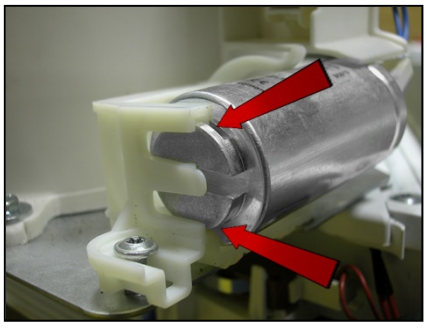
Lift the hook securing it in place and take it out of its seat.



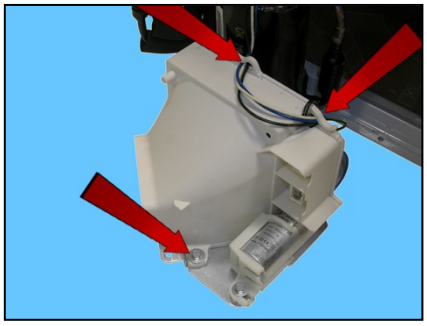
Remove the connectors.



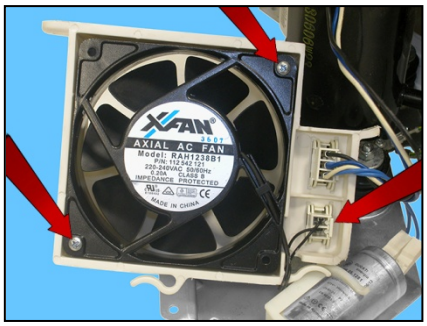
When repositioning the capacitor in its seat, make sure it is introduced correctly in its seat.



16.5.6.2 Compressor fan



Remove the wiring from the hooks.
Loosen the screw that secures it to the compressor support bracket.



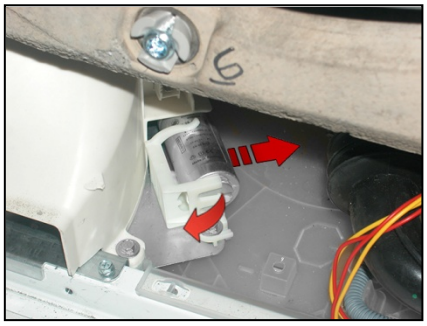
Loosen the two screws that secure it to the conveyor.

Pull out the connector by pressing the two fins that secure it in its seat.
Remove the wiring from the hook.

When reassembling, repeat these steps in the reverse order.

16.5.7 Compressor Start-up capacitor

Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the front panel (see relevant paragraph).



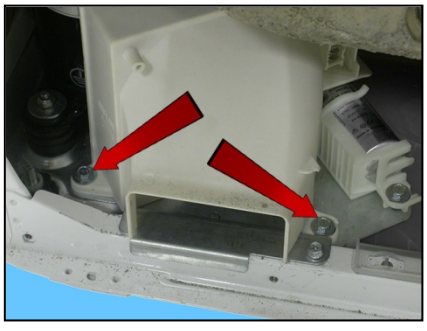
Lift the hook securing it in place and take it out of its seat.

Remove the connectors.

When reassembling, repeat these steps in the reverse order.

16.5.8 Compressor fan assembly

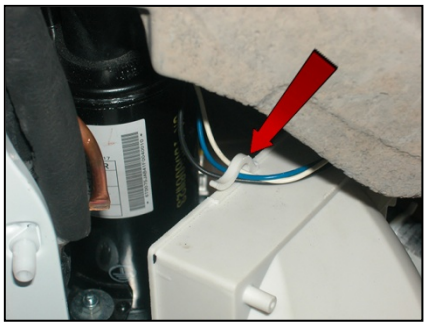
Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the front panel (see relevant paragraph).



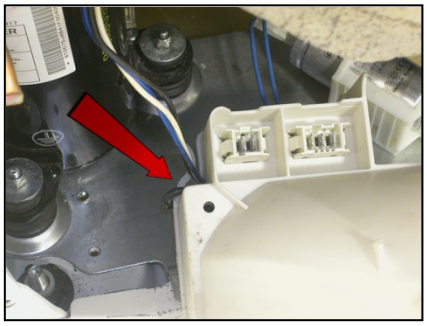
Remove the two screws that secure it to the bracket.

When reassembling, repeat these steps in the reverse order.

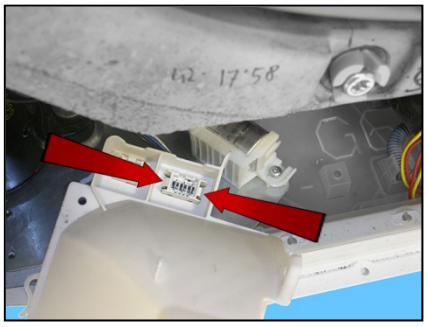
Remove the wiring from the hook (indicated by the arrow) on one side of the fan air conveyor.



Then on the other.



Press the fins that secure the connector in place and remove it from its seat.



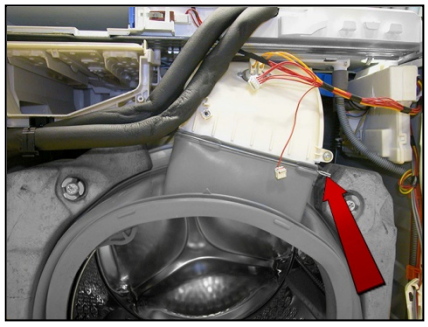
Loosen the two screws that secure it to the conveyor.

Pull out the connector by pressing the two fins that secure it in its seat.
Remove the wiring from the hook.

When reassembling, repeat these steps in the reverse order.

16.5.9 Front counterweight

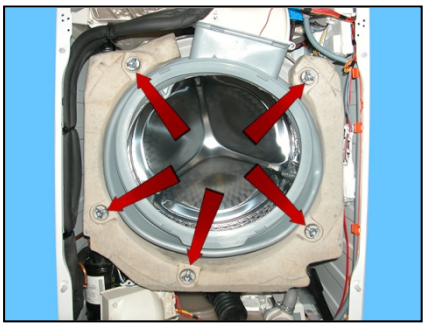
Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Loosen the screws securing the door safety interlock (see related paragraph).
Remove the front panel (see relevant paragraph).



Release the spring that secures the bellow seal to the duct.

Remove the seal.

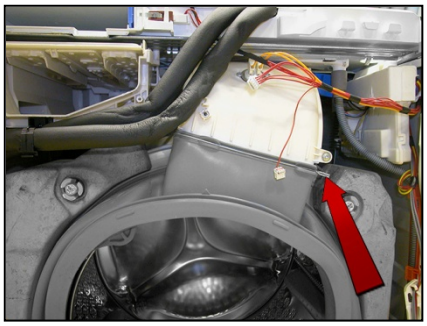
Unfasten the five screws securing the front counterweight to the welded tub assembly.



When tightening the screws, take care:
If the welded tub assembly is new, tighten the screws at a torque of 15 Nm.
If the welded tub assembly is not new, align with the existing thread and tighten the screws at a torque of 10–12 Nm.

16.5.10 Bellow seal

Remove the sheet metal 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).



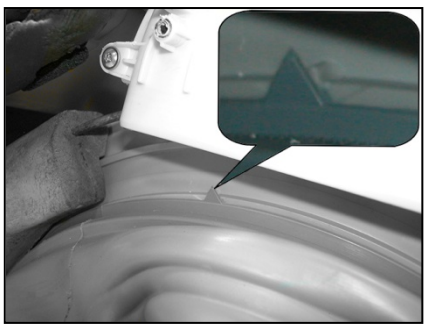
Release the spring that secures the bellow seal to the conduit.

Remove the seal.

Take the bellow seal out of the welded tub.
(take care as the seal is secured to the tub by a snap ring).

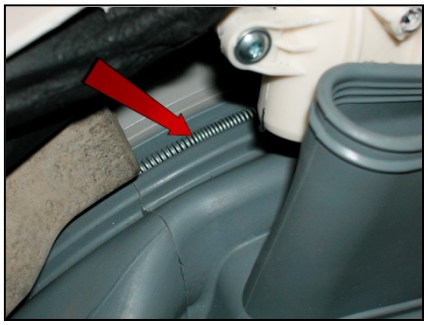
Before repositioning the bellow seal onto the tub, lubricate the welded tub seat which will house the seal with some liquid soap.

Use liquid soap to lubricate the seal seat too (indicated by the dotted red circle), which will be inserted in the welded tub seat.



Position the bellow seal reference on the reference mark printed on the tub.

Position the snap ring in its seat.



Position the clamp around the seat which will house the conduit (close it) and lubricate the inside.
Insert the conduit, check that it is perfectly in place.

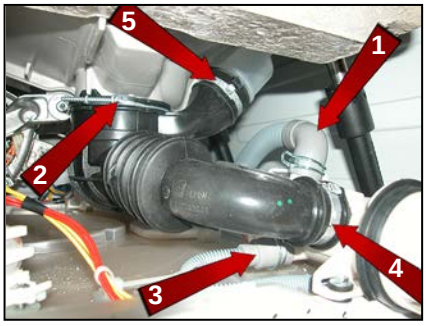
16.5.11 Drain water circuit

Empty the water out of the drain circuit.

16.5.11.1 Tub drain pipe

Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Loosen 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 condensation fill pipe (3).
Open/break the clamp to remove the pipe from the filter body assembly (4).
Pull out the tub drain pipe and pull out the pressure chamber (5).



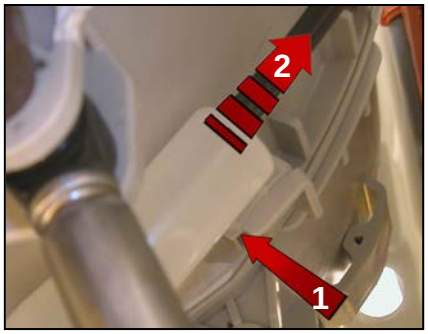
Where clamps are present, you will need to open/break them. When reassembling, use clamps with the same characteristics and repeat the above steps in the reverse order.

16.5.11.2 Pressure chamber

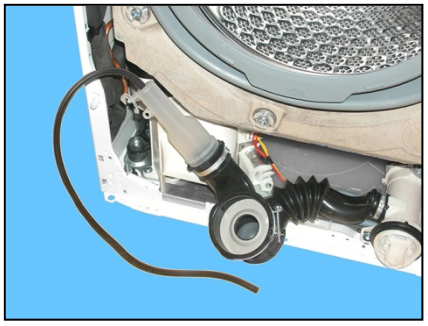
Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Unfasten the screws securing the door safety interlock (see related paragraph).
Remove the front panel (see relevant paragraph).
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) while at the same time lifting the chamber (2) from the support securing it to the tub.

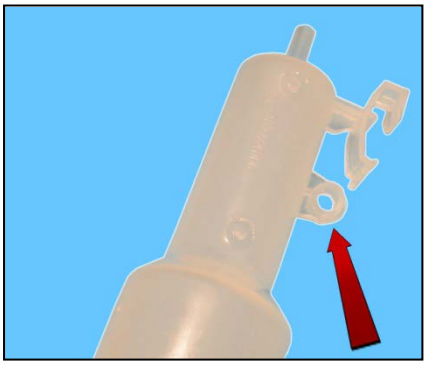


Turn the chamber under the tub and pull it out.

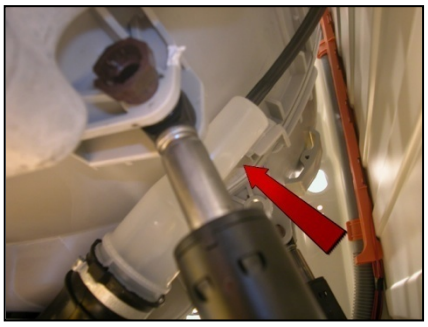


Make a note of the latch and hook with which it is secured to the tub.

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

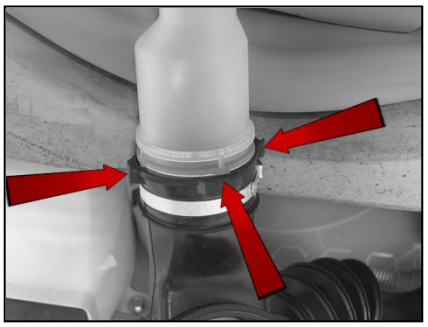


Use a screw Code 405 50 33-52/8 (AF/2P 5x16 TE/SP must have a maximum length of 16 mm and without a tip to avoid perforating the tub), secure the chamber to the tub as shown by the arrow in the photo.



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

The size of the clamp to use is 52.5 mm.



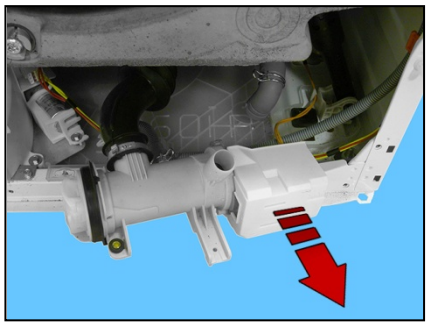
When reassembling, repeat the same steps in the reverse order and reposition the pipe connecting the pressure switch in its seat around the washing unit so that it never touches the cabinet.

16.5.11.3 Filter body

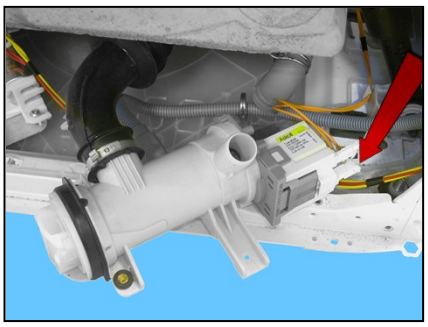
Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Unfasten the screws securing the door safety interlock (see related paragraph).
Remove the front panel (see relevant paragraph).
Loosen the screws securing it to the front crossbar (1).
Remove the general drain pipes (2) and the condensation drain pipe.
Lift the filter body to extract the support inserted on the side crosspiece (3).

16.5.11.4 Drainage pump

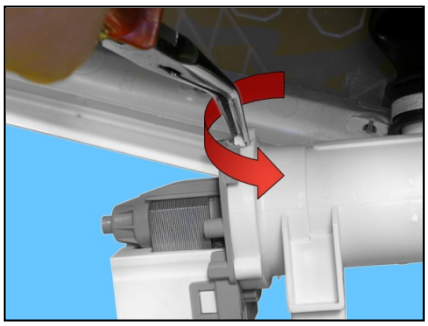
Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Loosen the screws securing the door safety interlock (see related paragraph).
Remove the front panel (see relevant paragraph).
Remove the filter unit (see relevant paragraph).



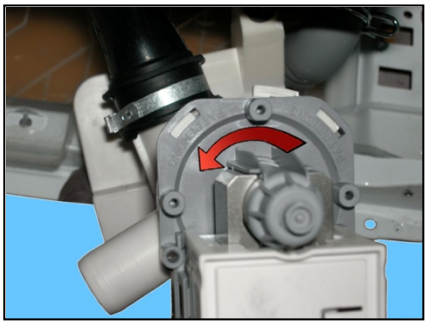
Remove the pump protection.



Remove the connectors.



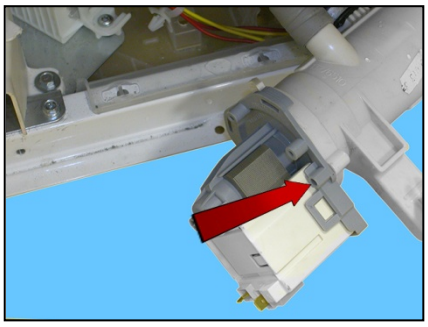
Move the lock catch with some pliers (take care not to break it).



Simultaneously rotate the pump as shown by the arrow.

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

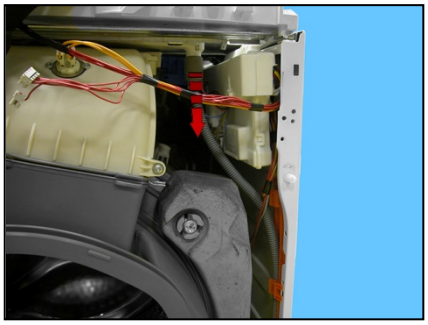
Size of the screw 3.5 x 19 Code 5024 79 51- 00/2.



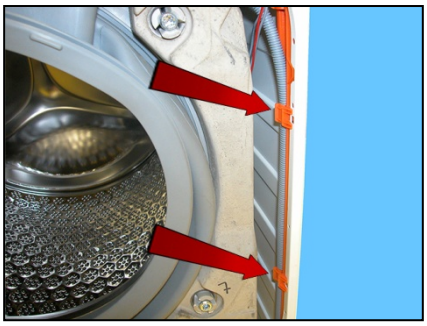
16.5.12 Condensation drain pipe

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

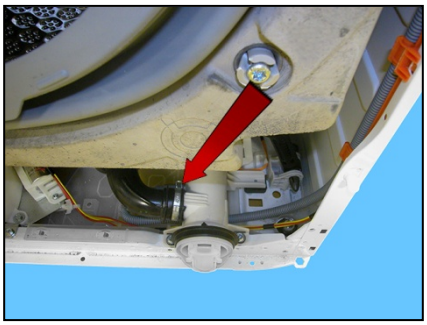
Remove it from the complete WD-HP housing.



Pull it out along the appliance side.



Pull it out of the filter body.



16.5.13 Front right shock absorber (front view)

Remove the sheet metal 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).

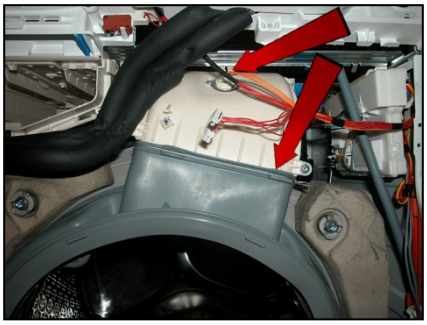
Pull out the pins securing it to the tub and crosspiece.

To reposition the pins, see para.16.5.15 page 105.

16.5.14 Tub suspension springs

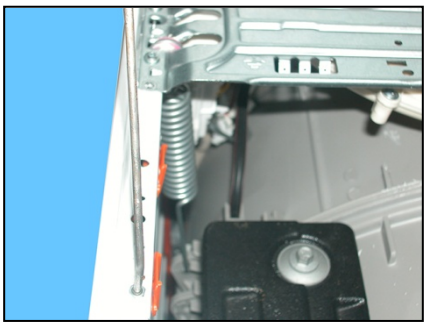
16.5.14.1 Right spring seen from the front

Remove the sheet metal 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).
Lift the complete WD-HP housing.
Make sure the pipes or the wiring are not positioned in such a way as to hinder the operation.



Remove the connectors from the NTC probe (drying).
Remove the bellow seal from the duct.

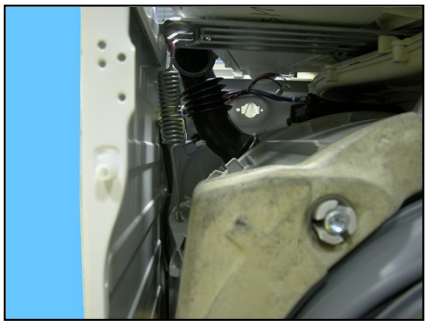
Remove the duct (see relevant paragraph).



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

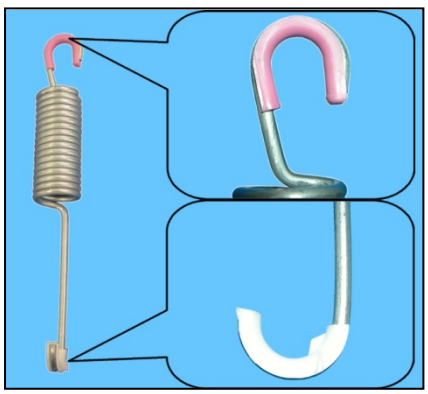
16.5.14.2 Left spring seen from the front

Remove the sheet metal 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).
Lift the complete WD-HP housing.
Remove the detergent dispenser (see relevant paragraph).



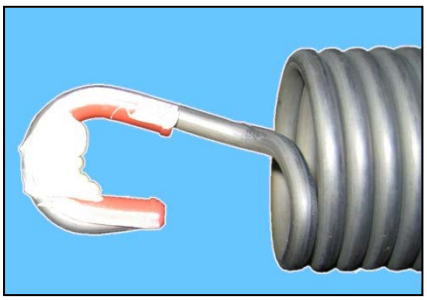
Attach the spring as shown in the figure: the shortest leg towards the crosspiece, whereas the longest leg towards the welded tub.

When reattaching the springs (after repair work which required their removal), make sure that the bushings shown in the figure are featured on both ends.
Pay attention to the differences between the bushings (see enlarged details).
Spare bushings are available, under the following codes:

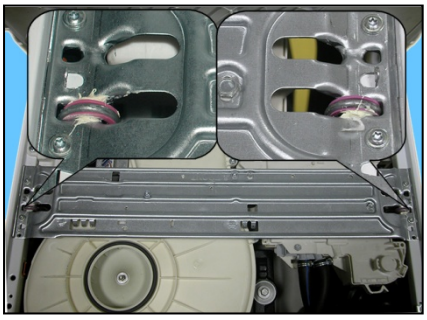


Upper bushing Code 405 50 62-51/9
Lower bushing Code 405 50 62-52/7

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

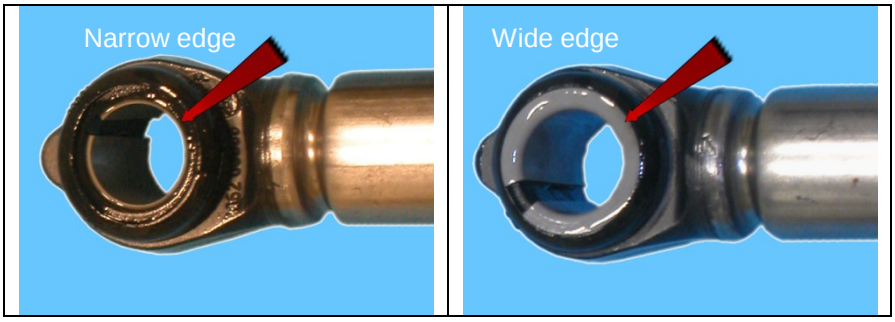


Attachment position of springs to top crosspiece.

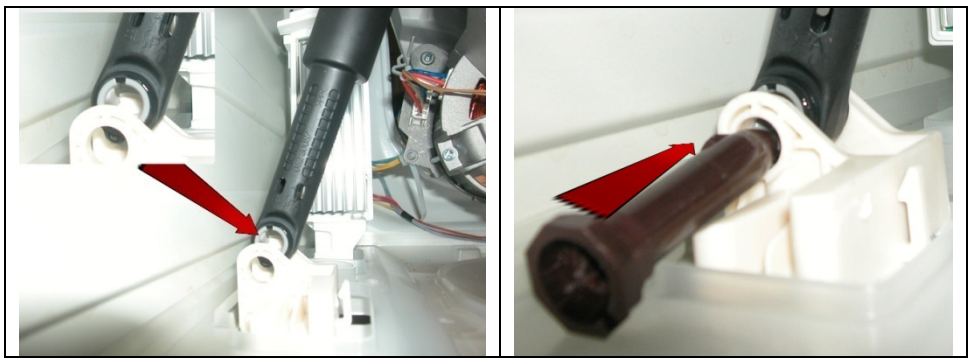


16.5.15 Shock absorber pin

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

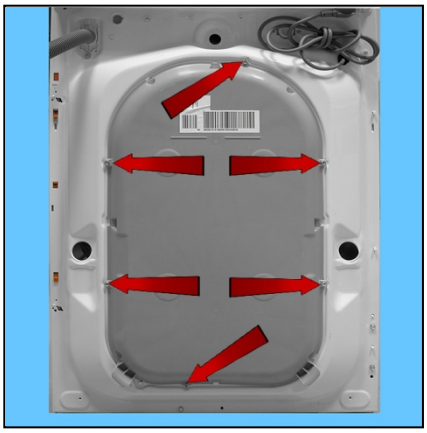


When positioning the shock absorber inside the fastening (situated at the bottom of the cabinet or in the tub), take care when positioning the bushing, so as to insert the pin from the part of the bushing with the widest profile. The spare bushing is supplied under Code 344 91 25-30/5.



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

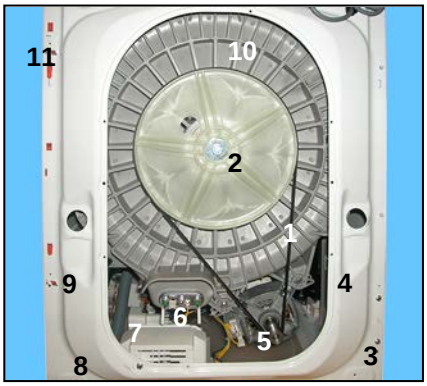
16.6 Accessing the rear part



16.6.1 Back panel

Loosen the screws that fix it to the cabinet.

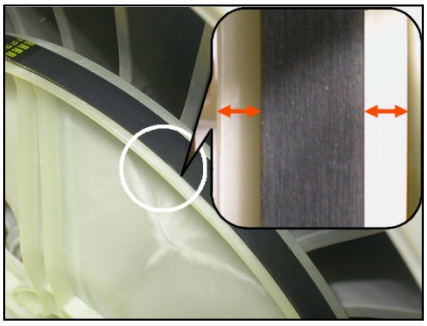
16.7 From the back panel, you can access



1. Belt
2. Plastic pulley
3. Main board
4. Left shock absorber
5. Motor
6. Resistance
7. Inverter UIMC
8. Water control
9. Right-hand rear shock absorber
10. Welded tub assembly
11. Drain pipe/wiring support
12. Main drain pipe

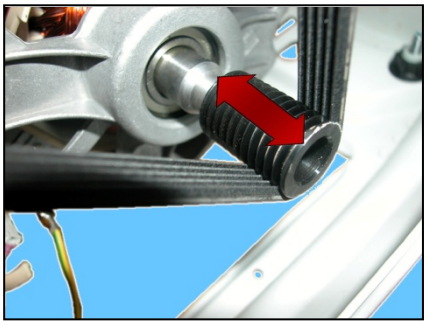
16.7.1 Belt

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 (∅ 273 mm) as shown in the figure.

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



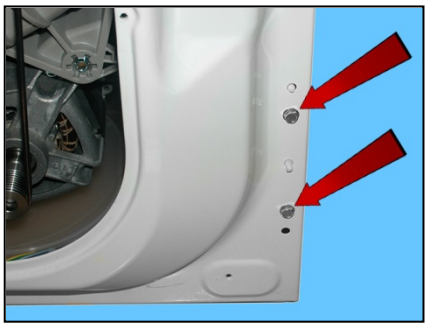
If necessary, adjust the position of the belt on the drive pulley, so that it is correctly positioned.

16.7.2 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.

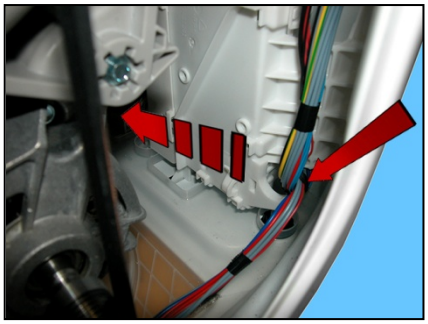
Tighten the screw at a torque of 60 Nm.

16.7.3 Main board

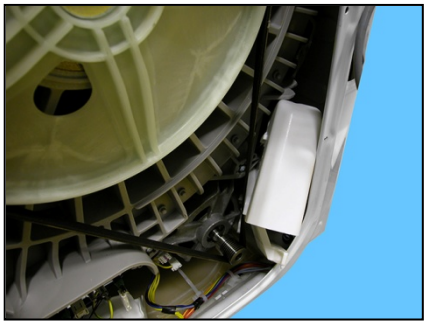


Remove the back panel (see relevant chapter).

Loosen the two screws that fix it to the cabinet.



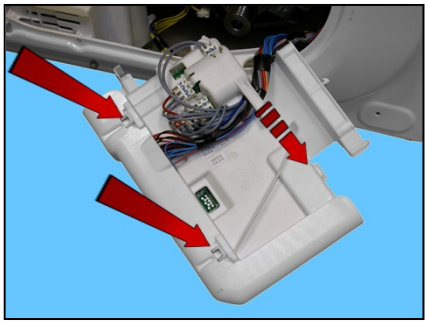
Remove the wiring from the hook of the main board assembly casing.
Move the board assembly inwards, raise it so as to extract the catch.



Push the washing unit towards the inside and turn the main board assembly.

Continue pushing the washing unit inwards and position the main board as shown in the figure.

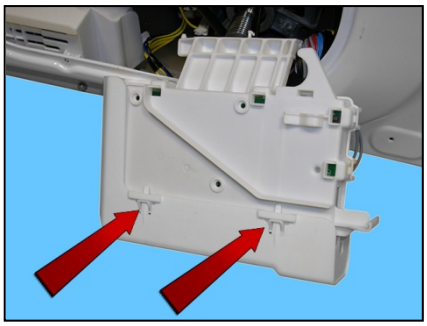
Then remove it.



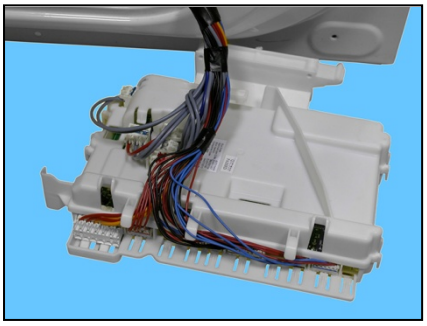
Remove the wiring from the hook.

Release the connectors protection on one side.

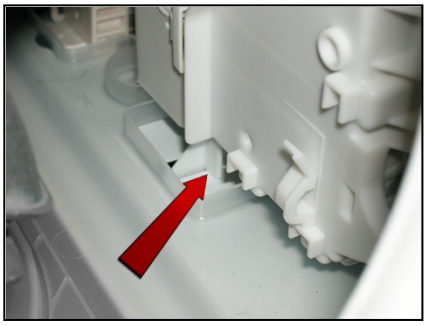
Then on the other.



Open the wiring protection and disconnect the connectors.



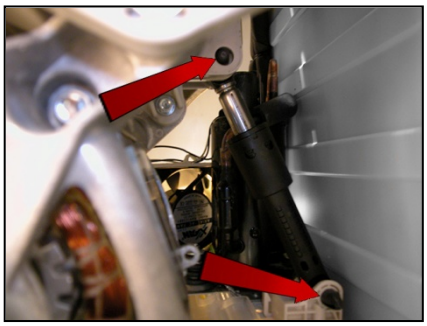
When repositioning the main board assembly in its seat, pay attention that the hook is inserted in its position in the crosspiece.



16.7.4 Left-hand shock absorber (front view)

Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the main board (see relevant paragraph).
Pull out the pins securing it to the tub and crosspiece.

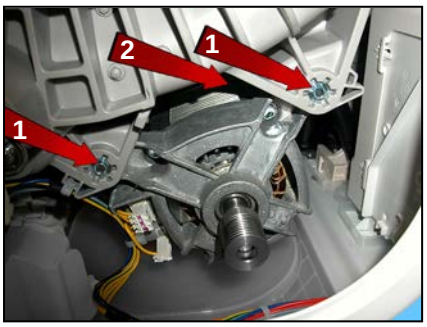
To reposition the pins, see para.16.5.15 page 105.



16.7.5 Motor

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

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

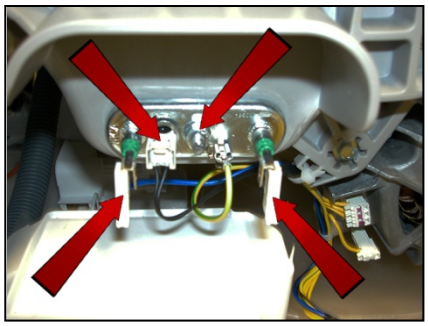


When reassembling, restore the connections.

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

Tighten the screws at a torque of 5 Nm.

16.7.6 Resistance

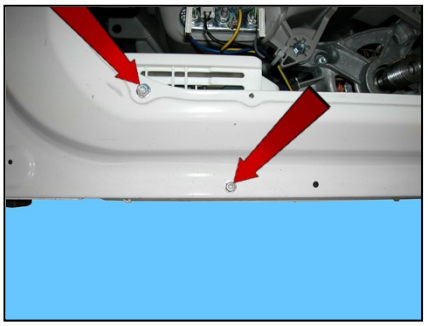


Remove the back panel (see relevant chapter).

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

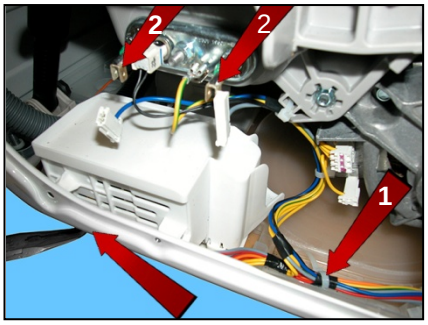
Tighten the nut at a torque of 4 Nm.

16.7.7 Inverter UIMC

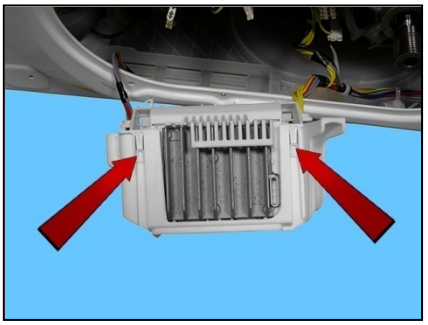


Remove the back panel (see relevant chapter).

Loosen the two screws that fix it to the cabinet.

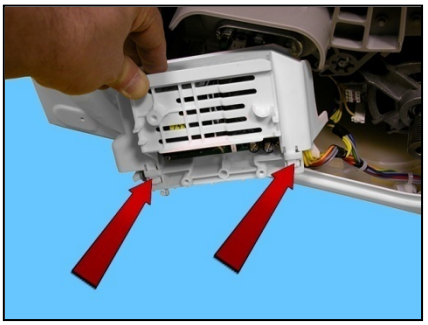


Pull out the clamp from the cabinet (1).
Remove the heating element connectors (2).
Using a pair of pliers remove the hook (3) securing the inverter casing to the bottom of the cabinet.



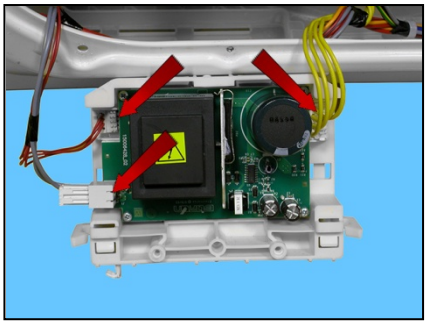
Push the washing unit towards the inside of the appliance (if necessary).
Remove the Inverter (UIMC).

Disconnect the hooks fixing the connector protection on one side.



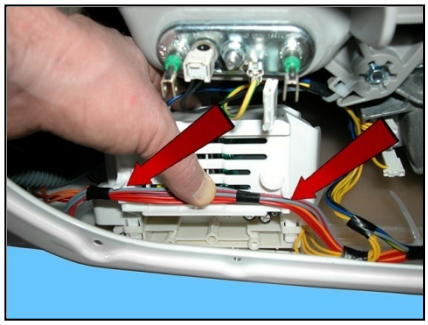
Then on the other.

Remove the connectors protection.



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

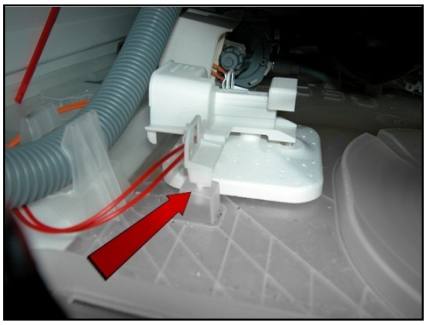
CAUTION:
Position the wiring carefully when re-assembling the UIMC (Inverter) and set it out as shown in the figure, inside the two rails cut into the UIMC lid (indicated by the arrows).
This is to avoid any wire being squashed/pressed against the cabinet with the risk of current leakage.



16.7.8 Water control

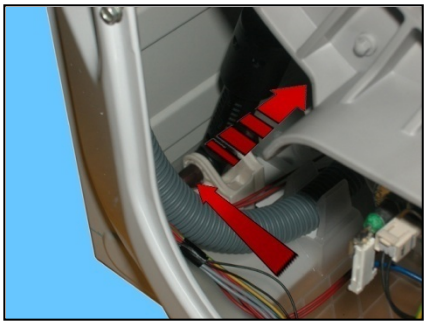
Remove the back panel (see relevant chapter).
Remove the inverter (see relevant chapter).

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



16.7.9 Right-hand rear shock absorber (front view)

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



To take the pins out of their seats, push the locking tooth and at the same time remove it with pliers.
Perform the same operations for the other pin.
Take the shock absorber out.
To reposition the pins, see para.16.5.15 page 105

16.7.10 Welded tub assembly

Remove the sheet metal worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Unfasten the screws securing the door safety interlock (see related paragraph).
Remove the front panel (see relevant paragraph).
Remove the complete housing (see relevant paragraph).
Remove the detergent dispenser (see relevant paragraph).
Remove the duct (see relevant paragraph).
Remove the upper counterweight (see relevant paragraph).
Remove the front counterweight (see relevant paragraph).
Remove the back panel (see relevant paragraph).
To remove the washing unit assembly, disconnect:
All the tub pipes, the wiring connectors that connect the heating element, the NTC probe, remove the belt and the motor (to lighten the tub).
Lay the appliance on its back (making sure you place a polystyrene or cardboard layer on the floor to prevent damaging the cabinet).
Take the tub out of the washing machine.

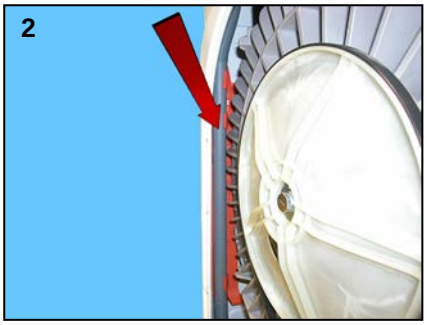
16.7.11 Drain pipe/wiring support

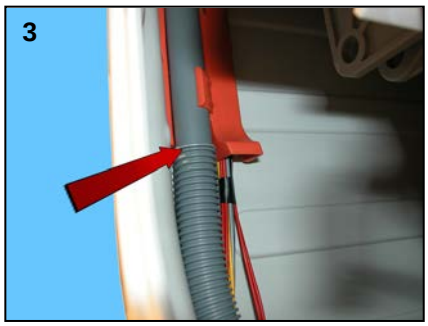
When fixing the drain pipe/wiring support make sure that the two stops (indicated by the red arrows) fit into their housings, locking the support to the unit.

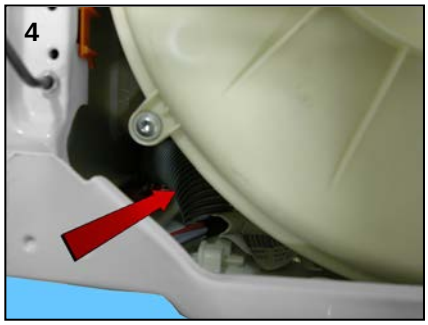
If the fixing is not stable and there is a risk of it coming out of its position, fasten the support to the unit with a screw (6.5 x 3.5 mm) screwed into the hole indicated by the blue arrow.

16.7.12 Main drain pipe

Arrange the drain pipe as shown in the figures.







Revision	Date	Description	Written by	Approved by:
00	03/2014	Document creation	DMM	XX – 0X/201X
01	06/2014	Page 8 Inserted “Three-phase synchronous motor with permanent magnets” in the table Page 20 Inserted note from Serial Number … Page 21 Modified position 10 diagnostics components activation times Page 30 Modified (see page 30) in (see page 70) Page 45 Added “(where featured)” in the title Page 46÷47 Added chapter on Three-phase synchronous motor with permanent magnets (where featured) Page 60 Added Chapter on “Heat Pump efficiency control” Page 103 Corrected “para. 16.5.15 page 102” to page 105 Page 108 Corrected “para. 16.5.15 page 102” to page 105 Page 110 Corrected “para. 16.5.15 page 102” to page 105	DMM	XX – 0X/201X