ELECTROLUX HOME PRODUCTS PTY LTD

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SERVICE MANUAL

Electrolux

FRONT LOAD WASHING MACHINE & WASHER/DRYER

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SAFETY INFORMATION

Under NO circumstances should any service work be carried out unless you are qualified and licensed as per Federal, State and Territory requirements.

General Safety

- Work should not be under taken on any electrical appliance without first checking the earthing integrity of the appliance and electrical supply.
- A safety audit should be carried out of the work area to ensure the area has adequate room to work in and is free from any hazards that may cause any injury to yourself and any other person in the vicinity.
- After repair, product has to be reassembled as it was which complies with specification of the Manufacturer to ensure product is safe to operate both mechanically and electrically.

Electrical Safety

- Under NO circumstances should changing or repairs to parts be carried out on live appliances. Any changing or repair to parts must be done with the appliance removed from the electrical supply. Failure to do so may result is injury or death.
- After any work is completed the earthing integrity of the appliance must be checked.
- If you need to do electrical testing with the product live the following must be observed:
    - It must be on a circuit with earth leakage protection.
    - As much skin as possible should be covered to reduce the chances of coming into contact with live terminals
    - All jewellery should be removed.
    - There should not be any water/moisture on the ground.
    - A safety sign should be displayed to warn others of the danger.

Running appliances with panels/covers removed

- All the electrical safety procedures above must be observed.
- Care must be taken not to come into contact with moving parts.
- Loose clothing or jewellery that can become entrapped should not be worn.
- If handling or working near sharp edges the appropriate personal protection equipment must be used.
- Safety eyewear should be used if removing parts that may “spring and fly” if they slip of a tool. Eg removing a spring which is under compression.
- Any removed panels that have sharp edges should be placed where they do not cause any danger of injury to yourself or others.
- A safety sign should be displayed to warn others of the danger.
- If handling or working in a dusty area or with Dust Product, dust mask or appropriate PPE should be used.

Refrigeration

- Ensure you know which refrigerant is in the appliance so the correct gas handling procedures can be used. Failure to use the correct procedure may result in injury.
- If hot work needs to be done ensure all the surround area is safe and free from combustibles. Where necessary heat shielding should be used.
- Ensure pipework has cooled down before touching.
- When handling gas make sure all necessary PPE is used.
- Ensure there is enough ventilation.
- Place warnings signs so others know flames/smoking must not be in the area.

Gas Safety

- Under no circumstances should a naked flame be used, eg match, lighter etc, to try and find a gas leak, only an appropriate gas leak detector or soapy water should be used.
- When converting an appliance to another gas type, the gas type label supplied must be fitted in the appropriate area.
- Always ensure the product is connected to the correct gas type.
- When working with a gas leak place warnings signs so others know flames/smoking must not be in the area.
- After fixing a gas leak do not try and ignite the burner(s) until any remaining escaped gas has dissipated.

TOOLS

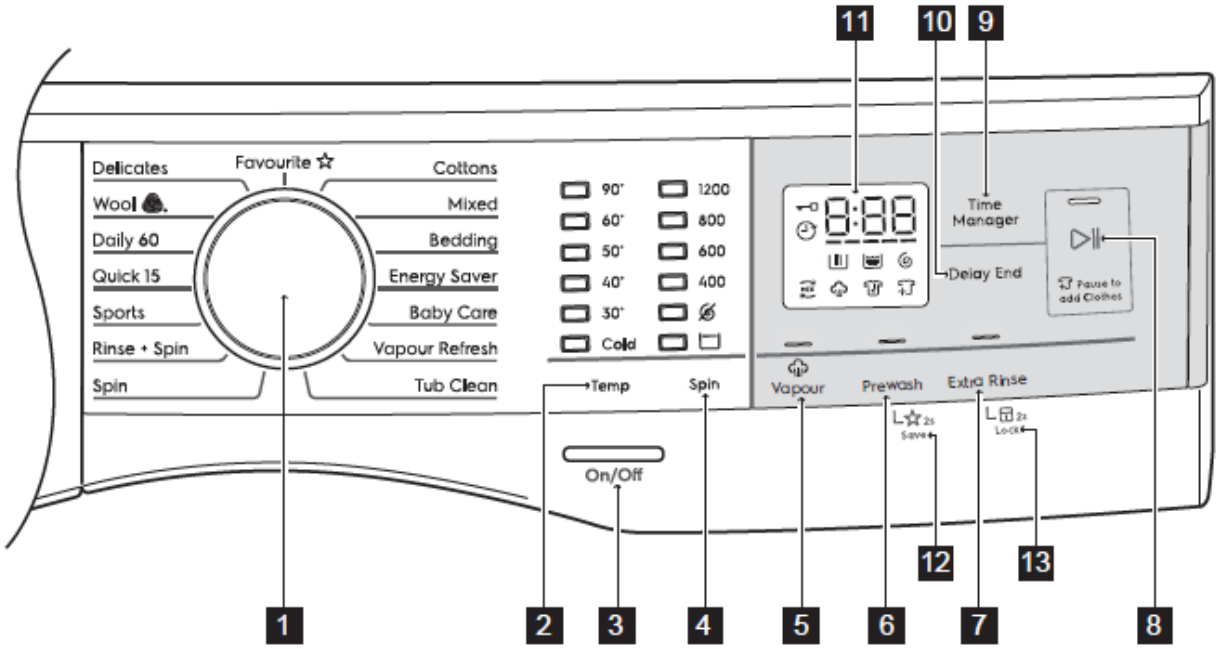
- Standard socket and screwdriver set
- T20 Torque Screw Bit

CONTENTS

DIAGNOSTICS & ALARM CODES

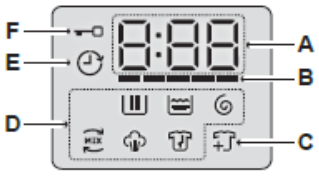
CONTROL PANELS & DESCRIPTIONS

EWF7524CDWA & EWF8524CDWA & EWF8024CDWA & EWF9024CDWA



1 Program Selector Knob
2 Temperature Selection Touchpad
3 On/Off Button
4 Spin Selection Touchpad
5 Vapour Touchpad
6 Prewash Touchpad
7 Extra Rinse Touchpad
8 Start/Pause and Add Clothes Touchpad
9 Time Manager Touchpad
10 Delay End Touchpad

11 Display



A) Program Time
B) Time Manager Level
C) Add Clothes Icon
D) Program Phase Indication Icon:
- Ultramix phase
- Wash phase
- Rinse phase
- Spin phase
- Vapour phase
- Anticrease Phase Icon

12 Save Favourite Program Option
13 Child Lock Option

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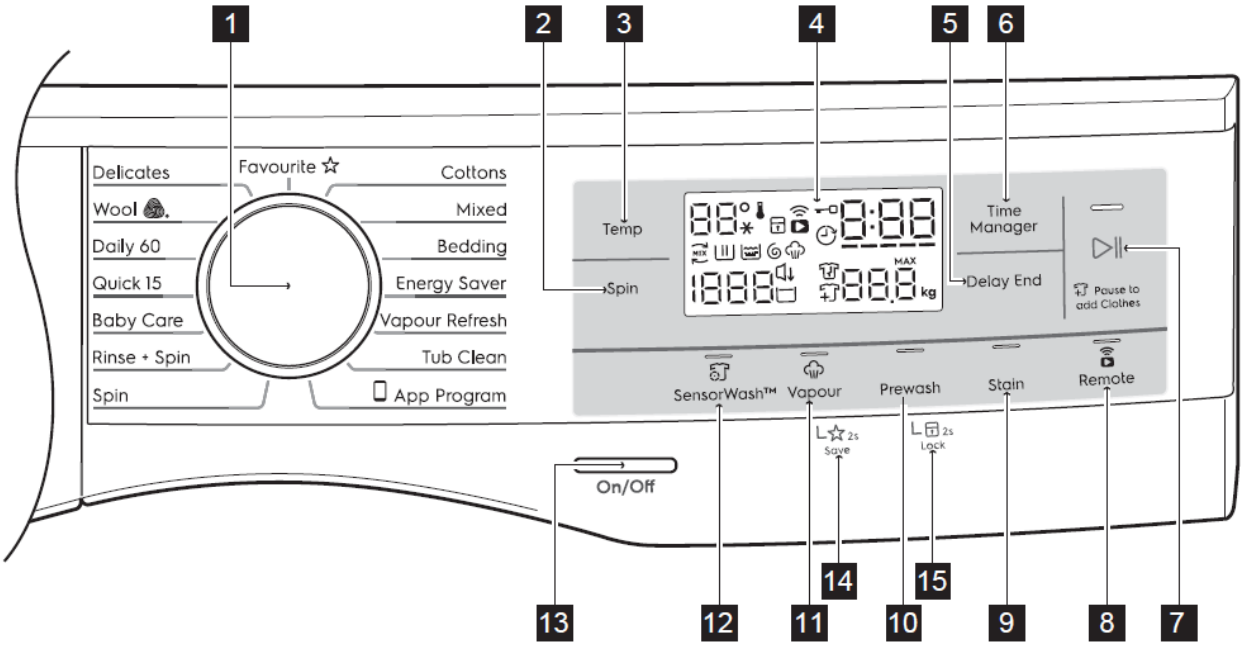
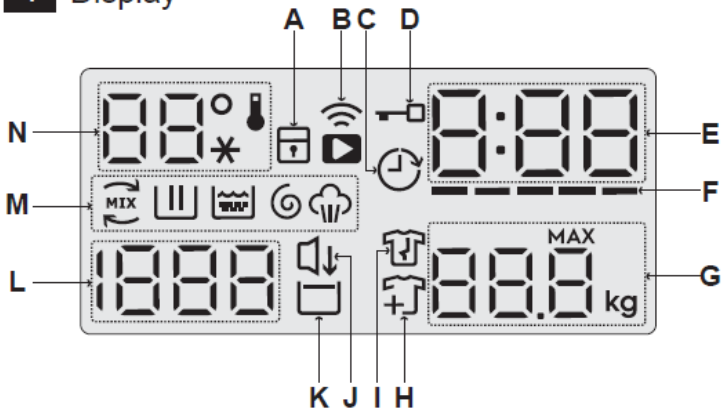


1 Program Selector Knob
2 Spin Selection Touchpad
3 Temperature Selection Touchpad
4 Display



5 Delay End Touchpad
6 Time Manager Touchpad
7 Start/Pause and Add Clothes Touchpad
8 Remote Touchpad
9 Stain Touchpad
10 Prewash Touchpad
11 Vapour Touchpad
12 Sensor Wash Touchpad
13 On/Off Button
14 Save Favourite Program Option
15 Child Lock Option

A) Child Lock Icon
B) Remote Icon
C) Delay End Icon
D) Door Lock Icon
E) Program Time
F) Time Manager Level
G) Maximum Load Capacity Of Selected Program
H) Add Clothes Icon
I) Anticrease Phase Icon
J) Extra Silent Icon
K) Rinse Hold Icon
L) Spin Speed
M) Program Phase Indication Icon:
- Ultramix phase
- Wash phase
- Rinse phase
- Spin phase
- Vapour phase

N) Temperature

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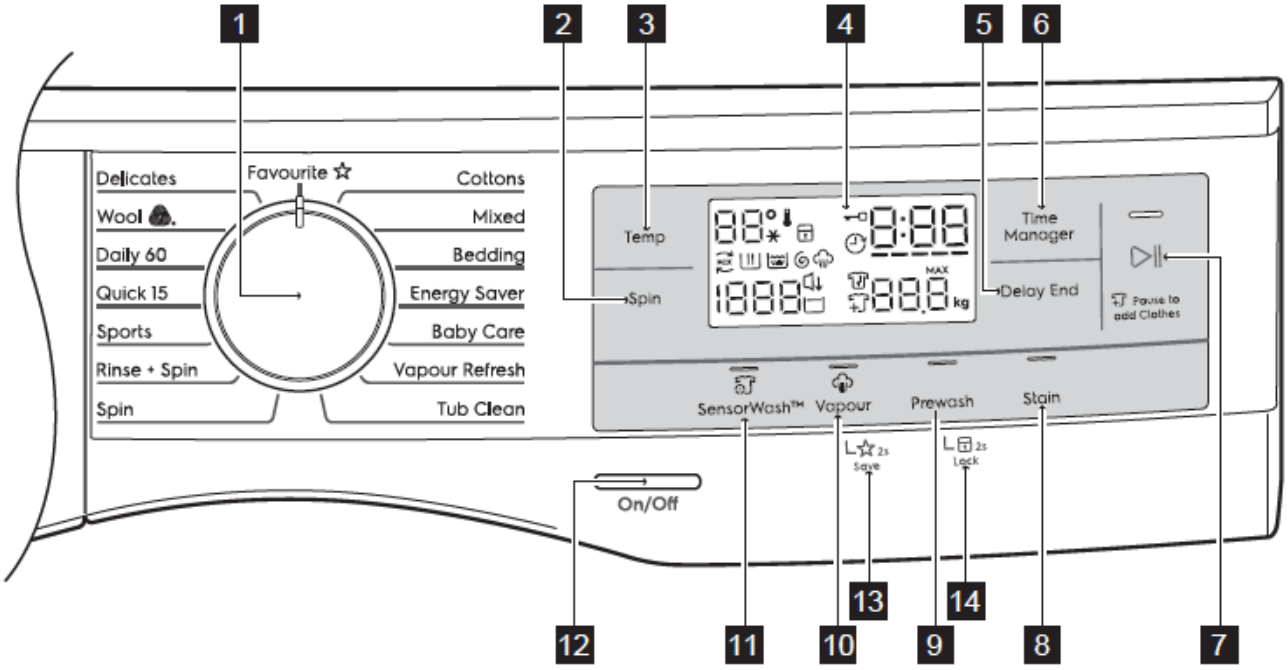
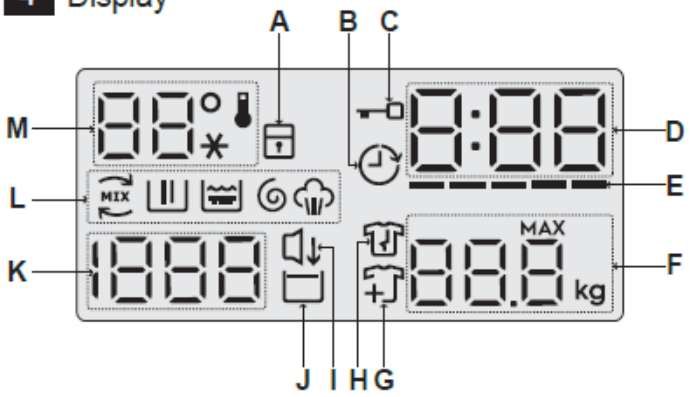


1 Program Selector Knob
2 Spin Selection Touchpad
3 Temperature Selection Touchpad
4 Display



5 Delay End Touchpad
6 Time Manager Touchpad
7 Start/Pause and Add Clothes Touchpad
8 Stain Touchpad
9 Prewash Touchpad
10 Vapour Touchpad
11 Sensor Wash Touchpad
12 On/Off Button
13 Save Favourite Program Option
14 Child Lock Option

A) Child Lock Icon
B) Delay End Icon
C) Door Lock Icon
D) Program Time
E) Time Manager Level
F) Maximum Load Capacity Of Selected Program
G) Add Clothes Icon
H) Anticrease Phase Icon
I) Extra Silent Icon
J) Rinse Hold Icon
K) Spin Speed
L) Program Phase Indication Icon:
- Ultramix phase
- Wash phase
- Rinse phase
- Spin phase
- Vapour phase

M) Temperature

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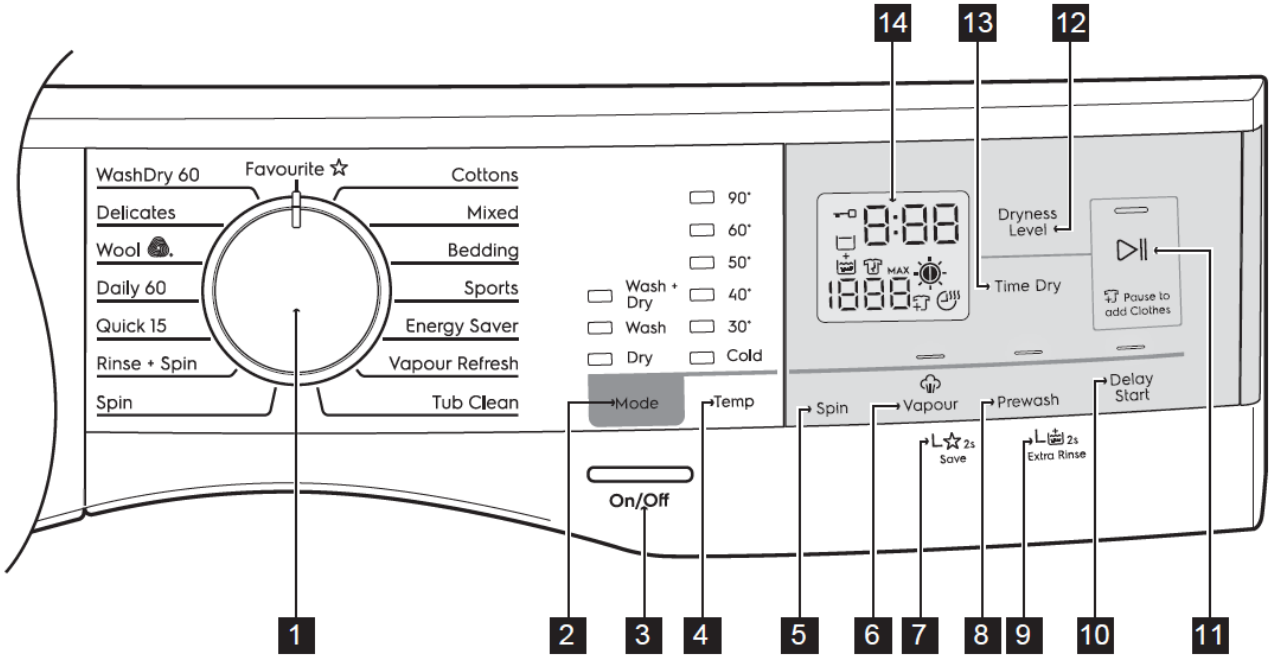

1	Program Selector Knob
2	Mode Selection Touchpad
3	On/Off Button
4	Temperature Selection Touchpad
5	Spin Selection Touchpad
6	Vapour Touchpad
7	Save Favourite Program Option
8	Prewash Touchpad
9	Extra Rinse Option
10	Delay Start Touchpad
11	Start/Pause and Add Clothes Touchpad
12	Dryness Level Touchpad
13	Time Dry Touchpad
14	Display

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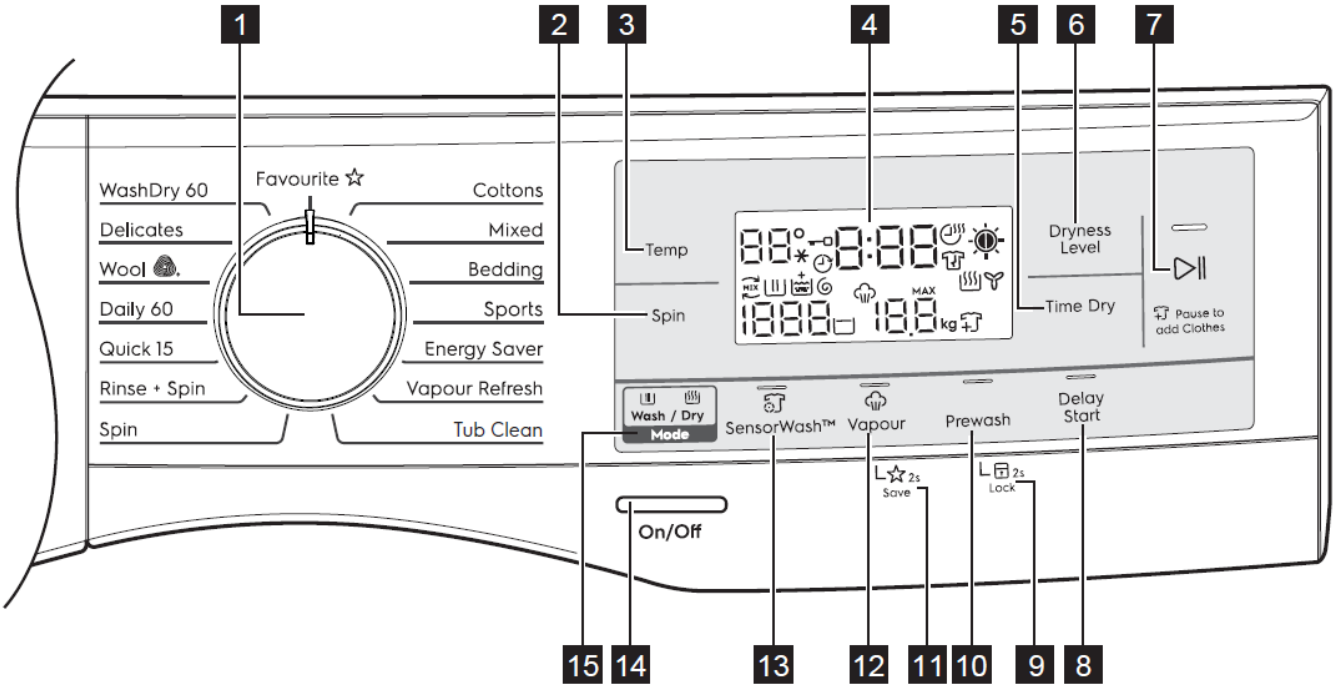

1. Program Selector Knob
2. Spin Selection Touchpad
3. Temperature Selection Touchpad
4. Display
5. Time Dry Touchpad
6. Dryness Level Touchpad
7. Start/Pause and Add Clothes Touchpad
8. Delay Start Touchpad
9. Child Lock Option
10. Prewash Touchpad
11. Save Favourite Program Option
12. Vapour Touchpad
13. SensorWash Touchpad
14. On/Off Button
15. Wash/Dry Mode Selection Touchpad

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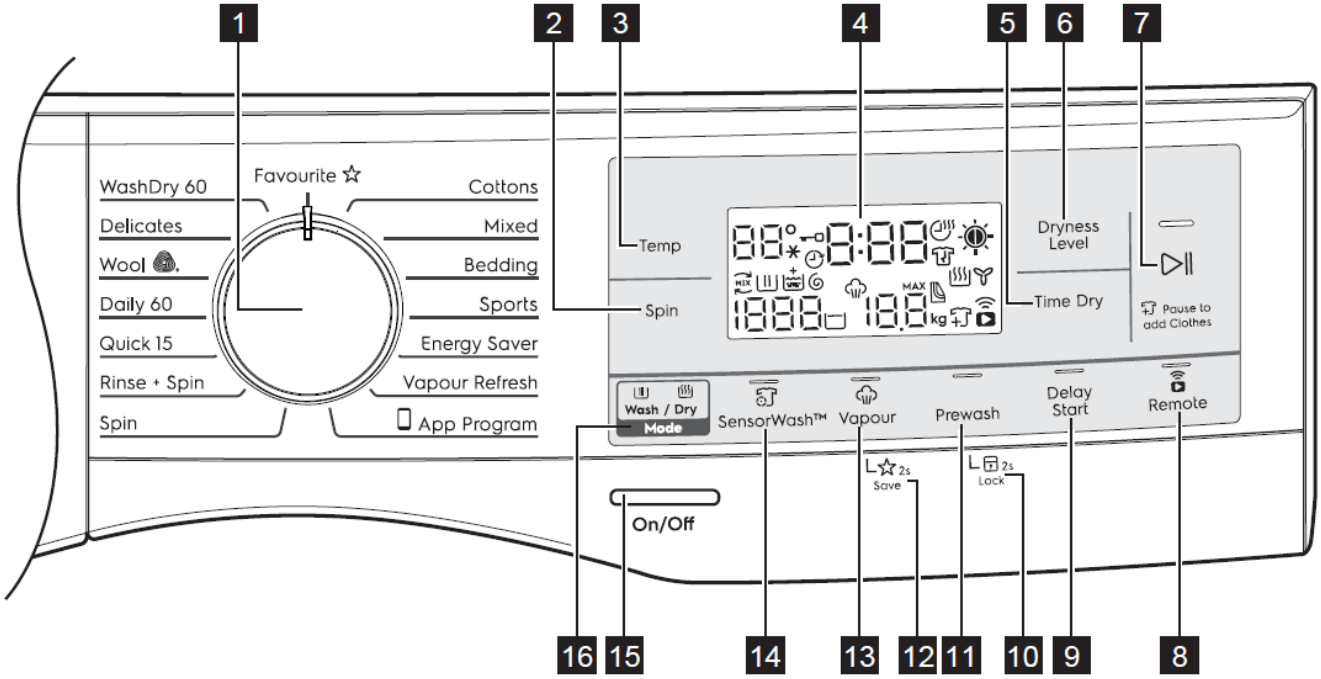

1	Program Selector Knob
2	Spin Selection Touchpad
3	Temperature Selection Touchpad
4	Display
5	Time Dry Touchpad
6	Dryness Level Touchpad
7	Start/Pause and Add Clothes Touchpad
8	Remote Touchpad
9	Delay Start Touchpad
10	Child Lock Option
11	Prewash Touchpad
12	Save Favourite Program Option
13	Vapour Touchpad
14	SensorWash Touchpad
15	On/Off Button
16	Wash/Dry Mode Selection Touchpad

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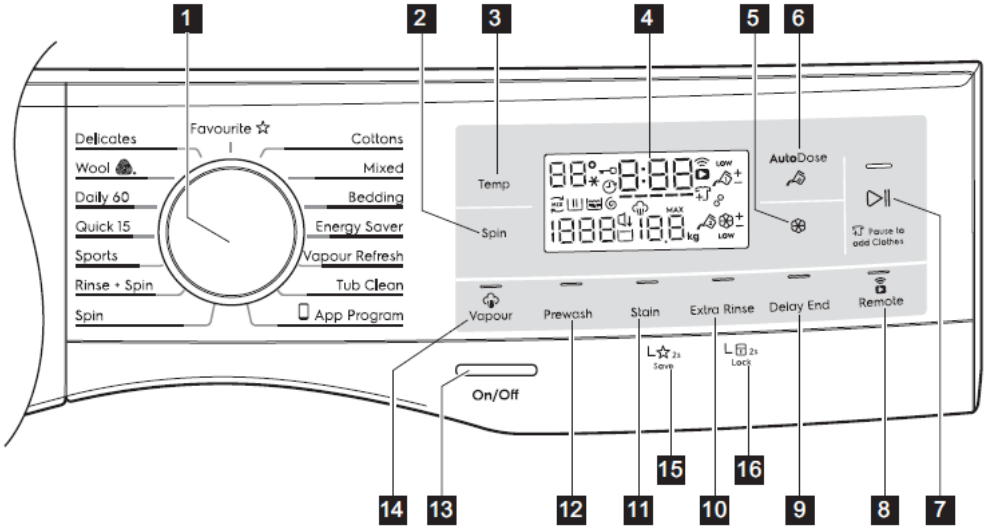

1	Program Selector Knob	9	Delay End Touchpad
2	Spin Selection Touchpad	10	Extra Rinse Touchpad
3	Temperature Selection Touchpad	11	Stain Touchpad
4	Display	12	Prewash Touchpad
5	AutoDose Softener Touchpad	13	On/Off Button
6	AutoDose Detergent Touchpad	14	Vapour Touchpad
7	Start/Pause and Add Clothes Touchpad	15	Save Favourite Program Option
8	Remote Touchpad	16	Child Lock Option

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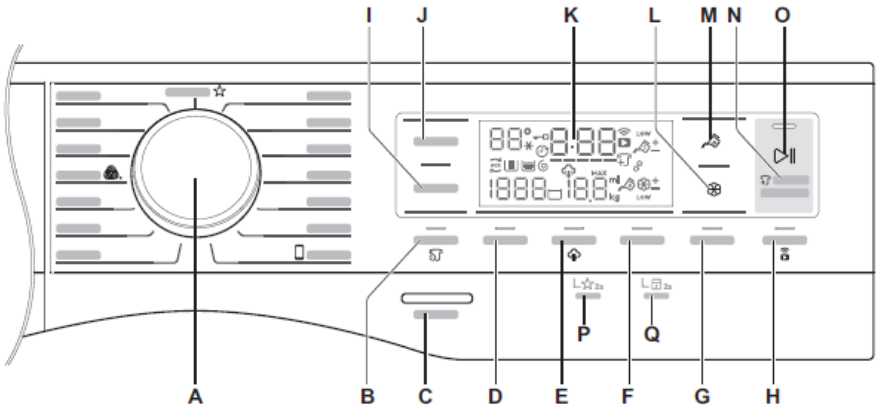

A	Program knob	J	Temp touchpad
B	SensorWash touchapd	K	Display
C	On/Off button	L	Autodose - Softener
D	Stain touchpad	M	Autodose - Detergent
E	Hygienic Care touchpad	N	Pause to add Clothes option
F	Prewash touchpad	O	Start/Pause touchpad
G	Delay End touchpad	P	Favourite program save option
H	Remote touchpad	Q	Child safety lock option
I	Spin touchpad		

COMMON FUNCTIONALITIES

On/Off Button

These models have a dedicated mechanical tact-switch button for On/Off function always present. The Off function does not disconnect the machine from the mains supply, but put the appliance in a special low power consumption mode. The 0-Watt power consumption circuit that completely disconnects machine from the mains supply is not supported in Project ONE AEG range based on EWX13 and EWX14 main board electronic platforms. The user has to unplug machine to disconnect mains power.

To switch on the appliance press shortly the On/Off button. The user interface plays the dedicated jingle (if buzzer is enabled) and switches the lights and display on according to default programme.

To switch off the appliance, press and hold a bit longer the On/Off button. The user interface plays the dedicated jingle (if buzzer is enabled) and all lights and display are switched off. All previously selected options and the possible program in progress are reset, so that at next machine switching on the default washing program is selected.

Low Power Consumption Modes

The machine is put in low power consumption mode to avoid wasting energy when the cycle is not running, in accordance with international standards in terms of energetic consumption normative.

The low power mode in this document is referenced as **Stand by**.

Stand-by Mode Behaviour

This mode applies to all UI levels where On/Off button is provided.

The appliance goes in Stand-by mode when it is “virtually switched off” by pressing On/Off button or the user does not interact with control panel for 5 minutes during program setting up or after that cycle has finished (auto stand-by). The machine is “virtually switched off” because all LEDs and display are lighted off and buttons are disabled, but the electronic boards are supplied anyway.

To cut out mains supply the appliance needs to be unplugged.

The appliance exits Stand-by mode when the user presses the On/Off button to switch machine on.

The Stand-by mode works in two ways:

- **when pushing the Off button**, the electronics goes in stand-by after some time, after having set machine in safety conditions (motor stops, door is kept locked if already locked). Cycle is reset, previously selected options are cleared so that next machine switching on the default programme is prompt (and door unlocked if previously was locked);
- **after 5 minutes without interaction with the customer**, the user interface lights completely off and the electronics goes automatically in stand-by for energy saving purposes in accordance with power consumption norms. The selected programme and options are kept so that the next machine switching on the same programme is prompt, provided that the knob hasn’t been moved in the meantime. In this way, if auto stand-by occurs in cycle end phase, the customer is aware the cycle finished normally and can restart it if desired. If auto stand-by occurs during programme setup, the cycle and options are kept anyway, in case customer takes more than 5 minutes to load and start the cycle. Automatic stand-by is disabled in case an alarm is displayed.

In the former case, switching machine off when door is locked, it is necessary waiting about 1-2 minutes before the door lock device is released

HI-FI SELECTOR

The program selector knob works as a Hi-fi selector (no ON/OFF position).

The number of position is not configurable and it is always 10, since it is strictly linked to the program lights.

Programmes layout around the main knob is configurable, with the following constraints:

- Temperatures are always selected separately, via dedicated button;

Compared to a traditional absolute selector, the Hi-fi one has no index on the knob and no reset position. The knob itself doesn't point to any position in the control panel; hence the selected programme is indicated by the associated LED.

To reset a cycle in progress just press the On/Off button.

When the machine is switched on, the top LED position is selected by default (if no "special modes, e.g. diagnostic, return from power fails, demo mode etc). When the rotary is turned clockwise or anti-clockwise in setup, the corresponding LED of selected programme is lighted on and the display info changes accordingly.

BUZZER

A multi-tone buzzer is provided to sound in following cases:

- switching machine on and off, with 2 different short jingles;
- pressing a button, with a very short "click" sound;
- when a selection error occurs, with three very short "click" sounds;
- when the cycle is finished, for about 2 minutes with a specific sequence of beeps;
- when alarms/warnings occur, for about 5 minutes with a specific sequence of short beeps.

The buzzer can be active or not by configuration. **This option is activated by factory default setting.** To deactivate it the specific push buttons combination has to be used (Refer to specific model User Manual" **Enabling/Disabling End-Of-Wash Buzzer**" section for button combination).

Note: Alarm/warning buzzer cannot be disabled.

FAULTS/WARNINGS SIGNALS

Selection Error

The selection errors are noticed by a specific buzzer melody and **" - - - "** on display.

The selection errors are given in following cases:

- when an incompatible option button with selected washing program has been pressed;
- when an option button is pressed or the selector is moved during the cycle execution.

EWX14 ELECTRONIC PLATFORM

Introduction

EWX14931 platform is a new electronic control for high range washing machines and wash/dryer with **Inverter** motor.

The new electronic controls are based at least in three electronic boards:

	EWX14
User Interface Board	x
Power (Main) Board	x
FCV or motor control board	x

The **Power Board** electronic controls have the purpose to:

- drive all the machine loads (valves, motor control board, pumps, heating element, door lock device, drum light, detergent dosage, WD heating element, drying fan);
- read the several inputs necessary to control the functionality (water levels, door status, motor speed, water temperature, power supply status, door positioning system, air temperature, weight sensor, filter positioning, flow sensor);

- manage a serial port to connect the machine to external devices for testing, configuration, remote control purpose (EAP protocol);

The **User Interface Board** electronic control has the purpose to:

- manage the user selections and the machine status display by driving Leds and LCDs, and by reading push buttons and/or rotary knobs,
- manage a serial port to allow connection to external devices for testing, remote control purpose (EAP protocol);

The **FCV or Motor Control Board** controls the inverter motor.

The purpose of this document is to describe the diagnostic architecture implemented on this electronic platform.

System Architecture

The machine can work in several functional modes:

- User mode
- Demo mode
- Electric test mode
- Special function mode
- Diagnostic mode

The last one can be set only by serial port using specific tools.

All the other modes are available using the machine itself.

User Mode is the normal way to use the machine to execute normal cycles (used by the end user).

Demo Mode is used in the shop floors to show to the customer how to set and execute a cycle without load/draining water.

Special Function Mode is used to show special parameters of the machine (for example the cycles/working hours counter – pay per wash architecture).

Electric Test Mode is used, on assembly line, to perform the electric safety tests according the International Standards.

Diagnostic Mode is used by service/lab people to test the machine, read/reset alarms.

DEMO MODE

In the shops and exhibitions sometime it could be necessary to show to the customer the machine behaviour in set-up condition and also during cycle execution. The duration of a cycle execution is in any case too long for a brief show.

The Demo works in two ways: one interactive mode and one automatic loop. The interactive mode enables the user to try the interface without activating the appliance. If no one has interacted with the interface for 3 minutes, or Start button hasn't been pushed, it proceeds to display an automatic loop instead, simulating the cycle execution only on display.

DEMO mode alters the execution of a cycle in such a way that these problems are avoided:

- In set-up state the machine behaviour is the same as the user mode.
- During cycle execution all cycle phase durations are shorter.
- No water load/drain is executed.

Enable/Disable Demo Mode for each model:

	DEMO MODE
To enable Demo Mode or Diagnostics Mode Power ON the machine then within 7 seconds select:	"Bedding"
Then press & hold the 2 key combination buttons as shown for each model simultaneously for 3 seconds until the display shows:	dEn
To disable Demo Mode:	Unplug the machine from the power point.

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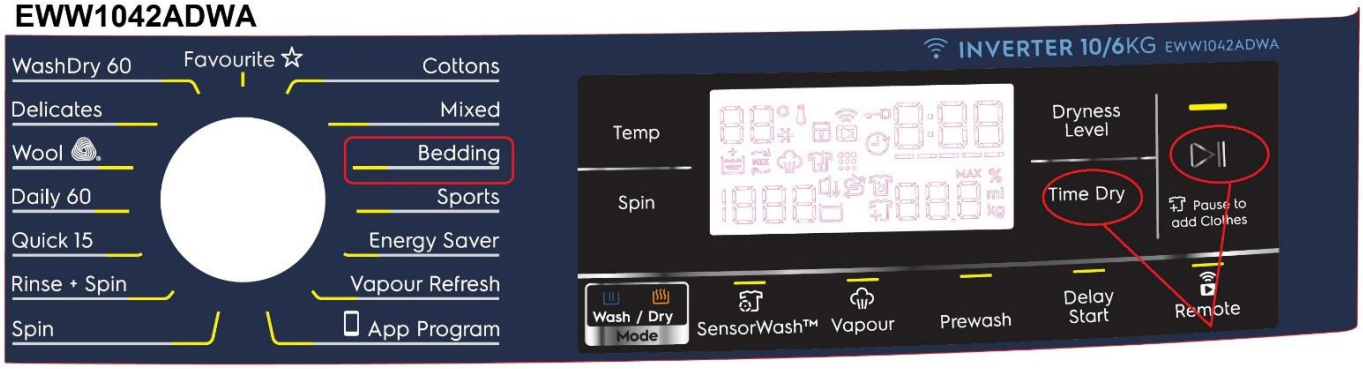

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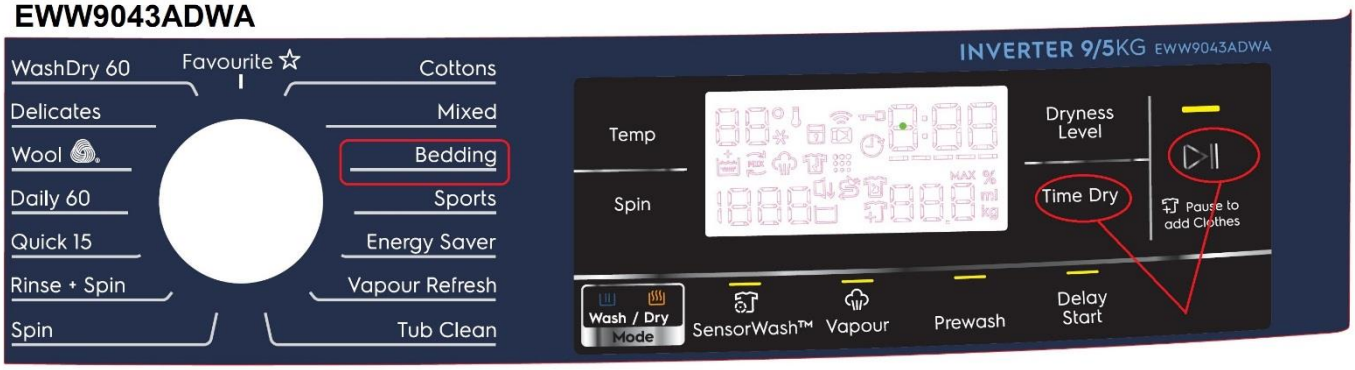

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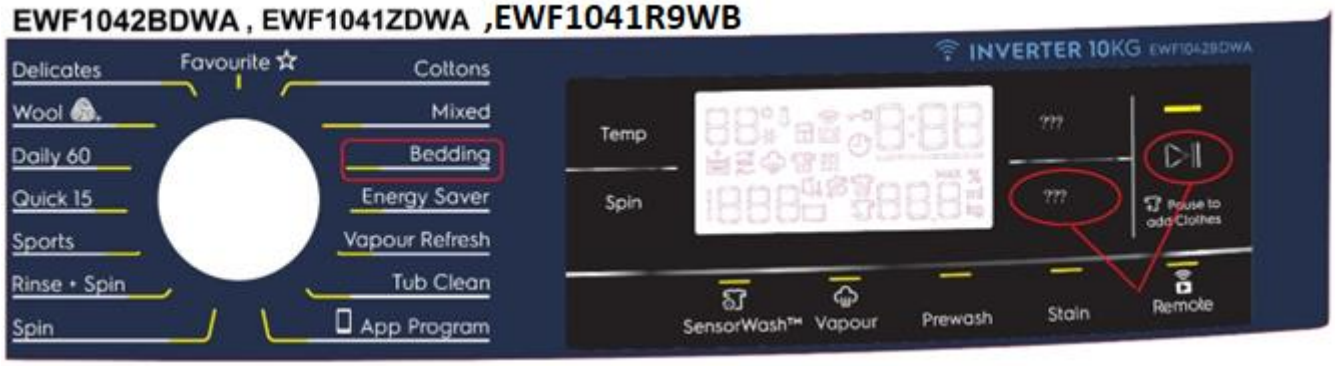

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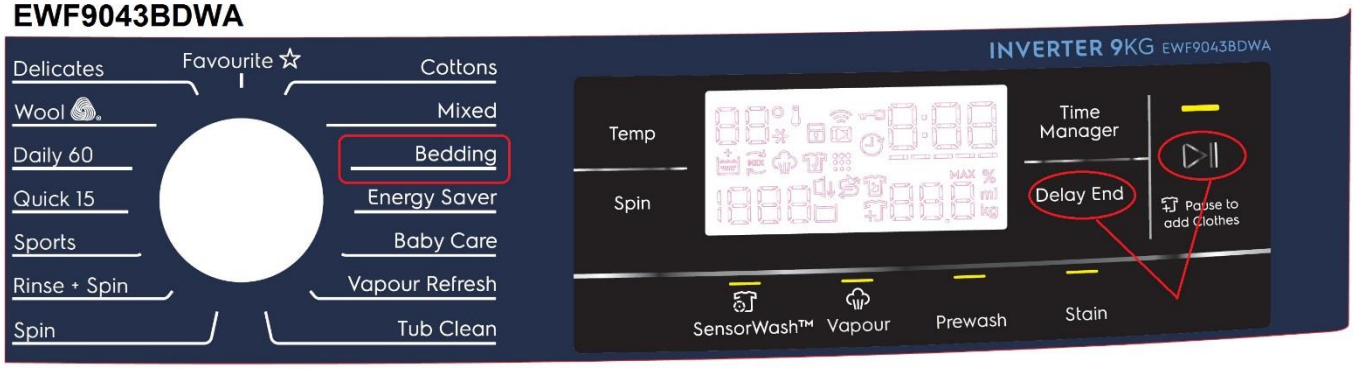

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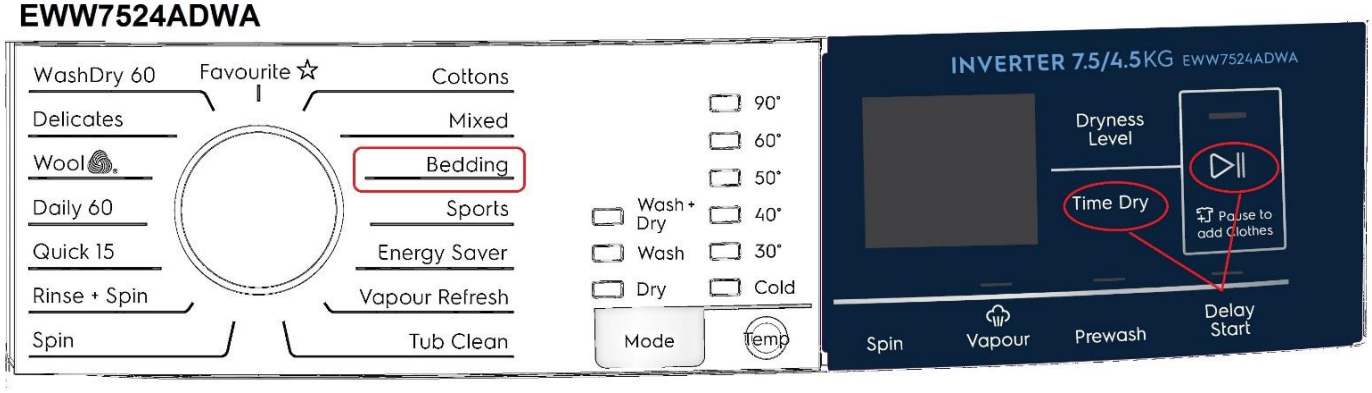

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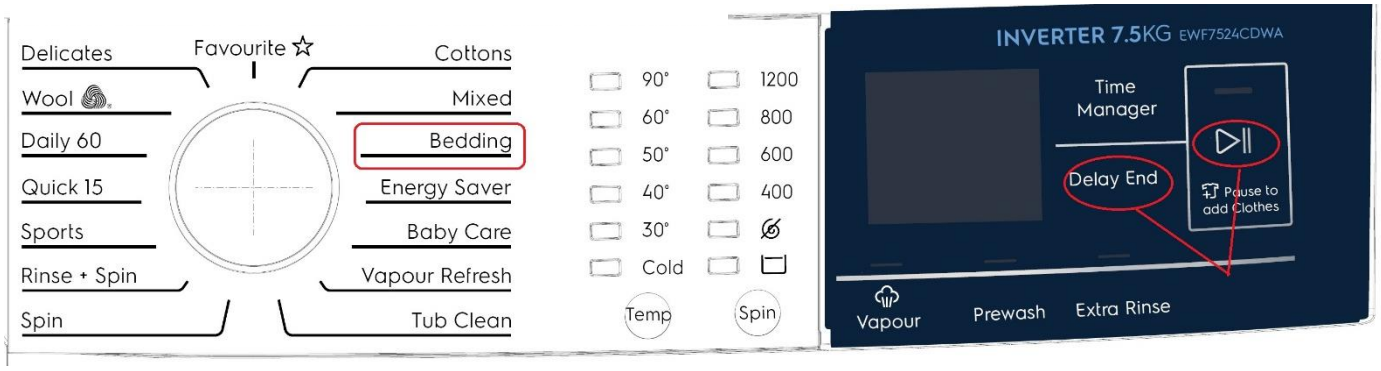

DIAGNOSTICS MODE

This mode is used in several conditions:

- In factory assembly line to perform a manual test of the machine functionality (final assembly test).
- By service people to check for faults and repair the machine.
- In the labs to check the right machine functionality.

To access Diagnostics Mode for each model:

	DIAGNOSTICS MODE
To access Diagnostics Mode Power ON the machine then within 7 seconds select:	"Cottons"
Then press & hold the 2 key combination buttons as shown below for each model simultaneously for 3 seconds until the display shows:	All LED's are lit up.
To Exit Diagnostics Mode:	Switch off the machine and switch it on again.
After exiting diagnostics mode, machine will start in Electrical test mode. To exit Electrical Test mode:	Switch off the machine and switch it on again.

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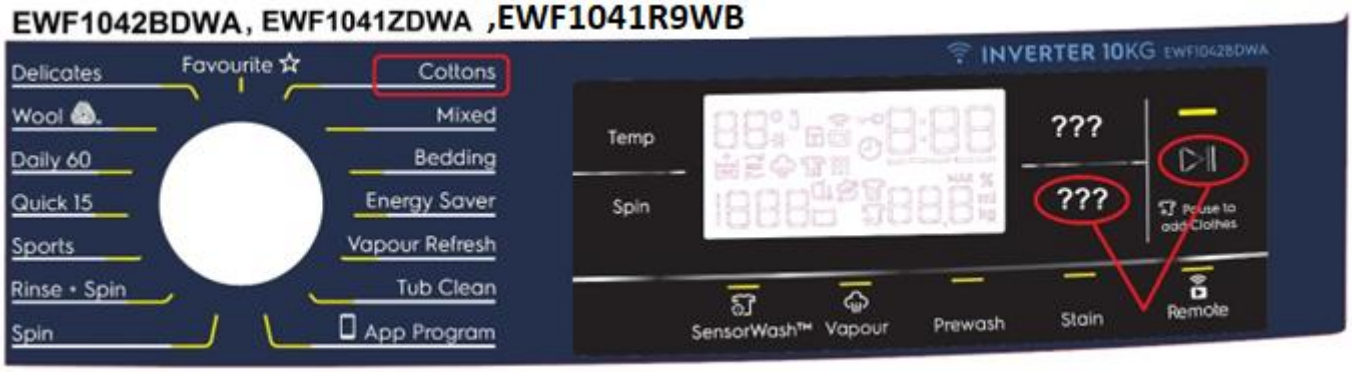

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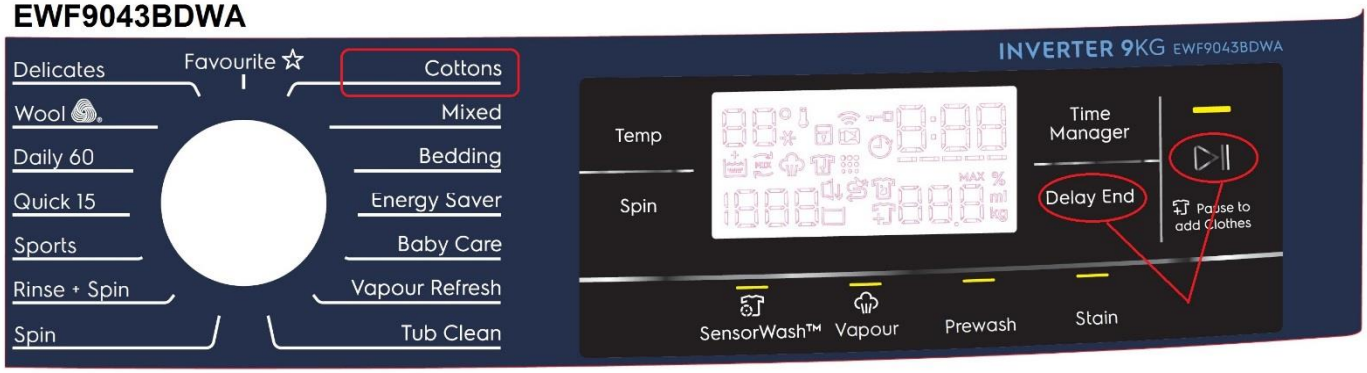

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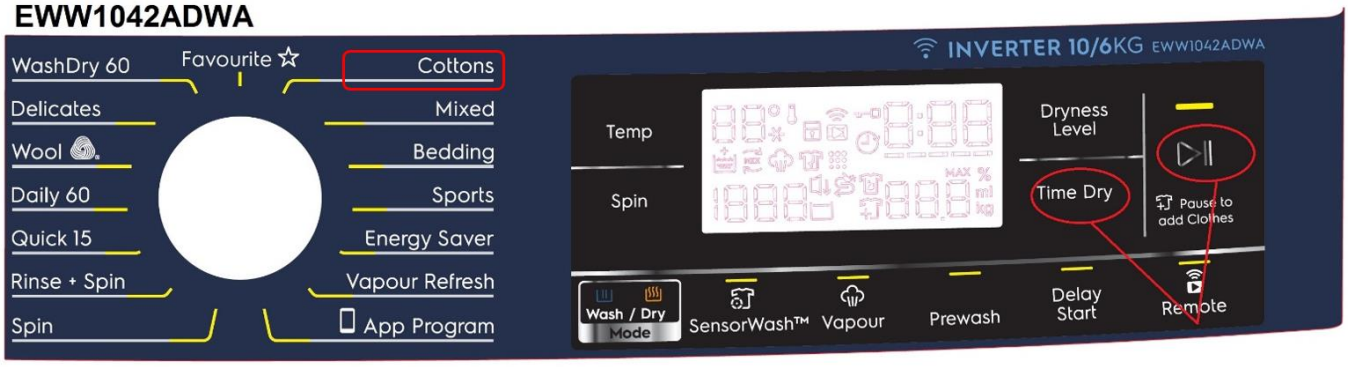

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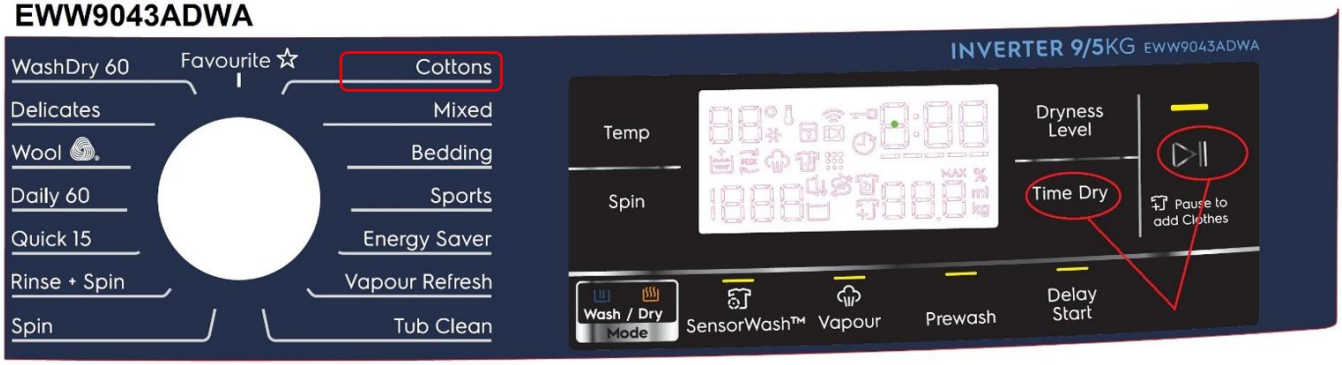

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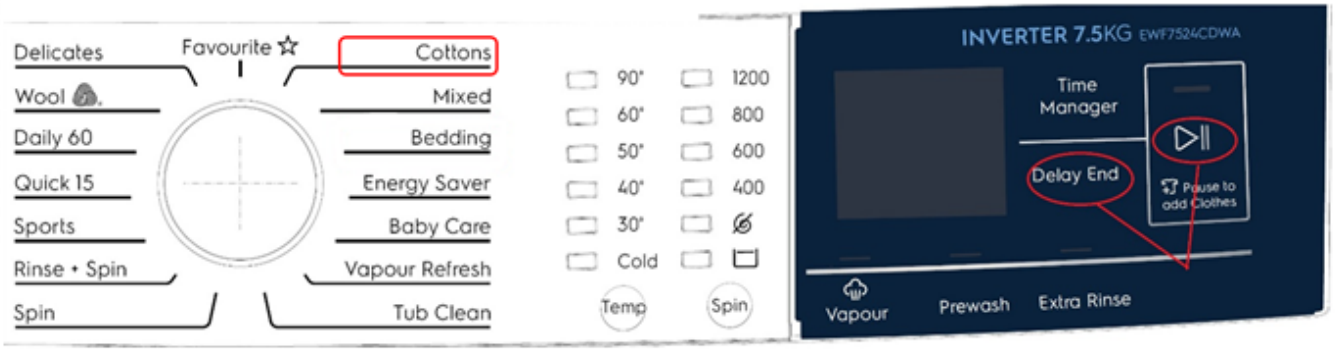

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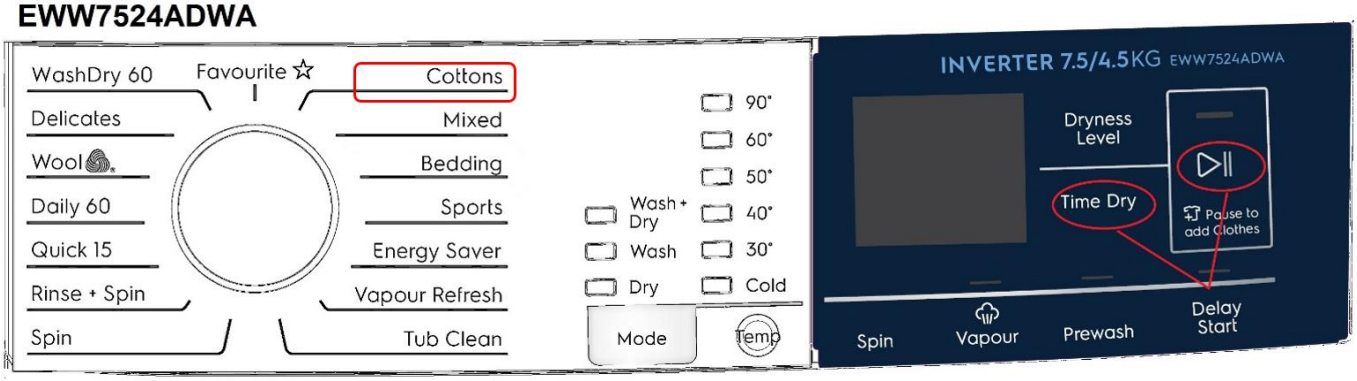


FOR ANY POSITION THERE IS A DIFFERENT TEST:		
POSITION	VERSION	DESCRIPTION
C1	EWX14	User Interface Test
C2	EWX14	Water load from wash compartment
d2 extended	EWX14	Water load from salt box, and pump activation (fast “Regeneration” process)
C3	EWX14	Water load from prewash compartment
C4	EWX14	Water load from softener compartment
C5	EWX14	Water load from third electro valve
C6	EWX14	Water load from fourth electro valve (hot electro valve if present)
C7	EWX14	Wash heater activation and weight sensor test (if present)
d7 extended	EWX14	Concentrated Wash pump activation (if present)
C8	EWX14	Spin phase at 250 rpm with water in the tub (leakage test)
C9	EWX14	Drain, level sensor calibration and spin phase at maximum spin speed
C10	EWX14	Drying loads activation/Ultra Aqua Stop device/ Water softer device test
d10 extended	EWX14	Niux/WI-FI test (only on models with WI-FI)
C11	EWX14	Last alarm display and possible reset

Information
Test cycles

The test cycles are working only if:

- There is no communication error between main board and user interface.
- The machine is configured with a valid configuration (no configuration alarm).
    - In case of MB-UI communication alarm, the only test available is the user interface test, because the user interface can be tested alone only supplying the 12 Volts.
    - Pressing together the key combination during one of the diagnostic cycles (from position 2 to 10) the machine will set in electric test mode at the next power on.
    - Pressing together the key combination in the last alarm display position (11), the alarm codes that were stored in memory will be reset.

During the test the LCD will show some data concerning the cycle being performed. The details are explained in the following tables, which also specify, for each selector position, the purpose of the associated test.

C01	USER INTERFACE TEST
Selector-test position:	**Position 1** in clockwise direction or in test sequence(LCD models)
Purpose of test:	To test the functionality of all lights, switches and buzzer.
Activated components	All LEDs, LCD display (if present) and buzzer
UI behaviour with display:	All LEDs in sequence, pushing a button correspondent LED is lit, the key number is shown on LCD and the buzzer sound. All LCD icons blink together • *See the descriptions below*
UI behaviour for S5 / TC5	All LEDS in sequence, pushing a button correspondent led is lit and the buzzer sound. • *See the descriptions below*
Working conditions:	There isn't any control to run the test (always active).

C02	DETERGENT COMPARTMENT TEST
Selector-test position:	**Position 2** in clockwise direction or in test sequence (LCD models)
Purpose of test:	To test the water loading from detergent compartment.
Activated components	Door lock device, wash electric valve, diverter (if present).
UI behaviour with display:	The clock digits report the actual water level (in mm) in the tub
Working conditions:	Door locked, water level lower then overload level, for max. 5 minutes.

C03	PREWASH COMPARTMENT TEST
Selector-test position:	**Position 3** in clockwise direction or in test sequence (LCD models)
Purpose of test:	To test the water loading from PREWASH compartment.
Activated components	Door lock device, prewash electric valve, diverter (if present)
UI behaviour with display:	The clock digits report the actual water level (in mm) in the tub
Working conditions:	Door locked, water level lower than overload level, for max. 5 minutes.

C04	SOFTENER COMPARTMENT TEST
Selector-test position:	**Position 4** in clockwise direction or in test sequence (LCD MODELS).
Purpose of test:	To test the water loading from SOFTENER compartment.
Activated components	Door lock device, wash and prewash electric valves.
UI behaviour with display:	The clock digits report the actual water level (in mm) in the tub
Working conditions:	Door locked, water level lower then overload level, for max. 5 minutes.

C05	THIRD ELECTROVALVE TEST
Selector-test position:	**Position 5** in clockwise direction or in test sequence (LCD MODELS).
Purpose of test:	To test the water loading from third electric valve.
Activated components	Door lock device, third electric valve.
UI behaviour with display:	The clock digits report the actual water level (in mm) in the tub
Working conditions:	Door locked, water level lower then overload level, for max. 5 minutes.

C06	FOURTH ELECTROVALVE TEST
Selector-test position:	**Position 6** in clockwise direction or in test sequence (LCD MODELS).
Purpose of test:	To test the water loading from fourth electric valve (hot electric valve if present).
Activated components	Door lock device, fourth electric valve.
UI behaviour with display:	The clock digits report the actual water level (in mm) in the tub
Working conditions:	Door locked, water level lower then overload level, for max. 5 minutes.

C07	WASH HEATER TEST
Selector-test position:	**Position 7** in clockwise direction or in test sequence (LCD MODELS).
Purpose of test:	To test the wash heater and weight sensor (if present)
Activated components	Door lock device, heating element, wash electric valve if water level lower then 1st levels, diverter (if present). If the weight sensor is present an additional water load of 1 litre is executed in order to evaluate if the sensor is able to measure the extra quantity of water loaded.
UI behaviour with display:	The clock digits report the actual temperature (in °C) in the tub as measured by the NTC.
Working conditions:	Door locked, water level above heating element, for max. 10 minutes or up to 90°C water temperature.

d07	CONCENTRATED WASH PUMP TEST
Selector-test position:	**Position 7** in clockwise direction + "start/pause" button pressure
Purpose of test:	To test the concentrated wash pump (if present)
Activated components	Door lock device, concentrated wash pump (if present).
UI behaviour with display:	The clock digits report the actual temperature (in °C) in the washing group as measured by the NTC.
Working conditions:	Door locked, water level above heating element.

C08	TUB LEAKAGE TEST
Selector-test position:	**Position 8** in clockwise direction or in test sequence (LCD MODELS).
Purpose of test:	To verify possible water leakage of the tub
Activated components	Door lock device, main motor and wash electric valve if water level lower than heating element level, diverter (if present).
UI behaviour with display:	The clock digits report the actual drum speed in rpm divided by 10.
Working conditions:	Door locked, water level above heating element, spin up to 250 rpm.

C09	DRAIN AND SPIN TEST
Selector-test position:	**Position 9** in clockwise direction or in test sequence (LCD MODELS)
Purpose of test:	To verify the machine during spin phase, the drain pump functionality, and pressure switch calibration procedure
Activated components	Door lock device, main motor, drain pump.
UI behaviour with display:	The clock digits report the actual drum speed in rpm divided by 10.
Working conditions:	Door locked, water level lower than minimum level, spin up to maximum speed.

C10	DRYING TEST (for WD only)
Selector-test position:	**Position 10** in clockwise direction or in test sequence (LCD MODELS)
Purpose of test:	To verify all the drying loads of the machine.
Activated components	Door lock device, drain pump, fan motor, condense valve, heating elements (half and full power).
UI behaviour with display:	Air temperature on the display (in °C). Toggle between upper and lower NTC temperature for traditional WD machines.
Working conditions:	Door locked, water level lower than anti-boiler level, up to 150°C measured on input NTC for max. 10 minutes.

C10	WATER SOFTENER DEVICE TEST (for models with this feature)
Selector-test position:	**Position 10** in clockwise direction or in test sequence (LCD MODELS)
Purpose of test:	To test the water softener module functionality performing a complete regeneration process.
Activated components	Door lock device, wash electric valve, water softener devices (diverter and pump).
UI behaviour with display:	The clock digits report the status of the density and level float (i.e. 0-0). Density on the left digit. Level on the right digit
Working conditions:	Door locked, water load to produce the brine and to regenerate the resins. Delay to allow the process to be complete, washing phase of brine box and drain.

d10	NIUX/WI-FI TEST (models with WI-FI feature)
Selector-test position:	**Position 10** in clockwise direction + "start/pause" button pressure
Purpose of test:	To test the Niux board (if present)
Activated components	Niux board (Wi-fi On/Off).
UI behaviour with display:	
Working conditions:	

C11	LAST ALARM DISPLAY AND POSSIBLE RESET
Selector-test position:	**Position 11** in clockwise direction or in test sequence (LCD MODELS)
Purpose of test:	Display three latest alarms, starting from the most recent. last alarm and possible reset.
Activated components	
UI behaviour with display:	Alarm complete code is shown in the format Exx (E 4 2)
UI behaviour without display:	🔴 Red and 🟡 yellow LEDs above Start/Pause button blink alternated according to alarm code
To Reset Alarm Codes Press and Hold for a few seconds the same key combination used for Diagnostics access	

WARNINGS

In normal mode, **final users can only see warnings that can be managed** without the need to call service.

These warnings are not considered permanent machine faults, but normally **temporary faults that requires user's attention.**

Such warnings are:

- ***E10*** **- water tap closed;**
- ***E20*** **- clogged draining filter;**
- ***E40*** **- door porthole not properly closed;**
- ***EF0***(*) **- detergent over dosing;**

There are also other **alarms that stops the machine and cannot be managed by the final user** but are shown as warnings:

- ***EF0***(*) **- water leakage (managed by Aqua Control System);**
- ***EH0*** **- low mains voltage/irregular mains frequency(self clears if supply related);**
- ***E91*** **- no communication between User Interface board and Main board;**
- ***E92 / E93 / E94*** **- software configuration;**

(*) EF0 code is used to show several alarms: water leakages, detergent overdosing, and unbalanced laundry load.

All the other warnings are not shown to final user because in many cases they are "false alarms" due to temporary abnormal conditions that the user sometimes neither notices and that could be simply solved switching off the machine.

The complete set of alarms are shown only in diagnostic mode for final test in factory assembly line or for after sales service personnel.

Information
Warnings

- Buzzer sounds (regardless of configuration) on alarm presence only for warnings that are shown to final user (E10, E20, E40, E90, EF0), mains supply alarms excluded (EH0).
- Buzzer sounds (also if deactivated by customer via buttons combination) with a specific sequence of 3 short beeps about every 20 seconds for maximum 5 minutes.
- Stand-by mode is disabled on alarm presence only for warnings that are shown to customer.
- Warning code is displayed as long as the fault condition is present.
- For the first three codes (E10, E20, E40), the warning puts the machine in pause state:
- In some rare cases, other warning codes could be displayed to the customer, such as E91 – communication failure between electronic boards; in this case if failure repeats after unplugging/plugging machine, after sales service needs to be contacted.

DIGITS DISPLAY

The warnings are displayed on the **7-segments digits** display used to show the cycle time.

A specific code appears on digits while the buzzer sounds (also if deactivated by customer via buttons combination) with a specific sequence of 3 short beeps about every 20 seconds for maximum 5 minutes.

After the problem has been solved, pressing Start/Pause push button the warning code is not shown anymore, buzzer stops sequence and cycle restarts.

Standard warnings codes that can be shown to final user, with related actions to perform, are the following:

Displayed code	Warning condition
E10	*Water loading timeout. Check if water inlet tap is open*
E20	*Water draining timeout. Check if draining filter is clogged*
E40	*Door locking timeout. Check if door porthole is properly closed*
E91	*No communication between User Interface and Main boards. Switch off and on*
E92 / E93 / E94	*Software configuration. Main board has not been correctly programmed.*
EF0	*Aqua Control sensor active: water leakages / Detergent overdosing(*) (if configured)*
EH0	*Low mains voltage or irregular mains frequency (out of standard working range). Wait for stable mains supply conditions.*

Alarm example

After the problem has been solved, pressing the **Start/Pause** push button the warning message is not shown anymore, buzzer stops the sequence and the cycle restarts.

ALARMS

One of the main requirements of the diagnostic system is to be transparent to the final user except for some most common warning related to the door handling and water inlet and drain management.
To increase the flexibility of the system it was introduced the possibility to enable/disable the alarms display by the machine configuration in order to cover requirement as field test context, particular countries requirement:

Information
Safe condition

- In alarm condition, except when specified, the door is opened if there are safety conditions:
  - Water level lower than specific level.
  - Water temperature lower than 55°C.
  - Motor steady stopped.
    - Some alarms require a drain cycle activation in order to put the machine in a safe condition and to open the door. This **safety drain cycle** has an automatic cool-down phase (when water temperature is over than 65°C) and drain pump activation until virtual AB level is empty with a timeout of 3 minutes.
    - Other alarms performs a **safety load cycle** (filling until 1 level) in order to cover the heating element and put the machine in a safe condition.

All alarms display are enabled during diagnostic test/cycles. They are displayed on the TTE digits of the display (if available) and on the red/yellow LEDs mounted beside the START key.

If the WM/WD is in normal mode and an alarm must be displayed according to the configuration:

- The START Led (red) blinks regularly with a 0.5 sec on – 0.5 sec off frequency.
- If a display is present the error code is drawn in the TTE digits using the format “E” + alarm family digit + number.

In case of Series 9 or (LCD MODELS), some alarms considered as final customer warnings are shown only with a specific message on text line.

If the WM/WD is in diagnostic mode and an alarm is raised, the code is always shown regardless of the configuration.

Information
"Eb3" is shown like "EH3"

Please note that writing an alarm code on the LCD panels, all occurrences of "b" are replaced by "H" in order to avoid mistaking the "6" symbol, for instance "Eb3" is shown like "EH3".

Last Alarm Reading and Reset

The last alarm can also be displayed also when the user pushes the "special key" combination (ie: diagnostics access keys) while the board is in normal mode or when the selector knob is set to the 11th position while the board is in diagnostic mode.

Information
"last alarm reading and reset"

- While this mode is set, it's possible to read the code of the three latest alarms, starting from the most recent.
- Each time the leftmost key in the "special key" combination is pressed, the UI displays the previous alarm.
- Pressing the rightmost key (START/PAUSE) button in the "special key" combination displays the next latest alarm.

ALARMS TABLE

The alarm codes listed in the table below are divided by platform: **EWX11**, **EWX13**, **EWX14**.

ALARM CODE	ALARM DESCRIPTION	ENABLED			FAULT CONDITION	POSSIBLE¶FAULT	MACHINE¶ACTION/STATUS	RESET KEY
		EWX11	EWX13	EWX14				
E11	Difficulties in water fill for washing	YES	YES	YES	Water load timeout expired (load timeout for water loads at level)	Tap closed or water flow too low Wrong drain pipe position Water inlet valve defective Air trap system leaking Pressure switch defective Wiring or main board defective	Cycle Paused with door locked	START RESET
E12	Water load problems during drying cycle	YES	YES	YES	Water load timeout expired during fabric detach phase (5 minutes - closed tap test)	Water tap closed or water flow too low Wrong drain pipe position Water inlet valve defective Air trap system leaking Pressure switch defective Wiring or main board defective	Cycle Paused with door locked	START RESET
E13	Water leakage	YES	YES	YES	Global water load timeout expired (maximum water quantity reached)	Wrong drain pipe position Water flow too low Water inlet valve defective Air trap system leaking Air trap systems clogged Pressure switch defective	Cycle Paused with door locked	START RESET
E21	Difficulties in draining for washing	YES	YES	YES	Water drain timeout expired (measured for each drain phase of a washing cycle)	Drain pipe blocked up Blocked/dirty filter Drain pump defective Pressure switch defective Wiring or main Board defective Drain pump rotor locked	Cycle Paused (after 2 attempts)	START ON/OFF RESET
E22	Water drain problems during drying cycle	YES	YES	YES	Virtual anti-boiler pressure switch ON during a drying cycle	Drain pipe blocked up Blocked/dirty filter Drain pump defective Pressure switch defective Wiring or main Board defective	Cycle Paused	START RESET
E23	Drain pump triac failure	YES	YES	YES	Incongruence between drain pump triac sensing and triac status	Drain pump defective Wiring or main board defective	Safety Drain cycle Cycle stops with door unlocked	RESET
E24	Drain pump triac sensing failure	YES	YES	YES	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle Cycle stops with door unlocked	RESET

ALARM CODE	ALARM DESCRIPTION	ENABLED			FAULT CONDITION	POSSIBLE¶FAULT	MACHINE¶ACTION/STATUS	RESET KEY
		EWX11	EWX13	EWX14				
E25	Aqua control sensing failure	-	YES	YES	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle Cycle stops with door unlocked	RESET
E31	Electronic pressure switch faulty	YES	YES	YES	Frequency of electronic pressure switch out of limits	Pressure sensor defective Wiring or main Board defective	Cycle blocked with door locked	RESET
E32	Electronic pressure switch calibration problems	YES	YES	YES	Frequency of electronic pressure switch not stable during draining phase	Water inlet valve defective Air trap system leaking Pressure switch/sensor defective Drain pipe blocked up Blocked/dirty filter Drain pump defective Wiring or main board defective	Cycle Paused	START RESET
E35	Water Overload	YES	YES	YES	Overload pressure switch on full state for a time longer than 15 seconds	Water inlet valve defective Air trap systems leaking Pressure switch defective Wiring or main board defective	Cycle blocked Safety drain cycle Drain pump always in operation (5 minutes ON, 5 minutes off, etc)	RESET
E38	Air trap system clogged	YES	YES	YES	Water level doesn't change for at least 30 sec. during drum rotations	Air trap system clogged Pressure sensor pipe clogged Motor belt broken	Heating Phase skipped	RESET
E41	Door opened	YES	YES	YES	Door lock timeout expired (20 seconds)	Door lock device defective Wiring or main board defective	Cycle Paused	START RESET
E42	Door lock device failure	YES	YES	YES	Door still locked when opening (timeout of 4 minutes)	Door lock device defective Wiring or main board defective Current leakage between heater element and earth	Cycle Paused	START RESET
E43	Door lock device triac failure	YES	YES	YES	Incongruence between door lock device triac sensing and triac status	Door lock device defective Wiring or main board defective	Safety Drain cycle activation Cycle blocked	RESET
E44	Door closed sensing failure	YES	YES	YES	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle activation Cycle blocked	RESET
E45	Door triac sensing failure	YES	YES	YES	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle activation Cycle blocked	RESET
E51	Motor triac short circuit	-	YES	-	Motor triac faulty (in short circuit)	Main board defective Current leakage from motor or wiring	Cycle blocked after 5 attempts with door unlocked	ON/OFF
E52	Tachometer faulty	YES	YES	YES	Bad or no signal from tachometer	Motor defective Motor Wiring or Motor Control board defective	Cycle blocked after 5 attempts with door locked	ON/OFF RESET

ALARM CODE	ALARM DESCRIPTION	ENABLED			FAULT CONDITION	POSSIBLE¶FAULT	MACHINE¶ACTION/STATUS	RESET KEY
		EWX11	EWX13	EWX14				
E53	Motor triac sensing failure	-	YES	-	Wrong input signal to microprocessor	Main board defective	Cycle blocked	RESET
E54	Motor relay burned (always closed)	-	YES	-	Voltage level on motor triac sensing too high when all relays are switched off (Not enabled in ELECTRIC TEST MODE)	Main board defective Current leakage from motor or wiring	Cycle blocked after 5 attempts	RESET
E57	FCV Current trip	YES	-	YES	High current on inverter (>15A)	Motor defective Motor Wiring or Motor Control board defective	Cycle blocked after 5 trials with door locked	ON/OFF RESET
E58	FCV Over current	YES	-	YES	High current on motor phase (>4.5A)	Motor defective, Motor Wiring or Motor Control board defective, abnormal working condition	Cycle blocked after 5 trials with door locked	ON/OFF RESET
E59	FCV Not Following	YES	-	YES	No tacho signal from tachometer for 3 seconds	Motor defective Motor Wiring or Motor Control board defective	Cycle blocked after 5 trials with door locked	ON/OFF RESET
E5A	FCV Heating	YES	-	YES	High temperature on Heat Sink (>88°C) or NTC of FCV board open	Over load condition, Motor Control board defective	Cycle blocked after 5 trials with door locked	ON/OFF RESET
E5C	FCV Over Voltage	YES	-	YES	Dc bus voltage above the allowed value (430V)	Motor Control board defective Power line voltage too high	Cycle blocked after 5 trials with door locked	ON/OFF RESET
E5D	FCV Unknown Message	YES	-	YES	Message received by FCV is not correct	Transmission line noisy / FCV defective MB defective Communication wiring problems	---	ON/OFF RESET
E5E	FCV-MB Communication	YES	-	YES	Protocol communication between FCV and MB not aligned	Wiring defective FCV defective, WD defective UI defective MB defective, Weight defective	Cycle blocked after 5 trials	ON/OFF RESET
E5F	FCV Fault	YES	-	YES	FCV control board is continuously in reset	FCV control board defective or communication wiring problems or main board defective	Cycle blocked after 5 trials with door unlocked	ON/OFF RESET
E5H	FCV Under Voltage	YES	-	YES	Dc bus voltage bellow the allowed value (175V)	FCV mains wiring Motor Control board defective	Cycle blocked after 5 trials with door locked	ON/OFF RESET
E61	Insufficient heating during washing cycle	YES	YES	YES	Washing heating timeout expired	Washing NTC defective Washing heater element defective Wiring or main board defective	Heating phases skipped	START RESET

ALARM CODE	ALARM DESCRIPTION	ENABLED			FAULT CONDITION	POSSIBLE¶FAULT	MACHINE¶ACTION/STATUS	RESET KEY
		EWX11	EWX13	EWX14				
E62	Overheating during washing cycle	YES	YES	YES	Water temperature higher than 88°C for a time longer than 5 minutes	Washing NTC defective Wash heater element defective Wiring or main board defective	Safety Drain cycle Cycle stopped with door unlocked	RESET
E66	EWX11: Heating element relay (versus Neutral) failure EWX13: Heater relay failure (active only for WD) EWX14: Heater or drying relay failure	YES	YES	YES	Incongruence between heater relay sensing and relay status	EWX11, EWX13: Main board defective Current leakage between wash heater element and earth EWX14: Main board defective Current leakage between Wash/drying heater element and earth	Safety load cycle. Stop of the cycle with door locked	ON/OFF RESET
E68	Ground current leakage	YES	YES	YES	Voltage value on heater sensing different from Vmains value	EWX11, EWX13: Current leakage between wash heater element and earth EWX14: Current leakage between wash or dry heater element and earth	Cycle blocked with door opened	START RESET
E69	Washing heating element opened	YES	YES	YES	Voltage value different from Vmains value when heating element is not powered during the cycle execution	Wash heating element faulty (thermo fuses opened) Wiring defective Main board defective	No actions	START ON/OFF RESET
E6A	Heating relay sensing failure	YES	YES	YES	Wrong input signal to microprocessor	Main board defective Ultra aqua stop device or wiring faulty	Cycle blocked with door locked	RESET
E6H (E6B)	Heater wd relay (versus Line) failure	YES	YES	-	Incongruence between heater relay sensing and relay status	Main board defective Wash heating element faulty Wiring defective	Safety load cycle Stop of the cycle with door locked	ON/OFF RESET
E71	Washing NTC failure	YES	YES	YES	Wrong input signal to microprocessor (open circuit or short circuit)	Washing NTC defective Wiring or main board defective	Heating phases skipped	START RESET
E72	Output drying NTC failure	YES	YES	YES	Voltage value out of limit (open circuit or short circuit)	Output drying NTC defective Wiring or WD board defective	Drying heating phases skipped	START RESET
E73	Input drying NTC failure	YES	YES	YES	Voltage value out of limit (open circuit or short circuit)	Input drying NTC defective Wiring or WD board defective	Drying heating phases skipped	START RESET
E74	Washing NTC badly positioned	YES	YES	YES	The washing temperature does not increase	Washing NTC sensor badly positioned NTC sensor faulty Wiring or main board defective	Heating phases skipped	RESET

ALARM CODE	ALARM DESCRIPTION	ENABLED			FAULT CONDITION	POSSIBLE¶FAULT	MACHINE¶ACTION/STATUS	RESET KEY
		EWX11	EWX13	EWX14				
E75	Drying Capillary NTC failure	YES	-	-	Voltage value out of limit (open circuit or short circuit)	Capillary NTC defective Wiring or WD board defective	Drying heating phases skipped	START RESET
E76	Drying auxiliary NTC failure	YES	-	-	Voltage value out of limit (open circuit or short circuit)	Auxiliary NTC defective Wiring or WD board defective	Drying heating phases skipped	START RESET
E83	Wrong selector reading	YES	YES	YES	Selector position code value not supported by the configuration data	Wrong configuration data on microprocessor Main board defective	Reset cycle	START RESET
E84	EWX13: Recirculation pump / Motor fan triac sensing failure EWX14: Recirculation pump triac sensing failure	-	YES	YES	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle Cycle stops with door unlocked	RESET
E85	EWX13: Recirculation pump / Motor fan triac alarm EWX14: Recirculation pump triac alarm	-	YES	YES	Incongruence between triac sensing and triac status	EWX13: Recirculation pump or motor fan defective Wiring or main board defective EWX14: Recirculation pump defective Wiring or main board defective	Safety Drain cycle Cycle stops with door unlocked	RESET
E86	Selector table configuration error	YES	YES	YES	Incorrect configuration of the User Interface	Wrong or missing selector configuration data on UI microprocessor - User interface defective	---	START ON/OFF RESET
E87	User Interface microcontroller fault	YES	YES	YES	User interface microcontroller damaged	User interface defective	No actions to be performed. If still present replace the User Interface Board	START ON/OFF RESET
E91	UI-MB communication error	YES	YES	YES	Communication problem between UI and MB	Wiring defective, or UI, MB, Motor, WD, Weight board defective,	---	RESET
E92	UI-MB protocol incongruence error	YES	YES	YES	Protocol communication between UI and MB not compatible	Main board incompatible with user interface board	Cycle blocked	OFF/ON
E93	Machine configuration error	YES	YES	YES	Incorrect configuration of appliance	Incorrect configuration data Main board defective	Cycle blocked	OFF/ON
E94	Cycle Configuration error	YES	YES	YES	Incorrect configuration of washing cycles	Incorrect configuration data Main board defective	Cycle blocked	OFF/ON

ALARM CODE	ALARM DESCRIPTION	ENABLED			FAULT CONDITION	POSSIBLE¶FAULT	MACHINE¶ACTION/STATUS	RESET KEY
		EWX11	EWX13	EWX14				
E97	Incongruence between selector and cycles configuration	YES	YES	YES	Incongruence between program selector and cycle configuration	Incorrect configuration data Main board defective	Cycle blocked	RESET
E98	FCV_MB protocol incong. Error	YES	YES	YES	Protocol communication between FCV and MB not aligned	Main board incompatible with FCV control board	Cycle blocked	OFF/ON
E9C	User Interface Configuration fault	YES	YES	YES	Configuration wrongly or not received	Display Board	No actions	ON/OFF START RESET
E9E	UI touch fault	YES	YES	YES	Touch display not working	Display Board	No actions	OFF/ON
EA1	DSP system failure	YES	YES	YES	Not drum position sensing during motor activation	Wiring or main board defective DSP sensor failure Main motor belt broken	Skip of the drum positioning phase	START RESET
EA6	DSP door open failure	YES	YES	YES	Not impulses coming from DSP sensor during motor activation	Wiring or main board defective DSP sensor failure Main motor belt broken Lid open	Cycle paused	START RESET
EAA	Niux SSH serialization alarm	-	-	YES	Missing/not correct Niux serialization data information.	Serialization process not completed successfully	Connectivity disabled	ON/OFF START RESET
EAH (EAB)	Niux communication alarm	-	-	YES	Communication problem between UI and Niux	UI or Niux board defective, or wiring between this board defective	Connectivity disabled	ON/OFF START RESET
EAC	Niux always on alarm	-	-	YES	Niux board always switched on	UI board	No actions	ON/OFF START RESET
EAD	Serialization Mismatch alarm	-	-	YES	Serialization data not aligned between boards.	Electronic Boards exchanged between appliances	Connectivity disabled	START ON/OFF RESET
EH1 (EB1)	Power supply frequency out of limits	YES	YES	YES	Power supply period lower/higher than configured values	Wrong or disturbed Power Supply line. Main board defective	Wait for nominal power supply conditions	OFF/ON
EH2 (EB2)	Power supply voltage too high	YES	YES	YES	MAIN_V sensing input voltage value greater than configured value	Wrong or disturbed Power Supply line. Main board defective	Wait for nominal power supply conditions	OFF/ON

ALARM CODE	ALARM DESCRIPTION	ENABLED			FAULT CONDITION	POSSIBLE¶FAULT	MACHINE¶ACTION/STATUS	RESET KEY
		EWX11	EWX13	EWX14				
EH3 (EB3)	Power supply voltage too low	YES	YES	YES	MAIN_V sensing input voltage value lower than configured value	Wrong or disturbed Power Supply line. Main board defective	Wait for nominal power supply conditions	OFF/ON
EH4 (EB4)	Zero Watt relay alarm	YES	YES	-	Zero Watt relay not working and machine still switched on	Main board defective	No actions	OFF/ON RESET
EHC (EBC)	Line WD relay alarm	YES	-	-	Incongruence between line WD relay sensing and relay status	Main board defective	Safeties drain cycle Stop of the cycle with door opened	ON/OFF RESET
EHD (EBD)	Heater WD relay sensing alarm	YES	YES	YES	Wrong input signal to microprocessor	Main board defective	Cycle blocked with door locked	RESET
EHE (EBE)	FCV Relay failure	YES	-	YES	Incongruence between safeties relay sensing and FCV relay status	FCV Relay defective FCV sensing circuit defective Wiring or main board defective	Safety Drain cycle activation, stop of the cycle with door opened	RESET
EHF (EBF)	FCV relay sensing failure	YES	-	-	Input voltage value on microprocessor always to 0V or to 5V	Main board defective	Safety Drain cycle activation, stop of the cycle with door opened	RESET
EC1	Electro valves blocked	YES	YES	YES	Flow meter running with electro valves switched OFF	Electro valves defective/blocked Main board defective	Cycle blocked Water drain up to anti-boil level or max. 5 minutes with door locked. When O.L. blocked drain pump ON/OFF for 5/5 minutes continuously	RESET
EC2	Weight sensor communication error	YES	-	YES	Communication problem between Weight sensor and MB	Wiring defective Weight Sensor defective MB defective	No actions	START RESET
EC3	Weight sensor fault	YES	-	YES	Signal coming from sensor out of limits	Weight sensor defective Main board defective Wiring	No actions	START RESET
EC4	Current sensor failure	-	YES	-	Current sensor for AGS estimations faulty.	Main board defective	Spinning reduced at safety speed value	RESET
EC8	TY5 triac failure	-	-	YES	Incongruence between TY5 triac sensing and triac status	TY5 triac load device defective (motor fan/hot valve/water softener board) Wiring or main board defective	Safety Drain cycle activation Cycle blocked	RESET
EC9	TY5 triac sensing failure	-	-	YES	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle activation Cycle blocked	RESET

ALARM CODE	ALARM DESCRIPTION	ENABLED			FAULT CONDITION	POSSIBLE¶FAULT	MACHINE¶ACTION/STATUS	RESET KEY
		EWX11	EWX13	EWX14				
ECA	Detergent Dispenser Water Softener board communication alarm	-	-	YES	No communication between Main board and DD-WS board	DD-WS board defective Wiring between MB and DD-WS, Main Board defective, UI defective, Weight defective, FCV defective	Cycle blocked	START ON/OFF RESET
ECH (ECB)	Detergent Dispenser Water Softener board failure	-	-	YES	DD-WS board defective: diverter faulty, microcontroller damaged, power supply out of limits	WSD assembly defective	Cycle blocked	START ON/OFF RESET
ECC	WS Sensor failure	-	-	YES	No changes in Level or Density Floats	Level or Density Float defective or mechanically blocked Detergent Dispenser Water Softener board defective, wiring between sensors and DD-WS	Cycle blocked	START ON/OFF RESET
ECD	WS pump failure	-	-	YES	Incongruence between driving and sensing circuit	Brine pump defective, wiring between pump and DD-WS, DD-WS board faulty	Cycle blocked	START ON/OFF RESET
ECE	Auto-dosing board failure	-	-	YES	no communication between PB and auto-dosing board	Auto-dosing board defective Wiring between MB/UI and auto-dosing Main Board defective UI defective	Cycle blocked	ON/OFF RESET
ED1	WD board communication alarm	YES	YES	YES	No communication between Main board and WD board	WD board defective Wiring between MB and WD Main Board defective, UI defective Weight defective, FCV defective	Cycle blocked	START ON/OFF RESET
ED2	WD heating element1 relay failure	YES	YES	YES	Incongruence between WD heating1 relay sensing and heating1 relay status	WD board defective Wiring, thermostats defective Main Board defective	Skip drying phase	START ON/OFF RESET
ED3	WD heating element1 sensing relay failure	YES	YES	YES	Signal out of the limits	WD board defective	Skip drying phase	START ON/OFF RESET
ED4	WD heating element2 relay failure	YES	YES	YES	Incongruence between WD heating2 relay sensing and heating1 relay status	WD board defective Wiring, thermostats defective Main Board defective	Skip drying phase	START ON/OFF RESET
ED5	WD heating element2 sensing relay failure	YES	YES	YES	Signal out of the limits	WD board defective	Skip drying phase	START ON/OFF RESET
ED6	WD thermostat sensing failure	YES	YES	YES	Signal of thermostat sensing out of limits	WD board defective	No actions	START ON/OFF RESET

ALARM CODE	ALARM DESCRIPTION	ENABLED			FAULT CONDITION	POSSIBLE¶FAULT	MACHINE¶ACTION/STATUS	RESET KEY
		EWX11	EWX13	EWX14				
ED7	WD thermostat failure	YES	YES	YES	Incongruence between heater and drying relay sensing.	Manual or automatic thermostat opened Wiring, WD board defective, drying heater element	No actions	START¶ON/OFF¶RESET
ED8	WD fan motor tachometer absent	YES	YES	YES	Bad or no signal from tachometer	Fan Motor defective Fan Motor Wiring or WD board defective	Skip drying phase	ON/OFF RESET
ED9	WD fan motor driving circuit alarm	YES	YES	YES	Incongruence between fan motor status and the driving circuit sensing signal	WD board defective	Skip drying phase	ON/OFF RESET
EDA	WD Power Supply alarm	YES	YES	YES	Power supply period lower/higher than configured values or power supply values out of limits	Wrong or disturbed Power Supply line. WD board defective	Wait for nominal power supply conditions	START ON/OFF RESET
EDH (EDB)	WDM microcontroller fault	YES	YES	YES	WDM microcontroller damaged	WDM board defective	No actions to be performed. If still present replace the WDM Board	START ON/OFF RESET
EDC	WDM heating element opened	YES	YES	YES	Incongruence between WDM heating 1 and 2 relay sensing	Drying heating elements opened, unplugged, or wiring	No actions	START ON/OFF RESET
EDD	WDM Ground Current leakage alarm	YES	YES	-	Line WD sensing out of nominal working thresholds	Current leakage between drying heater element and earth	Drying phases skipped.	START ON/OFF RESET
EDE	Turbidity & Conductivity sensor Communication error			YES	Comm error between T&C sensors and main board	Wiring or defective T&C sensor, or defective main board	No action	-
EDF	Turbidity & Conductivity sensor error			YES	Incongruence reading from T&C sensor	T&C sensor defective	No action	-
EE1	Fan current trip failure	YES	-	YES	The power module current immediately increases above 2.5 A.	Fan Wiring or Fan Control board defective	Cycle blocked	START ON/OFF RESET
EE2	Fan over current failure	YES	-	YES	The current of one fan phase increases above 0.8 A for a time of 0.6 ms	Fan defective Fan Wiring or Fan Control board defective Abnormal working condition (high friction on the fan)	Cycle blocked	START ON/OFF RESET
EE3	Fan over load alarm	YES	-	YES	This alarm is not managed (it cannot be set)	-	-	-

ALARM CODE	ALARM DESCRIPTION	ENABLED			FAULT CONDITION	POSSIBLE¶FAULT	MACHINE¶ACTION/STATUS	RESET KEY
		EWX11	EWX13	EWX14				
EE4	Fan not following alarm	YES	-	YES	This alarm is set if the fan isn't rotating at the speed imposed	Fan defective Fan Wiring or Fan Control board defective (abnormal working condition i.e. high friction on the fan)	Cycle blocked	START ON/OFF RESET
EE5	Fan under voltage alarm	YES	-	YES	This alarm is set if the voltage input on the board is below 160 Vrms for a time of 20 ms	The mains voltage is under 160 Vrms Fan control board defective	Cycle blocked	START ON/OFF RESET
EE6	Fan over voltage alarm	YES	-	YES	This alarm is set if the voltage input on the board is above282 Vrms for a time of 20 ms	The mains voltage is above 282 Vrms Fan control board defective	Cycle blocked	START ON/OFF RESET
EE7	Fan plug not connected	YES	-	YES	This alarm is set if one or more phase current are around zero for a certain time. A current phase must be under 20 mA for a time of 5 seconds.	Fan defective Fan Wiring or Fan Control board defective	Cycle blocked	START ON/OFF RESET
EE8	Fan NTC wrong temperature alarm	YES	-	YES	This alarm is set if the temperature near the power module of the fan board is above 109 C° for a time of 5 seconds or if the temperature is below -5C° for a time of 5 seconds	Fan Control board defective (Over load condition)	Cycle blocked	START ON/OFF RESET
EE9	Fan CFG not ready	YES	-	YES	This alarm is not managed (it cannot be set).	-	-	-
EEA	Fan power module failure	YES	-	YES	This alarm is not managed (it cannot be set).	-	-	-
EEB	Cooler Fan failure	YES	-	YES	This alarm is set when the Cooler sensing does not match the expected relay state or if the power line signal sensing is not valid (must toggle at line frequency)	Cooler Fan defective Cooler Fan wiring defective Fan Control board defective	No action	START ON/OFF RESET

ALARM CODE	ALARM DESCRIPTION	ENABLED			FAULT CONDITION	POSSIBLE¶FAULT	MACHINE¶ACTION/STATUS	RESET KEY
		EWX11	EWX13	EWX14				
EEC	Compressor failure	YES	-	YES	This alarm is set when the Compressor sensing does not match the expected relay state or if the power line signal sensing is not valid (must toggle at line frequency).	Compressor defective or thermal protection action Compressor wiring Fan control board faulty	No action	START ON/OFF RESET
EF1	Filter clogged warning	YES	YES	YES	Difficulties to drain. Virtual AB level remains in full state after an established time	Filter clogged or dirty Drain pipe clogged/kinked/too high	Warning displayed at the end of the cycle	START RESET
EF2	Foam warning	YES	YES	YES	Virtual AB level in full state during spin phase at the end of the washing phase	Excessive detergent dosing Drain filter dirty or clogged Drain pipe kinked or clogged	Alarm displayed after 5 attempts (if specific LED configured)	RESET
EF3	Aqua Control warning	YES	YES	YES	EWX11, EWX13: DRAIN_TY_S “low” if triac not activated and Aqua Control present on the machine EWX14: Aqua control sensing signal high (in appliance equipped with safety device)	EWX11: Water on the basement Aqua Control defective Drain pump thermal protection action EWX13, EWX14: Water on the basement Aqua Control defective	Drain pump activated	ON/OFF¶RESET
EF4	Water load low pressure	YES	YES	YES	Flow meter stooped with electro valves switched on	Tap closed/low pressure of incoming water	No actions	RESET
EF5	Load too unbalanced	YES	YES	YES	Final spin phase skipped due to a high unbalance load	Load unbalanced	No actions	START RESET
EF6	Safety reset	YES	YES	YES	MB microcontroller damaged	Main Board defective	No actions to be performed. If still present replace the Main Board	-
EF7	Drying Filter not present	YES	-	YES	Drying Filter not present or switch not working properly during a drying cycle	Drying Filter not closed Switch not working properly Switch wiring defective or Main Board defective	Pause	START RESET
EF8	Salt missing warning	-	-	YES	Insufficient salt quantity on salt box or defective water softener device	Water softener device, water softener sensors, or wiring defective Salt missing	No actions	START RESET

DEFINITION OF TERMS, ACRONYMS & ABBREVIATIONS

AB	Anti Boiling
CCF	Cycle Configuration File
D&L	Density & Level sensors
DD	Detergent Dispenser
DDWS	Detergent Dispenser assemblies with integrated a Water Softener
DM	Diverter Motor
DSP	Digital Signal Processors
DV	DiVerter
FCV	Field Control Vectorial, generally used to indicate **motor control board**
FM	Flow-Meter sensor
Hard EV	Electro-Valve to load hard water in the DD
Hot EV	Electro-Valve to load hot hard water directly into the tub
MB	Main board, Main board
MCF	Machine Configuration File
NTC	Negative Temperature Coefficient
PCB	Printed Circuit Board
RTO	Resin Tank Outlet to DV
Soft EV	Electro-Valve to load soft water in the DD
UI	User Interface
WD	Washer Dryer
WM	Washing Machine
WS	Water Softener
WSP	Water Softener Pump
T & C	Turbidity & Conductivity sensor

ALARMS SOFTWARE MANAGEMENT DESCRIPTION

E10

E11 – Washing Water Load Timeout

This alarm will be set when the water load timeout has been exceeded.
As on the previous platform EWX11 and EWX13, the new EWX14911 has foreseen several timeouts depending on current water level amount.

Precisely we have:

- 5 minutes of timeout from 0 to safety level (usually 35mm).
- 5 minutes of timeout from 35mm to AB level (usually 55mm).
- and 10 minutes of timeout from AB level to the target level defined on CTF.

This alarm forces a cycle pause, keeping the door closed.

This alarm can be reset pressing Start/pause button or resetting the current cycle by switching off.

It will not reset after a power fail.

E12 – Drying Water Load Timeout

Water load timeout (10 minutes) expired during drying phase.

At the beginning of drying phases is performed a water load at specific level (configurable in CDL) in order to test water load circuit. If this level is not reached before timeout expiration the alarm is set.

This alarm forces a cycle pause keeping the door closed.

This alarm can be reset pressing Start/pause button or resetting the current cycle by switching off.

It will not reset after a power fail.

E13 – Water leakage

The global load timeout has been exceeded.

This is a configurable timeout, calculated in order to avoid the reaching of the V_{max} water volume of the used group. The maximum water volume is a value depending on the group structure, while the time is calculated considering the inlet water flow. It is set after each draining phase and decreased every time a valve is activated, also during refilling.

This alarm forces a pause action, and the door will be kept closed.

This alarm can be reset pressing Start/pause button or resetting the current cycle by switching off.

It will not reset after a power fail.

E20

E21 – Wash Water Drain Timeout

This alarm happens when the water drain timeout (managed for each drain phase) has been exceeded.

The timeout is a configurable value set at the beginning of each drain phase and decreased until the pressure switch is on the empty state. The level checked during each drain phases is specific and used only to manage this alarm.

If the timeout has expired the pump is switched off for 1 minute while the pump can cool itself. After that the drain phase was repeated from the beginning.

The alarm will be set after 3 consecutive trials. The second attempt foreseen a pause of 10 minutes instead of 1 to avoid a useless temperature increase of the pump.

This alarm forces a cycle pause and it is reset coming back from a power fail.

This alarm can be reset also pressing Start/pause button or resetting the current cycle.

The alarm can be set according to water drain flow values.

The machine calculates the drain pump flow rate monitoring the water level every 5 seconds.
If the flow rate value decreases less a configured threshold the alarm will be set.

E22 – Drying Water Drain Timeout

This alarm is set if during drying phases the first level (virtual level) is reached. This condition can happen due to drain pump defective, drain pipe blocked up, dirty/blocked filter or drying condenser blocked up.

The alarm will be set after 3 consecutive trials. The second attempt foreseen a pause of 10 minutes instead of 1 to avoid a useless temperature increase of the pump.

This alarm forces a cycle pause and it is reset coming back from a power fail.

This alarm can be reset by pressing Start/pause button or resetting the current cycle by switching off.

E23 – Drain Pump Triac Failure

There is an incongruent situation between the sensing of the triac that drives the drain pump and the output given by the microprocessor.

It can happen in several ways:

- the pump is disconnected (or the thermal protection is opened)
- or the triac is not connected to the load (hardware fault on the board).
- the triac is not driven by the microprocessor while the sensing reads a lower value (< 4,40 Volt) on the negative half wave of the signal. It can happen when the triac is short circuited.

The alarm appears if these situations persist for 3 seconds during 2 consecutive trials performed after a pause of 10 seconds.

If the machine is in set-up the alarm is set immediately after the first trial.

This alarm management performs the safety drain cycle and forces the door opening.

This alarm action is done only in case of triac not driven. In this case the pump can start properly and drain the water. In this condition we are able to open the door and remove the power to the pump. In the other case we don't perform the action (safety drain) to avoid useless overheating of the pump.

This alarm can be reset pressing Start/pause button or resetting the current cycle by switching off the machine.

E24 – Drain Pump Triac Sensing Failure

The sensing of the drain pump triac gives to the microprocessor a signal out of the limits.

With the new sensing circuit is not possible to read continuously a signal fixed at less 3.5 Volt.

In fact when the pump is switched off on the negative half wave we have to read a signal close to 5 Volts.

This alarm management performs the safety drain cycle and forces the door opening.

This alarm can be reset by pressing Start/pause button or resetting the current cycle by switching off the machine.

E25 – Aqua Control Sensing Failure

The sensing of the aqua control system gives to the microprocessor a signal out of the limits.

With the new sensing circuit is not possible read continuously a signal fixed at 5 Volt.

In fact when the switch in opened on the negative half wave we have to read a signal closed to 0 Volts.

This alarm management performs the safety drain cycle and forces the door opening.

This alarm can be reset pressing Start/pause button or resetting the current cycle by switching off the machine.

E31 – Electronic Pressure Switch Failure

Frequency coming from electronic pressure switch is out of acceptable limits for at least 5 seconds. The alarm will be set after 2 consecutive attempts performed after a pause of 10 seconds.

Valid values are 44.676 ÷ 36.130 Hertz.

This fault can be caused by a defective electronic pressure switch or due to wiring/main boards problems. This alarm is not active in set-up phase.

This alarm forces a cycle stop with door locked and can be cancelled by resetting the current cycle by switching off the machine.

E32 – Electronic Pressure Switch Calibration Problems.

At every cycle start, the electronic control performs a calibration of electronic pressure switch.

This procedure is executed at the beginning of a new cycle (during initial draining step) and checks continuously the signal frequency coming from the electronic pressure switch.

If this signal changes continuously value (variation greater than 2 mm of water) until timeout expiration the alarm is set.

The timeout value is configurable on the GCF file

Possible causes of this alarm can be:

- Defective water inlet valves;
- Air trap system leaking;
- Pressure switch/sensor defective;
- Wiring or main board defective;

This alarm forces:

- a cycle pause;
- and a new calibration on next cycle;

This alarm can be reset also pressing Start/pause button or resetting the current cycle.

Cannot be cancelled switching off the machine.

The calibration procedure is also forced after a diagnostic cycle or on the cycles executed after the set of this alarm. In this case, the machine will perform a calibration step at every change phase until the procedure ends with success.

E35 – Water Overload

The overload pressure switch (virtual level managed by electronic pressure sensor) is on full state for a time longer than 15 seconds.

When the machine is in alarm situation, the door is locked; the drain pump is activated until we will reach the empty level (anti-foam virtual switches open) or, in any case, for 5 minutes.

In case of abnormal behaviour (the level never goes to empty state) the pump is turned off at least for 5 minutes. It's switched-on again when overload levels switches-on.

This alarm cannot be reset by pressing Start/Pause button.

To clear the alarm is necessary to reset the current cycle by switching off the machine.

This alarm cannot be set during stand by because the pressure switch in not powered by 5 Volts.

E38 – Air Trap Clogged

This alarm is set when we have no water level change during motor movement phases.

The alarm appears if the pressure remains stable for at least 30 seconds.

This condition can be caused by different causes:

- a real air trap clogged,
- a level sensor pipe clogged,
- a motor belt broken,
- or due to a motor tachometer problem (broken wiring).

This alarm forces the heating phase skip.

This alarm cannot be reset by pressing Start/Pause button.

To clear the alarm is necessary to reset the current cycle by switching off the machine.

E40

E41 – Door Opened

The door locking timeout has been exceeded or the door is opened.

The behaviour of the machine is different depending on the door lock device type:

- In case of the instantaneous one the timeout is 6 second. The machine tries other 3 times and only after the last attempt the alarm is set
- In case of the traditional one the timeout is 20 second.
- In case of the instantaneous one with internal micro switch the alarm appear immediately thanks to the presence of the internal micro switch able to detect if the door is opened.

This alarm forces a cycle pause and can be reset by pressing start/pause button or resetting the current cycle switching off the machine.

E42 – Door Lock Device Failure

The door remains closed when the opening is requested (at the end of the cycle for example).

Even in this case, the behaviour of the machine is different depending on the door lock device type:

- In case of the instantaneous one, the machine tries for 5 times to unlock the door and only after the last attempt the alarm appears.
- In case of the traditional one the alarm appears after a 4 minutes and 15 seconds timeout.

The nominal time value necessary to open the traditional door lock device can be summarized in:

- ~45 sec. At a temperature of 20 C;
- ~70 sec. At a temperature of 65 C.

This alarm forces a cycle pause and can be reset by pressing Start/pause button or resetting the current cycle by switching off the machine

E43 – Door Lock Device Triac Failure

There is an incongruent situation between the sensing of the triac that drives the door lock device and the output given by the microprocessor.

The situation can happen in two ways:

- the triac is driven by the microprocessor while the sensing gives him a high value
- the triac is not driven by the microprocessor while the sensing gives him a low value. It can happen in one half wave of the power supply (diode mode) or in both half waves (short circuit).

The alarm appears if this situation persists for 3 seconds.

Before stopping the machine, if the door closed sensing is ON (DOOR_CLOSED_S = ON), a safety drain cycle is performed to empty the machine because the safety is compromised.

This alarm cannot be reset by pressing Start/Pause button.

To clear the alarm is necessary reset the current cycle by switching off the machine.

E44 – Door closed sensing failure

The door closed sensing is not working properly.

It has to give a sinusoidal wave to the microprocessor if the door is closed and a fixed value (2.5 Volts) if the door is open. If the microprocessor reads a value different from these for a time longer 1 second (EWX14), the machine is in alarm situation.

Before stopping the machine and opening the door, a safety drain cycle is performed to empty the machine because the safety is compromised.

When the machine is in alarm, a power fail force the repetition of the safety drain cycle from the beginning. To clear the alarm it is necessary to reset the current cycle by switching off the machine at the end of safety drain.

E45 – Door lock triac sensing failure

The sensing of the door lock triac gives to the microprocessor a signal out of the limits.

The limits are different depending on the half wave of the power supply and the value refers to the conversion steps of the A/D converter.

In the positive half wave the limit value is 250, while in the negative half wave the limit is 5.

The alarm appears if the read value exceeds these intervals for a time longer than 1 second.

The alarm appears if the read value exceeds these intervals for a time longer than 1 second.

Before stopping the machine and opening the door, a safety drain cycle is performed to empty the machine because the safety is compromised.

When the machine is in alarm, a power fail force the repetition of the safety drain cycle from the beginning. To clear the alarm it is necessary to reset the current cycle by switching off the machine at the end of safety drain.

E50

E51 – Motor Triac Short Circuit

There is an incongruent situation between the sensing of the triac that drives the motor and the output given by the microprocessor.

This alarm respect of previous platforms can be detected only with door closed.

The motor triac sensing gives to the microprocessor a low value but the angle of the motor triac driving is less than 4000.

The value of the sensing refers to the conversion steps of the A/D converter. In both half waves the high value is 153 and the low value is 103 (values referring at 230 Volt).

The angle of the motor driving is a value that indicates how long the triac is kept on for each half wave, the value goes from 0 to 10000 and so the peak of the half wave is reached at 5000.

The machine is in alarm if this situation persists for 0.5 sec. The alarm appears immediately in set-up with door closed and in diagnostic phase, but only after 5 trials during a normal cycle. This procedure is done in order to cool the system (motor and triac) and is composed by 5 trials separated by 5 minutes of pause except the last one that is separated by 20 minutes of pause.

If the machine is still in the alarm situation the alarm code is memorized and the machine is stopped in safety condition.

To clear this alarm is necessary switch off the machine.

E52 – No Tachometer Signal

While motor is running, this alarm is set because of bad tachometer signal for example due to a no perfect connection of tachometer (unsettled contacts) or a high level of electromagnetic noise. When this condition is detected the Motor Control SW power off the motor and goes into a safety state waiting for an alarm reset command from MB.

The alarm in both conditions appears only after 5 trials during a normal cycle. The first 4 trials separated by 5 minutes (time necessary to cool the thermal protection) and the last one after 20 minutes. If the machine is still in the alarm situation the alarm code is memorized and the machine is stopped in safety condition.

After the second trial, if the problem is still present, we try to change the motor movement. The motor will run with delicate movement to try to finish the cycle. This feature is configurable (enable or not) and is active only during prewash, washes and rinse phases on cotton and synthetics cycles.

To clear this alarm is necessary switch off the machine.

E53 – Motor Triac Sensing Failure

The sensing of the motor triac gives to the microprocessor a signal out of the limits.

The limits are different depending on the half wave of the power supply and the value refers to the conversion steps of the A/D converter.

In the positive half wave the high value is 250 and the low value is 103, while in the negative half wave the high value is 153 and the low value is 5 (values referring at 230 Volt).

The alarm appears if the read value exceeds these intervals for a time longer than 1 second.

This alarm cannot be reset switching off the machine.

To clear the alarm it is necessary to reset the current cycle by switching off the machine.

E54 – Motor Direction Relay Failure

The voltage value read on the motor triac sensing is too high.

When the door is closed, the triac is not driven and all the relays are opened the board has to read a low voltage value, given by the internal pull-up.

The machine is in alarm if this situation persists for a time longer than 3 seconds.

The alarm appears only after 5 trials during a normal cycle. The first 4 trials separated by 5 minutes (time necessary to cool the thermal protection) and the last one after 20 minutes. If the machine is still in the alarm situation the alarm code is memorized and the machine is stopped in safety condition.

This alarm cannot be reset pressing Start/Pause button.

To clear the alarm it is necessary to reset the current cycle by switch off the machine.

This alarm is disabled in Electric test mode.

E57 – FCV Current Trip Failure

A sudden inverter current rising is occurred. It could be due to either a short circuit between motor phases or an electronic damage. The level of this threshold (15A) is set by the hardware. This is a hardware protection. The Motor Control Board power off the motor via hardware, than the DSP SW goes into a safety state.

The alarm appears only after 5 trials during a normal cycle. Every trial is separated by 2 minutes of pause where the FCV board is switched off. At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, the machine is stopped and the door will be opened.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E58 – FCV Over Current Failure

A sudden abnormal motor phase currents is occurred. It could be due to an abnormal or an over load of the motor. Furthermore, the wiring and an electronic damage can cause this alarm too. The level of this software threshold

(6A) is configurable via MB. The Motor Control Board power off the motor via software, than the DSP SW goes into a safety state waiting for an alarm reset command from MB.

The alarm appears only after 5 trials during a normal cycle. Every trial is separated by 10 seconds of pause where the FCV board is switched off. At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, the machine is stopped and the door will be opened.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E59 – FCV Not Following Failure

No tacho signal for 3 seconds after new speed target different from zero. It occurs at the motor start up. It could be due to either motor wiring (motor phases and/or tachometer) or electronic damage. If the problem is on tachometer circuitry (wiring or electronic) the Motor Control board supplies the motor with a current limited to about 4 Arms. Under this condition, it runs at very low speed (~200rpm of motor) until the software protection power off the motor. Therefore, DSP SW goes into a safety state waiting for an alarm reset command from MB.

The alarm appears only after 5 trials during a normal cycle. Every trial is separated by 10 seconds of pause where the FCV board is switched off. At the end of last trial if the machine is still in the alarm situation the alarm code is memorised, the machine is stopped with the door locked.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E5A – FCV Heating Failure

It occurs when the Heat Sink temperature goes above a configurable threshold (88°C) for a configurable time (1s). In this case, it is due to either an over load conditions or electronic damage. Otherwise, it could be causes by the opening of the NTC. This condition is detected after the measured temperature stays at very low value (-11°C) for more than 20 seconds.

Under these conditions, the Motor Control Board power off the motor via software, than the DSP SW goes into a safety state waiting for an alarm reset command from MB. The reset of alarm is enabled only if the heat sink temperature goes within allowed temperature range.

The alarm appears only after 5 trials during a normal cycle. Every trial is separated by 2 minutes of pause. At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, the machine is stopped in safety conditions.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E5B/E5H – FCV Under Voltage Failure

It occurs when the dc bus voltage goes below a configurable threshold (175V) for a configurable time (5ms). This alarm can happen if the Motor Control board is not properly supplied due to either bad wiring or mains out of range. Furthermore, electronic could be damaged.

Under these conditions, the Motor Control Board power off the motor via software, than the DSP SW goes into a safety state waiting for an alarm reset command from MB. The reset of alarm is enabled only if the dc bus voltage goes above a second voltage threshold (225V).

The alarm appears only after 5 trials during a normal cycle. Every trial is separated by 10 seconds of pause where the FCV board is switched off. At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, the machine is stopped in safety conditions.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E5C – FCV Over Voltage Failure

It occurs when the dc bus voltage goes above a configurable threshold (430V) for a configurable time (5ms). It could be due to an electronic damaged.

Under these conditions, the Motor Control Board power off the motor via software, than the DSP SW goes into a safety state waiting for an alarm reset command from MB. The reset of alarm is enabled only if the dc bus voltage goes below a second voltage threshold (420V).

The alarm appears only after 5 trials during a normal cycle. Every trial is separated by 10 seconds of pause where the FCV board is switched off. At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, the machine is stopped in safety conditions.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E5D – FCV Unknown Message Failure

It is set when FCV cannot receive and/or transmit a message for more than 2 seconds. It is due to the communication wiring or an electronic damage.

The alarm appears only after 5 trials during a normal cycle. Every trial is separated by 10 seconds of pause where the FCV board is switched off. At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, the machine is stopped in safety conditions.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E5E – FCV- Main Board Communication Failure

There are communication problems in between FCV control board and Main board.

Problems could be due to Hardware (problems on connectors for example disconnection, on FCV or mother board) or due to disturb (burst on wiring).

The alarm appears after 25 seconds of missing communication.

When the alarm is set the machine is stopped in safety conditions.

This alarm cannot be reset by pressing Start/Pause button.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E5F – FCV Fault Alarm

FCV control board is continuously asking for configuration parameters due to a repetitive hardware reset.

The alarm appears only after 5 trials during a normal cycle. Every trial is separated by 10 seconds of pause where the FCV board is switched off. At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, the machine is stopped in safety conditions and the door opening is forced.

This alarm cannot be reset pressing Start/Pause button.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E60

E61 – Water Heating Timeout

The water heating timeout has been exceeded.

The timeout is a configurable parameter of the cycle description. It is set at the beginning of each heating phase and decreased until the target temperature is reached.

This alarm forces the heating phase skip.

E62 – Water Overheating

The temperature read by the washing NTC is over then 88°C for a time longer than 5 minutes.

In order to maintain the machine in safety condition, a safety drain cycle is performed (of course with a cool-down phase before and the door opening is forced.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E66 – Heating Element Relay Failure.

There is an incongruent situation between the heater relay sensing and the status of the heater relay that connects the washing or the drying heating element.

This allows the detection of all possible faults conditions (relay not driven, relay contact glue closed or opened, sensing damaged)

If the heaters relay sensing remains in the faulty conditions for a time longer than 3 seconds, some components might be damaged and the safety of the machine is compromised.

When the fault condition is recognized the following actions will be done:

- a safety load procedure in order to cover the heating element comprehensive of a cool-down water load (if the temperature if greater than 65°C);
- and the door opening to leave the machine in a safety condition;

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E68 – Ground Current Leakage

The voltage value read by Heater Relay sensing is out of limits.

This can happen if we have a ground current leakage through the heating element (washing or drying heater), or other components.

According to the hardware configuration of the board a current leakage can be detected only with door unlocked.

The alarm appears if the read value exceeds some thresholds for a time longer than 12 seconds.

In detail the conditions to set the alarm are:

- if the heater sensing circuit reads a signal greater than
  Main voltage/2 - Main voltage/16 + 75;
- or if the heater sensing circuit reads a signal less than
  Main voltage/2 – Main voltage/16 – 45;

With these thresholds we are able to detect a leakage less than:

- ~ 80 KΩ (EWX13) / 90 KΩ (EWX14) versus Line;
- ~ 50 KΩ (EWX13) / 60 KΩ (EWX14) versus Neutral;

This alarm stops the machine with door unlocked.
To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E69 – Heating Element Opened

As on the previous alarm the voltage value read by Heater Relay sensing is out of limits when the cycle is in execution and the heating element is not powered.

This can happen due to a faulty component (some heating elements can open at the end of heating phase) or really due to the thermo-fuses protection.

The alarm appears if the read value exceeds a specific range for a time longer than “E69 timeout”.

In detail the condition to set the alarm is:

- door closed, both relays switched off and sensing signal greater than

  Main voltage/2 - Main voltage/16 + 55

  or less than

  Main voltage/2 - Main voltage/16 + 75

“E69 timeout” is fixed in 10 seconds, but we can have 2 different behaviours according to machine status. In particular:

- during diagnostic cycles after that timeout the alarm is set immediately,

- Whereas in normal cycle mode the alarm will be set after a retrial when the heating element is activated for 10 seconds and after that was switched off and re-tested. If the faulty condition still persist the alarm will be set.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E6A – Heater Relay Sensing Failure

The sensing of the heater relay gives to the microprocessor a signal out of the limits:

- greater than 250 A/D steps (fixed to 5 Volts) (EWX11);
- or greater than 10 A/D steps on the negative half wave (sensing floating) (EWX11, EWX13, EWX14).

Appliances equipped with ultra Aqua Stop device can set this alarm if the valve is broken or the wiring is damaged (EWX14).

The alarm appears if the read value exceeds these intervals for a time longer than 2.5 seconds.

This alarm block the cycle keeping the door locked.

This alarm is enabled also with the machine in stand by state as the other relay alarms

This alarm cannot be reset pressing the Start/Pause button.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E6B – Heating WD Relay Failure

There is an incongruent situation between the heater relay sensing and the status of the heater WD relay.

This fault, according to the hardware configuration of the board can be detected in several different ways:

- For WM machines:
  - if the WD Relay is opened and the heater relay sensing circuit reads a signal less 10 steps;
  - or if the WD Relay is closed and the heater relay sensing circuit reads a signal greater than 10 steps.
- For WD machines:
  - if the WD Relay is opened and the heater relay sensing circuit reads a signal less 10 steps or the Line WD relay sensing reads a signal less than 10 steps;
  - if the WD Relay is closed and both the heater relay sensing and the heater wd relay sensing circuit reads a signal greater than 10 steps.

If the heater WD relay sensing remains in these conditions for a time longer than 4 seconds, (2 seconds in diagnostic mode) some component might be in a faulty condition and the safety of the machine is compromised.

When the fault condition is recognized the machine was stopped and the door was opened.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E70

E71 – Water NTC Failure

The voltage value read on the NTC sensing is out of limits and it means that the NTC sensor is in open circuit or in short circuit.

The limits are referred to the conversion steps of the A/D converter, the high value is 250 and the low value is 5.

The alarm appears if the read value exceeds this interval for a time longer than 5 seconds.

This alarm forces the washing heating phases skip and the door will stay locked.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

This alarm is not active in set–up phase.

E72 – Output Drying NTC Failure

The voltage value read on the NTC sensing is out of limits and it means that the NTC sensor is in open circuit or in short circuit. The limits are referred to the conversion steps of the A/D converter, the high value is 250 and the low value is 5.

The alarm can be set also if the temperature does not change of a configured number of degrees in a configured time during a drying step.

This alarm forces the drying heating phases skip.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

This alarm is not active in set–up phase.

E73 – Input Drying NTC Failure

The voltage value read on the NTC sensing is out of limits and it means that the NTC sensor is in open circuit or in short circuit. The limits are referred to the conversion steps of the A/D converter, the high value is 250 and the low value is 5.

The alarm can be set also if the temperature does not change of a configured number of degrees in a configured time during a drying step.

This alarm forces the drying heating phases skip.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

This alarm is not active in set–up phase.

E74 – Water NTC in Wrong Position

If the wash NTC is not in its correct position on the tub and so during a heating phase the wash temperature does not increase.

The alarm is set if the wash temperature does not increase of a configured number of degrees in a configured time during a heating step.

This alarm forces the heating phases skip.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E75 – Drying Capillary NTC Failure

The voltage value read on the NTC sensing is out of limits and it means that the NTC sensor is in open circuit or in short circuit. The limits are referred to the conversion steps of the A/D converter, the high value is 250 and the low value is 5.

This alarm forces the drying heating phases skip.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

This alarm is not active in set–up phase.

E80

E83 – Wrong Selector Position Reading

The code read on the selector is not supported by the configuration data.

E84 – Recirculation Pump Triac Sensing Failure

The sensing of the recirculation pump triac gives to the microprocessor a signal out of the limits.

With the new sensing circuit is not possible read continuously a signal fixed at 5 Volt (EWX13) / a signal less 3.5 Volt.

In fact when the pump is switched off on the negative half wave we have to read a signal closed to 5 Volts.

This alarm performs the safety drain cycle and forces the door opening.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E85 – Recirculation Pump Triac Failure

There is an incongruent situation between the sensing of the triac that drives the drain pump and the output given by the microprocessor.

It can happen in several ways:

- the pump is disconnected (or the thermal protection is opened);
- or the triac is not connected to the load (hardware fault on the board);
- the triac is not driven by the microprocessor while the sensing reads a lower value (< 4,40 Volt) on the negative half wave of the signal;

It can happen when the triac is short circuited.

The alarm appears if these situations persist for 3 seconds during 2 consecutive trials performed after a pause of 10 seconds.

If the machine is in set-up the alarm is set immediately after the first trial.

This alarm management performs the safety drain cycle and forces the door opening.

This alarm can be reset pressing Start/pause button or resetting the current cycle by switching off the machine.

E86 – Selector Configuration Table Error

This alarm will be set by UI if the area containing the configuration thresholds for the selector is missing or corrupted.

This alarm doesn't allow cycle start.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E87 – USER Interface Microcontroller Fault

This warning is set when the user interface fails a certification protection check.

On UI with a faulty microcontroller memory will be set.

The alarm is not displayed.

To clear this alarm it is necessary to reset the current cycle by switching off the machine or press start/pause button at the end of cycle.

E90

E91 – Communication Error between UI and Main Board

There are communication problems in between User Interface and Main board.

Problems could be due to Hardware (problems on connectors for example disconnection of user interface or of the Main board) or due to noise (burst on wiring).

In this case the cycle doesn't start if the problem is detected at the power-ON.

The alarm is displayed on the display.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E92 – User Interface Mother Board Protocol Incongruence

The communication protocol in between user interface and Main board is not aligned. This could be due to incompatible configuration between user interface and Main board. This alarm is checked at the power-ON and the machine is stopped.

The alarm is displayed on the display.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E93 – Machine Configuration Error

There is an incongruent situation between the stored checksum and the calculated one at the power-on of the machine.

The configuration saved on the FLASH is divided into 3 parts, each one with a separated checksum. One of them is the machine configuration; the others are related to the cycle.

At the power-on, during the reading of the configuration, the machine calculates the checksum and compares it with the written one.

When an error condition is detected the machine is blocked.

The alarm is displayed on the display.

E94 – Cycle Configuration Error

There is an incongruent situation between the stored checksum and the calculated one at the power-on of the machine.

Differently from the E93 the checksum of the cycle configuration is divided into two parts and so the machine has to check both.

When an error condition is detected the machine is blocked.

The alarm is displayed by led and LCD display. To clear the alarm it is necessary reset the current cycle by selector or pressing start/pause button at the end of cycle or simply switching off the machine.

E97 – Incongruence between Selector and Cycle Tables Configuration

The program ID value read from the selector table, contained in the machine configuration data area, is not available in the cycle table contained in the cycle configuration data area.

This situation can be caused by a read error from FLASH or by a wrong configuration file selected for the appliance configuration.

When an error condition is detected the machine is blocked.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E98 – FCV and MB PROTOCOL Incongruence

The communication protocol between FCV and Main board is not aligned.

This could be due to incompatible configuration between FCV and Main board.

This alarm is checked at the power-ON of FCV and the machine is stopped.

This alarm cannot be reset by pressing the start/pause button.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

E9C – User Interface Wrong Configuration

Configuration wrongly or not received correctly by UI

To clear the alarm is necessary reset the current cycle or pressing start/pause button at the end of cycle or simply switching off the machine.

E9E – User Interface Touch Failure

User Interface touch sensor not working.

To clear the alarm is necessary reset the current cycle by selector or pressing start/pause button at the end of cycle or simply switching off the machine.

EA

EA1 – DSP System Failure

The electronic positioning system is not giving any signal to the microprocessor during the positioning phase for a time longer than 10 seconds, or is giving continuously the signal for a time longer than 10 seconds during a drum movement.

The DPS gives to the microprocessor a signal once at drum turn. The timeout is set at the beginning of each positioning phase and after each signal, and decreased until another signal is sensed.

The positioning phase is skipped when alarm condition is detected.

EA6 – DSP Door Open Alarm

Each time the door was closed, at the cycle start, the PB performs a particular movement in order to check if the door is properly closed.

If at the end of the movement at 100 rpm the number of tachometer impulses measured is less a configurable threshold the alarm is set.

The fault condition usually can happen at the beginning of cycle when user has forgotten to close the door. In this condition when motor starts to run causes the belt exit.

This alarm forces a cycle pause and can be reset by pressing Start/pause button or resetting the current cycle by switching off the machine.

EB

EB1/EH1 – Power Supply Frequency Out of Limits

Power supply period lower or higher than configured values (45 and 55 Hz).

The machine measures continuously the power supply period and if its value exceeds a configurable interval the machine starts the power failure management.

At the restart the machine waits a stable frequency value and measures the reaching time needed, if it exceeds a prefixed timeout (5 sec.) the machine is blocked in alarm condition.

This alarm will auto reset if the power supply voltage returns to normal values.

EB2/EH2 – Power Supply Voltage Too High

The power supply voltage value is higher than the maximum accepted value (~270 Volt).

The machine measures continuously the power supply voltage and if its value exceeds the limit for a time longer than 5 seconds, the machine is blocked in alarm situation.

The limit is referred to the conversion steps of the A/D converter and the value is calculated in order to recognize the wrong reading of the voltage sensing.

This alarm will auto reset if the power supply voltage returns to normal values.

EB3/EH3 – Power Supply Voltage Too Low

The power supply voltage value is lower than the configured value (~175 Volt).

The machine measures continuously the power supply voltage and if its value exceeds the configurable limit the machine starts the power failure management.

At the restart the machine waits a stable voltage value and measures the reaching time needed, if it exceeds the 5 seconds timeout, the machine is blocked in alarm situation.

The limit is referred to the conversion steps of the A/D converter and the value is calculated in order to recognize the wrong reading of the voltage sensing or a voltage value lower than the configured one.

To avoid intermittence problem (due to a voltage level very close to the threshold) a hysteresis of $5V_{RMS}$ is managed. It means that to restart, the supply voltage must go over the voltage threshold level by $5V_{RMS}$.

This alarm will auto reset if the power supplies voltage returns to normal values.

EBC/EHC – Line WD Relay Failure

There is an incongruent situation between the Line WD relay sensing and the corresponding relay.

This fault can be detected only with door closed and due to the hardware configuration of the board we can have 2 different fault conditions specified within software parameters:

The alarm is set if the line WD relay sensing remains in these conditions for a time longer than 3 seconds.

When the fault condition is recognized machine performs a drain action to empty the machine and allow the door opening.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

EBD/EHD – Heater WD Relay Sensing Failure

The sensing of the heater WD relay gives to the microprocessor a signal out of the limits:

- Greater than 10 A/D steps on the negative half wave (sensing floating).

The alarm appears if the read value exceeds these intervals for a time longer than 2.5 seconds.

This alarm block the cycle keeping the door locked.

This alarm is enabled also with the machine in stand by state as the other relay alarms

This alarm cannot be reset by pressing the Start/Pause button.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

EBE/EHE – FCV Relay Failure

There is an incongruent situation between the sensing of the relay and the driving circuit state.

The situation can happen in several ways:

- the relay is driven by the microprocessor while the sensing returns a high value.
- the relay is not driven by the microprocessor while the sensing returns a low value.

Differently from the previous platform, the FCV relay sensing circuit is based on an enabling signal (used to reduce power consumptions in stand-by) that allow the reading of the sensing only when needed.

For this reason also if the enabling circuit is not properly working it was set an alarm because it was not possible read correctly the relay status.

The alarm appears if these situations persist for 1 seconds.

This alarm management performs the safety drain cycle and forces the door opening.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

EBF/EHF – FCV Relay Sensing Failure

The sensing of the FCV relay gives to the microprocessor a signal out of the limits.

The limits are different depending on the half wave of the power supply and the value refers to the conversion steps of the A/D converter.

The alarm appears if the read value exceeds these intervals for a time longer than 1 second.

This alarm management performs the safety drain cycle and forces the door opening.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

EC

EC1 – Electro Valves Blocked

This alarm can be set if the flow meter is running when no electro valves are driven.

To set the alarm, the fault condition must persist for at least 60 seconds during normal cycles or for 4 second during diagnostic cycles.

When the machine is in alarm situation, the door is locked, the drain pump is activated until all levels are empty (overload, 1st level and anti-boil switches open) or, in any case, for 5 minutes.

In case of abnormal behaviour (one of the levels contact switch always ON) the pump is turned off at least for 5 minutes. It's switched-on again when overload levels switches-on.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

EC2 – Weight Sensor Communication Error

There are communication problems in between Weight Sensor and Main board.

Problems could be due to Hardware (problems on connectors for example disconnection of Weight sensor or of the Main board) or due to noise (burst on wiring).

No action is executed when alarm is detected.

Only the weight information displayed into LCD module remains to 0.

Pressing Start/Pause or reset the current cycle by switching off the machine to clear this alarm.

EC3 – Weight Sensor Fault

The alarm can be set also if the weight sensor is disconnected, defective or the configuration parameters stored on the sensor are missing.
In diagnostic mode the alarm can be set if during the execution of "Wash heater test" step the amount of water loaded is less of 600gr. or greater than 2000gr.
No action is performed when alarm is detected.
Only the weight information displayed to LCD module remains to 0.
Pressing Start/Pause or reset the current cycle by switching off the machine to clear this alarm.

EC4 – Current Sensor Alarm

This alarm can be set it the "current sensor" circuit is not working properly.

The failure can happen in two different ways:

- if the microcontroller is not able to adjust dynamically the offset value related to the ZC current circuit;
- or is the sensor is not reading any ZC current signal during a distribution phase.

When the alarm was set every spinning is reduced at a safety speed value.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

EC8 – TY5_Triac_Al

Triac TY5 according to power board type can be used to drive motor fan, hot valve or the water softener board.

On the below alarm description, the expression “Load” will refer to one of the previous listed loads (drive motor fan, hot valve or the water softener board).

There is an incongruent situation between the sensing of the triac that drives the specific load and the output given by the microprocessor.

It can happen in several ways:

- the triac is driven while the sensing reads a higher value. It can happen if the circuit is open for example the load is unplugged.
- the triac is not driven by the microprocessor while the sensing reads a lower value. It can happen when the triac is short circuited.

The alarm appears if these situations persist for 3 seconds during 2 consecutive trials performed after a pause of 10 seconds.

If the machine is in set-up the alarm is set immediately after the first trial.

This alarm management performs the safety drain cycle and forces the door opening.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

EC9 - TY5_Triac_S_Al

The sensing of the triac gives to the microprocessor a signal out of the limits.

The limits are different depending on the half wave of the power supply and the value refers to the conversion steps of the A/D converter. In the positive half wave the limit value is 250, while in the negative half wave the limit is 5.

The alarm appears if the read value exceeds these intervals for a time longer than 1 second.

Before stopping the machine and opening the door, a safety drain cycle is performed to empty the machine because the safety is compromised.

When the machine is in alarm, a power fail force the repetition of the safety drain cycle from the beginning. To clear this alarm it is necessary to reset the current cycle by switching off the machine.

ECA – Detergent Dispenser Water Softener Board Communication_Alarm

There are communication problems in between DDWS satellite board and Main board.

Problems could be due to hardware (faulty components, wiring, etc.) or due to disturbances (burst on wiring) on the Main board.

The alarm appears after 25 seconds during which the board performs continuous retries to restore the communication.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

ECB/EBH – Detergent Dispenser Water Softener board fault

This alarm can happen if on the DDWS board there is at least one of the following faults:

- Diverter position fault
- Microcontroller Memory faulty
- Power supply out of limits

The alarm appears only after 5 trials during a normal cycle. Every trial is separated by 10 seconds of pause where the satellite board is switched off. At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, the machine is stopped.

This alarm cannot be reset by pressing Start/Pause button.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

ECC –Water Softener Assembly Failure

This alarm can happen if on the WS assembly there is at least one of the following faults:

- Level float
- or Density float damaged.

The alarm appears in the following situations:

- level or density float remains locked at the same state for the entire regeneration process (no float changes after the water loads or after the pump activation)

The alarm is set at the end of the regeneration process, the alarm code is memorized, and the machine is stopped.

This alarm cannot be reset by pressing Start/Pause button.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

ECD –Water Softener Pump Failure

This alarm can happen if on the WS assembly there is the brine pump faulty.

The alarm appears in the following situations:

- driving circuit switched on but the sensing reads no current flow;
- driving circuit switched off and pump active.

When the faulty condition has been detected, the alarm code is memorized, and the machine is stopped.

This alarm cannot be reset by pressing Start/Pause button.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

ED

ED1 – WDM Board Communication Alarm

There are communication problems in between WDM satellite board and Main board.

Problems could be due to hardware (faulty components, wiring, etc.) or due to disturbances (burst on wiring) on the Main board.

The alarm appears after 25 seconds during which the board performs continuous retries to restore the communication.

To clear this alarm it is necessary to reset the current cycle by switching off the machine.

ED2 – WDM Heating Element Relay Failure

There is an incongruent situation between the sensing of the relay that drives the drying heating1 relay and the output given by the microprocessor.

The alarm appears if these situations persist for 5 seconds.

This alarm skips the drying phase and tries to cool the machine.

To clear this alarm it is necessary to reset the current cycle by switching off the machine

or press the Start/Pause button.

ED3 – WDM Heating Element Relay Sensing Failure

The sensing of the heater relay gives to the microprocessor a signal out of the limits:

- greater than 980 A/D steps (fixed to 5 Volts);
- or greater than 40 A/D steps on the negative half wave (sensing floating).

The alarm appears if the read value exceeds these intervals for a time longer than 1 second.

This alarm can be set only when the correspondent relay is switched off.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

ED4 – WDM Heating Element2 Relay Failure

There is an incongruent situation between the sensing of the relay that drives the drying heating2 relay and the output given by the microprocessor.

The alarm appears if these situations persist for 5 seconds.

This alarm skips the drying phase and tries to cool the machine.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

ED5 – WDM Heating Element2 Relay Sensing Failure

The sensing of the heater relay gives to the microprocessor a signal out of the limits:

- greater than 980 A/D steps (fixed to 5 Volts);
- or greater than 40 A/D steps on the negative half wave (sensing floating).

The alarm appears if the read value exceeds these intervals for a time longer than 1 second.

This alarm can be set only when the correspondent relay is switched off.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

ED6 – WDM Thermostat Sensing Failure

The sensing connected to the thermostat gives to the microprocessor a signal out of the limits:

- greater than 980 A/D steps (fixed to 5 Volts);
- or greater than 40 A/D steps on the negative half wave (sensing floating).

The alarm appears if the read value exceeds these intervals for a time longer than 1 second.

This alarm doesn't stop the machine. The current cycle will be executed normally.

To clear this alarm is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

ED7 – WDM Thermostat Opened

This alarm can be detected in two different ways according to the HW configuration of the appliance.

In machines equipped with WD satellite module (EAX10500), the new hardware configuration of the PCB allows the microcontroller to detect the action of both thermostats (manual and automatic).

To detect this conditions we have defined 2 different thresholds as follow:

H_thrs= 3 * (VBULK_READ/4) – (VBULK_READ /16);

L_thrs = VBULK_READ /2;

According to these thresholds when the corresponding sensing reads a value greater than H_thrs we have the automatic thermostat opened.

While the manual thermostat action is recognized when both heater relays are off and the sensing signal is between H_thrs and L_thrs.

On the contrary in machines where drying loads are driven directly from PB, the HW configuration doesn't allow the detection during cycle execution but only with door unlocked.

So the alarm can be set only before cycle start, in pause or at the end of the cycle when an incongruent value is present on drying relay sensing respect of heater relay sensing.

In both situations when the alarm is set not action is executed. The cycle continues normally.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.'

ED8 – WDM Fan Motor Tachometer Absent

This alarm is set when the fan motor is running, and there is not tachometer signal feedback.

This condition must persist for at least 5 seconds to set the alarm.

The alarm will be set after 2 consecutive trials executed after a pause of 10 seconds.

When the alarm is set the machine is blocked with the door opened.

The alarm cannot be cleared by pressing the Start/Pause button.

To clear this alarm it is necessary switch off the machine to reset the current cycle.

ED9 – WDM Fan Motor Driving Circuit Failure

There is an incongruent situation between the "speed_set" signal and the output given by the microprocessor.

In particular we can have two possible scenarios:

- when the fan motor is running the "speed_set' signal cannot be less than 1 Volt;
- when the fan motor is stopped the "speed_set" signal cannot be greater than 1 volt or fixed at 5 Volts;

The alarm appears if these situations persist for 3 seconds.

The alarm will be set after 2 consecutive trials executed after a pause of 10 seconds.

When the alarm is set the machine is blocked with the door opened.

The alarm cannot be cleared by pressing the Start/Pause button.

To clear this alarm it is necessary switch off the machine to reset the current cycle.

EDA – WDM Power Supply Alarm

There is no ZC signal or lower power supply for at least 5 seconds.

Alarm will be cleared automatically when the ZC or the power supply signals return to nominal condition.

This board can be configured to work at:

- 50 or 60 Hz
- and at different power supply values (for example 120 Volts instead of 230 Volts)

changing properly some parameters on the Group Configuration File.

When the alarm is set the machine is stopped.

The alarm cannot be cleared by pressing the Start/Pause button.

To clear this alarm it is necessary switch off the machine to reset the current cycle.

EDB – WDM Microcontroller Fault

This warning is set when the WDM board fails a certification protection check.

Will be set in presence of a faulty microcontroller memory.

The alarm is not displayed.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

EDC – WDM Heater Opened Alarm

There is an incongruent situation between the sensing of heater_relay1 and heater_relay2.

In fact when both relay are switched off the related sensing must read values within H_trhs and L_thrs threshold (values defined on the “ED7 – WDM thermostat opened” alarm description.

If one of this information is outside these limits there is a possible heating element opened or unplugged.

The alarm is set if the condition persist for at least 3 seconds, but the cycle continues normally using at least only one heating element.

To clear the alarm is necessary reset the current cycle by selector or pressing start/pause button at the end of cycle or simply switching off the machine.

EDD – WDM Ground Current Leakage Alarm

The voltage value read by Line WD Relay sensing is out of limits.

This can happen if we have a ground current leakage through the drying heating element.

The alarm appears if the read value exceeds some thresholds for a time longer than 12 seconds.

The alarm is active only when the door is closed and the conditions to set the alarm are the following:

- if the line WD sensing circuit reads a signal:

  greater than

  Neutral leakage = 255 – (Main voltage/8 + Main voltage/16)

  Or less than

  Line Leakage = 255- (Main voltage/2 – Main voltage/8)

With these thresholds we are able to detect a leakage less than:

- ~ 50 KΩ versus Neutral
- From ~ 50 KΩ to ~ 20 KΩ versus Line

A very low current leakage versus Line (< 20Kohm) can be exchanged as a Line WD relay fault.

This alarm doesn't allow the satellite board switching on. For this reason all phases that foreseen a satellite board action will be skipped.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

EE

EE1 – Fan Current Trip Failure

This alarm is set if there is a hardware problem on the power module (for example an IGBT shorted) and the current immediately increases above 2.5 A.

The alarm will be set after 5 consecutive trials executed after a pause of 1 minute.

At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, and the machine is stopped.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

EE2 – Fan Over Current Failure

This alarm is set if the current of one fan phase increases above 0.8 A for a time of 0.6 ms .

This alarm can be caused by a problem control or by an hardware problem on the power module or on the current acquisition chain.

The alarm will be set after 5 consecutive trials executed after a pause of 1 minute.

At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, and the machine is stopped.

This alarm cannot be reset.

EE4 – Fan Not Following Alarm

This alarm is set if the fan isn't rotating at the speed imposed. This alarm can be caused by ramps that are too high for the fan or if the rotor is locked.

The alarm will be set after 15 consecutive trials executed after a pause of 10 seconds.

At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, and the machine is stopped.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

EE5 – Fan Under Voltage Alarm

This alarm is set if the voltage input on the board is below 160 Vrms for a time of 20 ms.. This alarm is managed with an hysteresis and so to go out from this condition the input voltage must exceed the value of 176 Vrms.

The alarm will be set after 5 consecutive trials executed after a pause of 1 minute.

At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, and the machine is stopped.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

EE6 – Fan Over Voltage Alarm

This alarm is set if the voltage input on the board is above282 Vrms for a time of 20 ms. This alarm is managed with an hysteresis and so to go out from this condition the input voltage goes below the value of 275 Vrms.

The alarm will be set after 5 consecutive trials executed after a pause of 1 minute.

At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, and the machine is stopped.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

EE7 – Fan Plug Non Connected Alarm

This alarm is set if one or more phase current are around zero for a certain time. A current phase must be under 20 mA for a time of 5 seconds. This problem can be caused by a phase detachment.

The alarm will be set after 5 consecutive trials executed after a pause of 10 seconds.

At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, and the machine is stopped.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

EE8 – Fan NTC Wrong Temperature Failure

This alarm is set if the temperature near the power module of the fan board is above 109 C° for a time of 5 seconds or if the temperature is below -5C° for a time of 5 seconds. This alarm is managed with a hysteresis and the values to go out from this condition are: 0C° and 99C°. This alarm can be caused by a high or low temperature or if the NTC is broken (shorted or opened).

The alarm will be set after 5 consecutive trials executed after a pause of 10 seconds.

At the end of last trial if the machine is still in the alarm situation the alarm code is memorized, and the machine is stopped.

This alarm cannot be reset.

EEB/EEH – Cooler Fan Failure

This alarm is set when the cooler sensing does not match the expected relay state or if the power line signal sensing is not valid (must toggle at line frequency).

This alarm doesn't stop the cycle execution and will be set after 5 consecutive trials executed after a pause of 1 minute.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

EEC – Compressor Failure

This alarm is set when the Compressor sensing does not match the expected relay state or if the power line signal sensing is not valid (must toggle at line frequency).

The alarm will be set after 20 minutes. This time is necessary to understand if the fault condition is caused by the compressor or the internal thermo protector.

The drying cycle process will not be stopped.

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

EF

EF1 – Filter Clogged Warning

The problem is put in evidence during a drain phase. If the virtual AB level doesn't go to empty state after a configurable time during a drain phase.

The filter-clogged warning is displayed (on a dedicated led or on the display) only at cycle end.

This warning happens before the Wash Drain Alarm.

EF2 – Foam Warning

When at the end of the washing phase foam is detected during the spin (virtual AB level remains closed) the drain pump is activated. If after 5 attempts the foam is still detected the warning is set but displayed only if the relative LED phase is configured. A rinse is added and the cycle continues regularly.

EF3 – Aqua Control Warning

This warning is managed only for appliances equipped with Aqua Control system.

This warning is displayed when the aqua control switch is continuously closed for at least 3 seconds.

This alarm management performs the safety drain cycle and forces the door opening.

The alarm cannot be cleared pressing the Start/Pause button.

To clear this alarm is necessary reset the current cycle or switch off the machine.

EF4 – Load Low Pressure

This warning is set when electro valves are switched on and flow meter is not running.

The condition must persist for 3 seconds and is symptom of tap closed, flow meter blocked or electro valve not working properly.

Warning comes out during water load steps and is only displayed. No actions are performed.

Alarm will be cleared automatically when the water flow return to nominal condition.

EF5 – Load Unbalanced

This warning is set when the last spinning is skipped due to an unbalance to high.

This means that the unbalance algorithm has tried to balance the load without success and so the spinning phase is skipped.

This warning is not displayed and is only stored for the service force.

EF6 – Safety Reset

This warning is set when the machine fails a certification protection check.

When it recognizes a possible safety risk the machine “reset” itself and restarts again.

Can be set also if the machine is driven externally by a PC and the “Remote control mode” isn’t activated. In this case reset itself to avoid wrong load activations.

EF7 - Dry Filter Alarm

This warning is set when the air drying filter is not closed or missing.

The warning is set after 1 minute of drying filter absence and the machine goes in pause state.

The filter presence is detected by a micro switch positioned closed to the drying filter. For this reason a not appropriate warning can be set in case of micro switch not working properly.

This warning is displayed on the user interface

The alarm can be cleared by pressing the Start/Pause button.

EF8 – Salt Missing

This warning is set when the machine fails to complete a regeneration process due to an insufficient salt quantity presence on the salt box.

It's a reminder for the customer to refill the salt box.

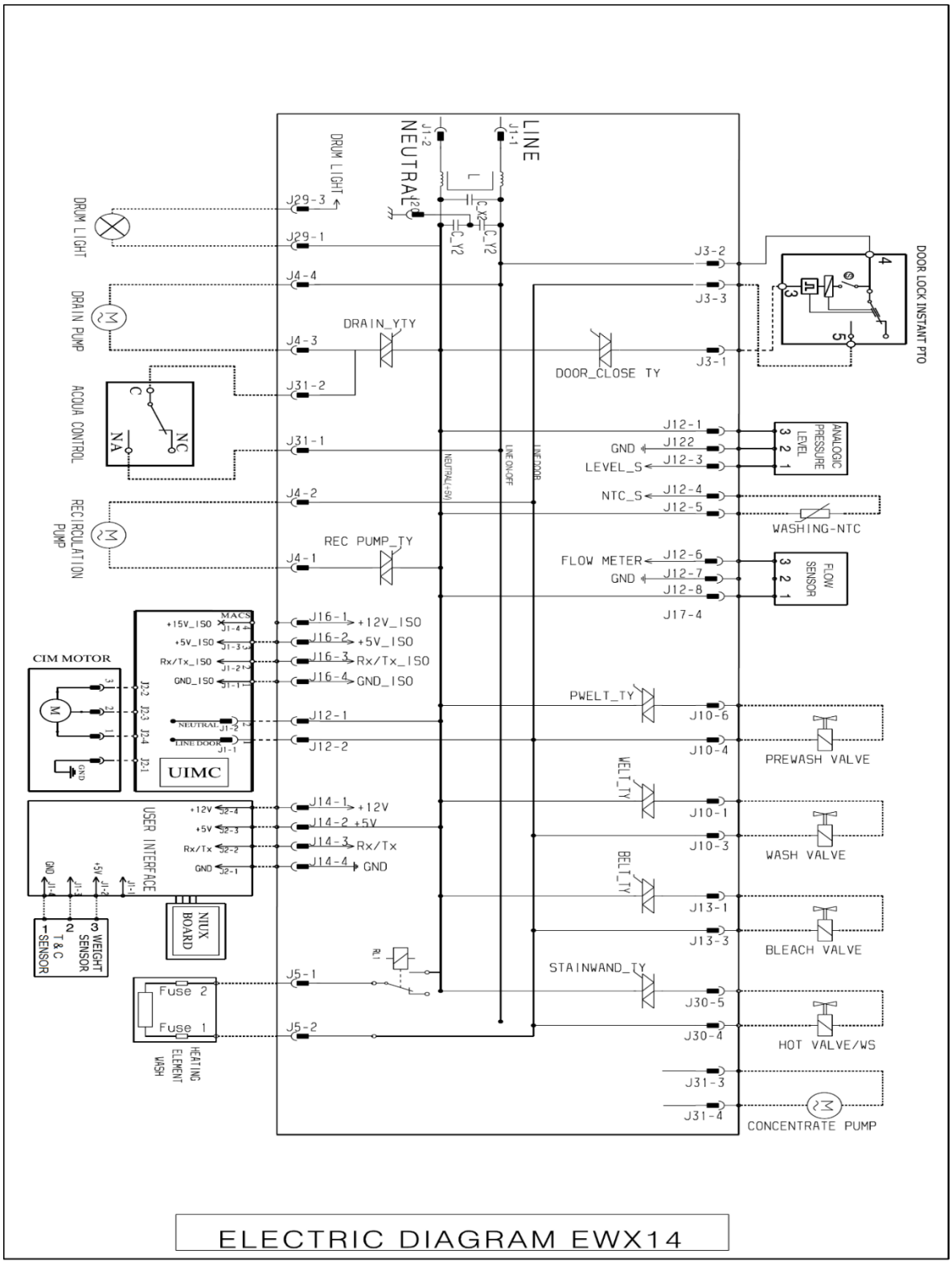
Can be set also if the water softener device or water softener sensors were defective.

In particular the density float can be trapped, or the sensor board was defective

To clear this alarm it is necessary switch off the machine to reset the current cycle or press the Start/Pause button.

DIAGRAMS

BLOCK DIAGRAM – WASHING MACHINE



ELECTRIC DIAGRAM EWX14

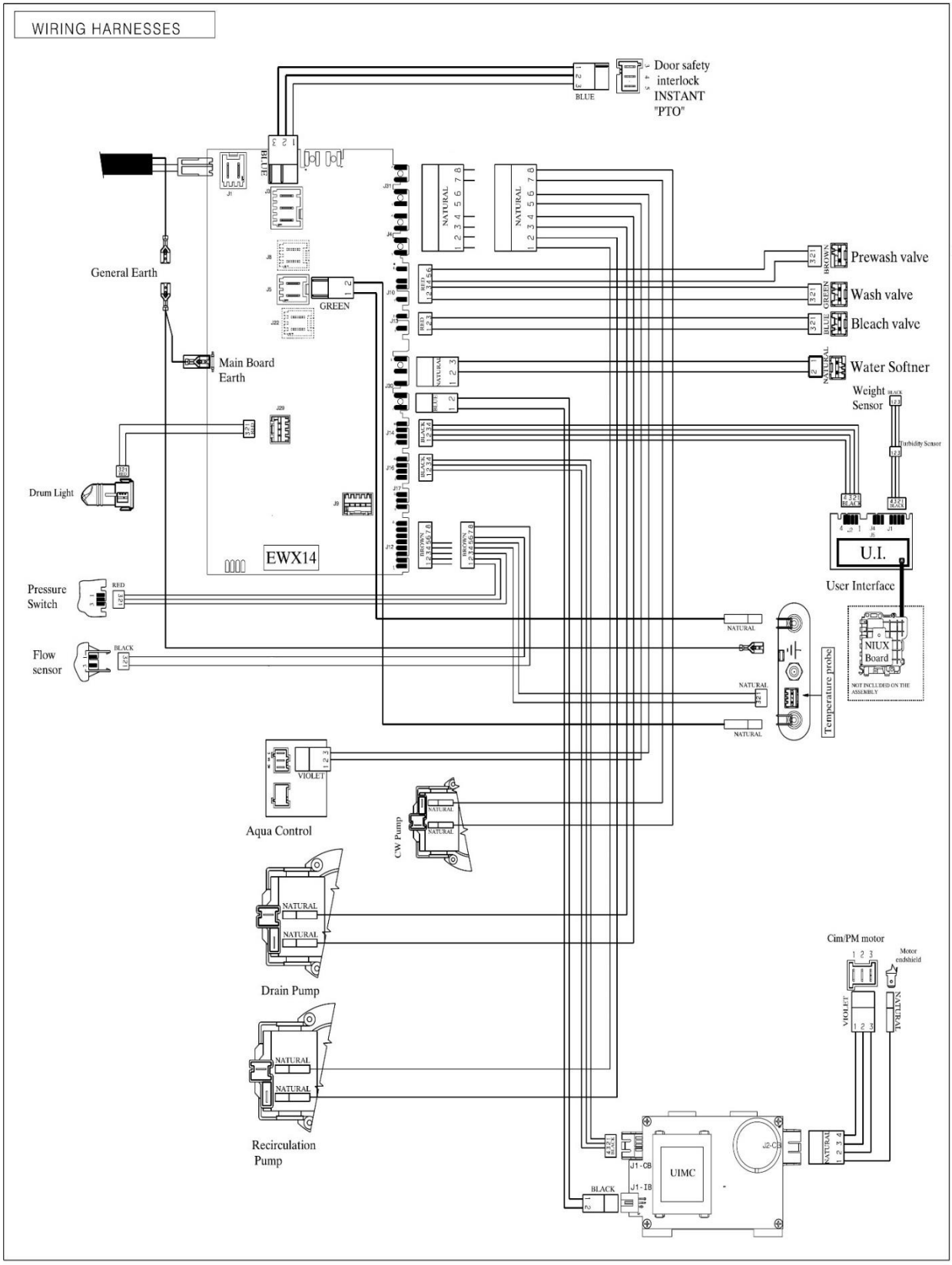
WARNING

IT IS ILLEGAL FOR PERSONS OTHER THAN LICENSED ELECTRICAL MECHANICS OR PERSONS AUTHORISED BY LEGISLATION TO WORK ON THE FIXED WIRING OF ANY ELECTRICAL INSTALLATION. PENALTIES FOR CONVICTION ARE SEVERE.

IMPORTANT SAFETY NOTICE

This diagram has been prepared for use by electrically qualified service technicians. Electrolux cannot be held responsible for the interpretation of its service publications nor for any injury or damage that may occur in connection with their use.

WIRING DIAGRAM – WASHING MACHINE



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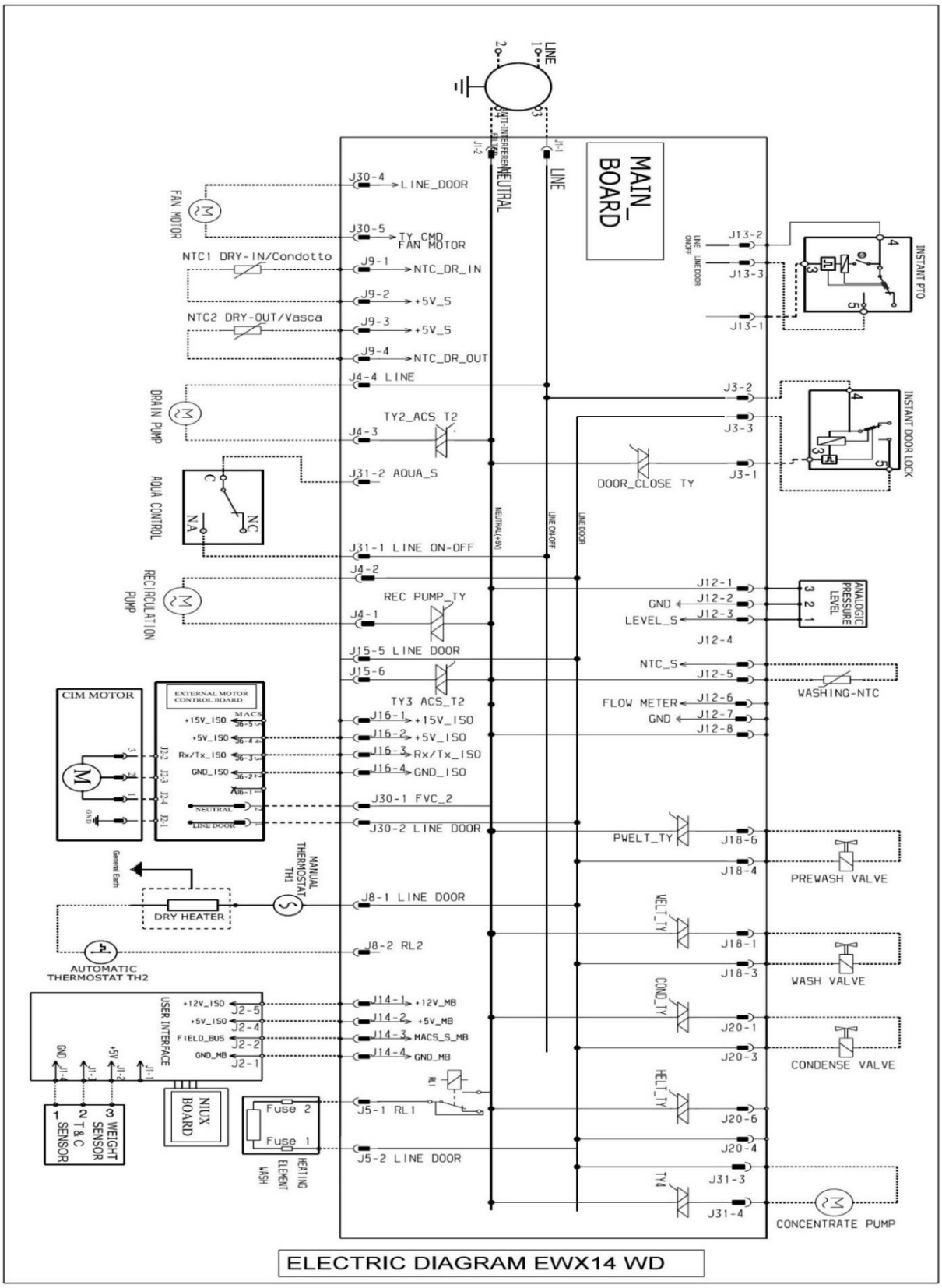
BLOCK DIAGRAM – WASHER/DRYER



ELECTRIC DIAGRAM EWX14 WD

WARNING

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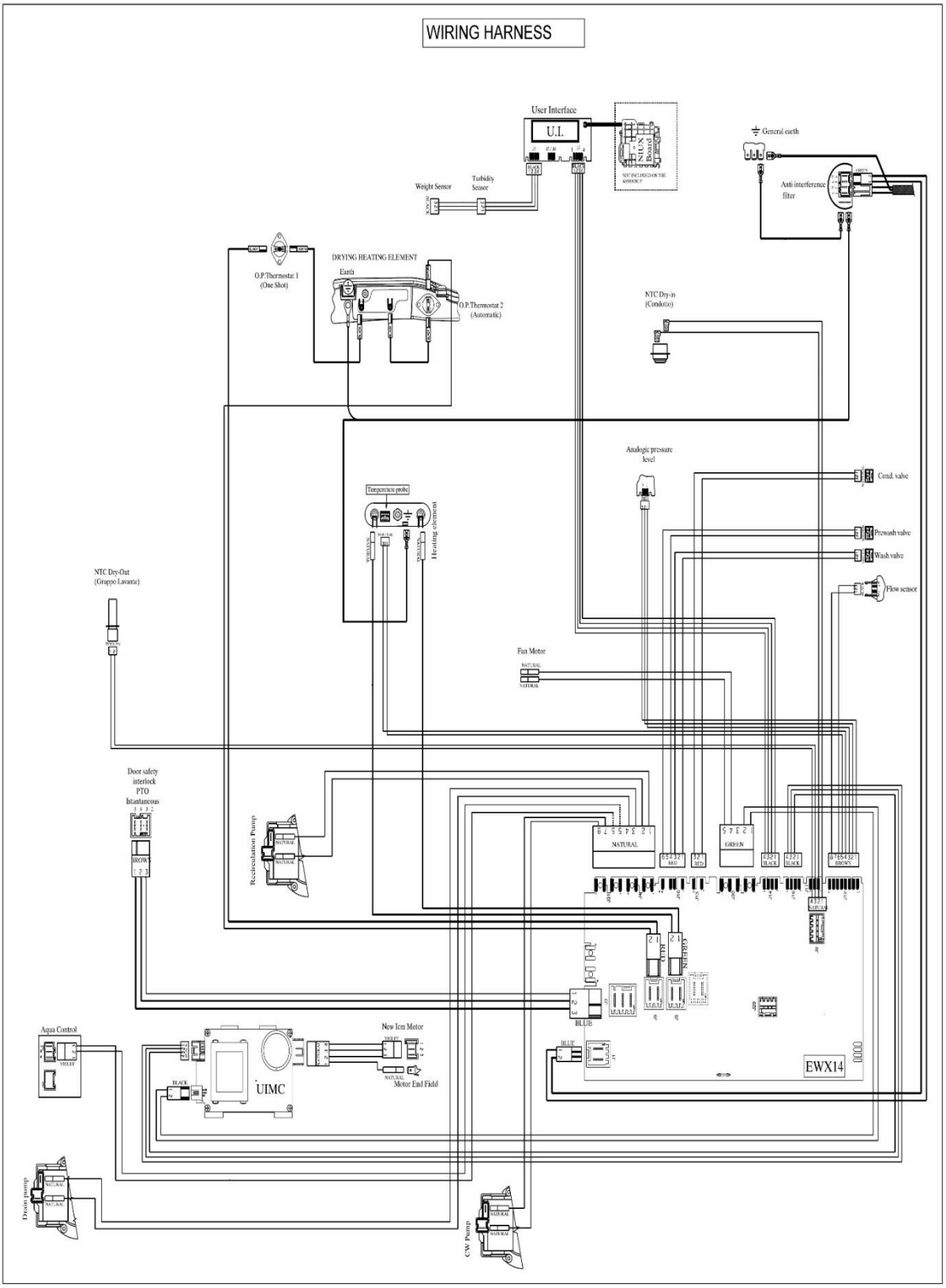
WIRING DIAGRAM – WASHER/DRYER



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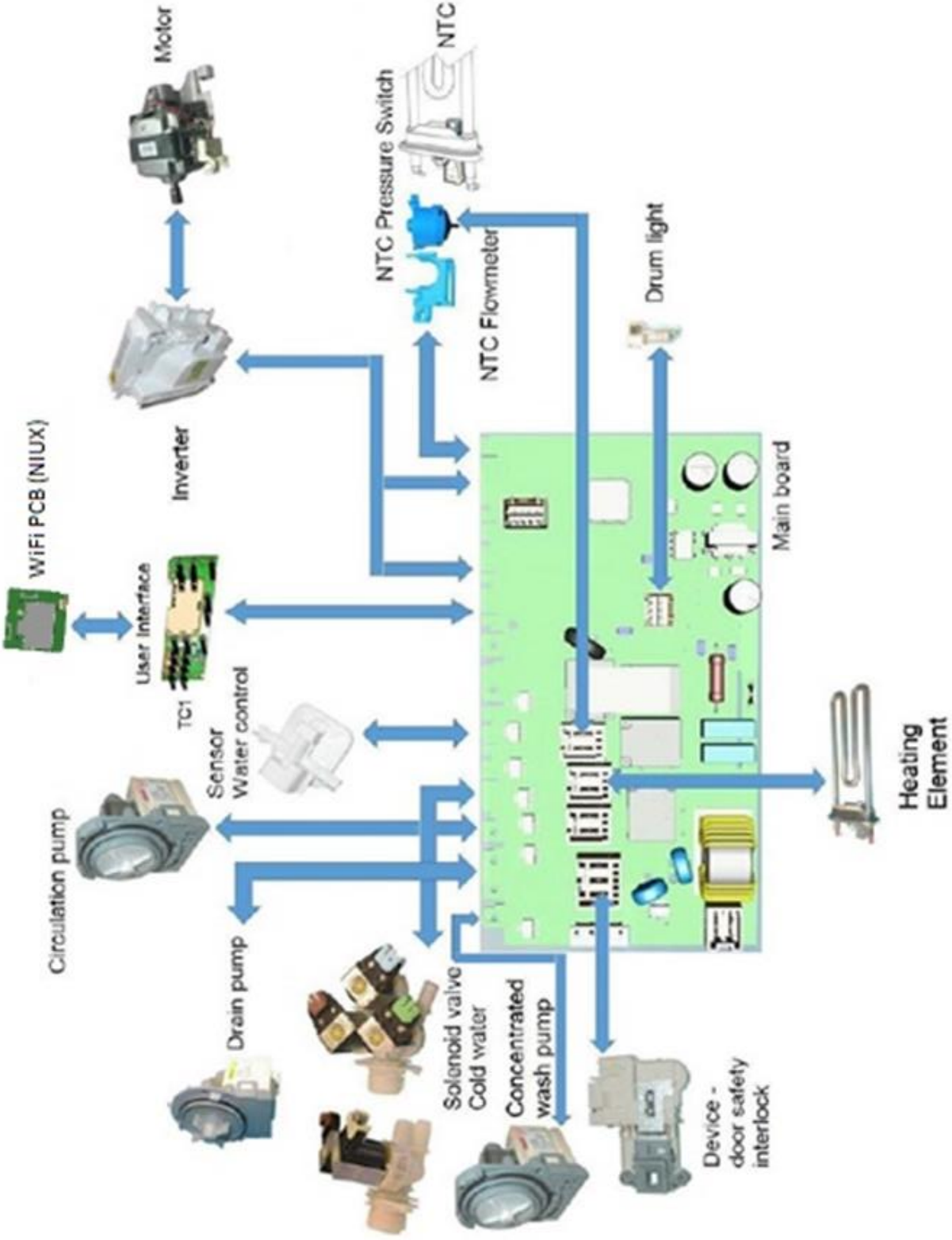
PCB & COMPONENTS LAYOUT



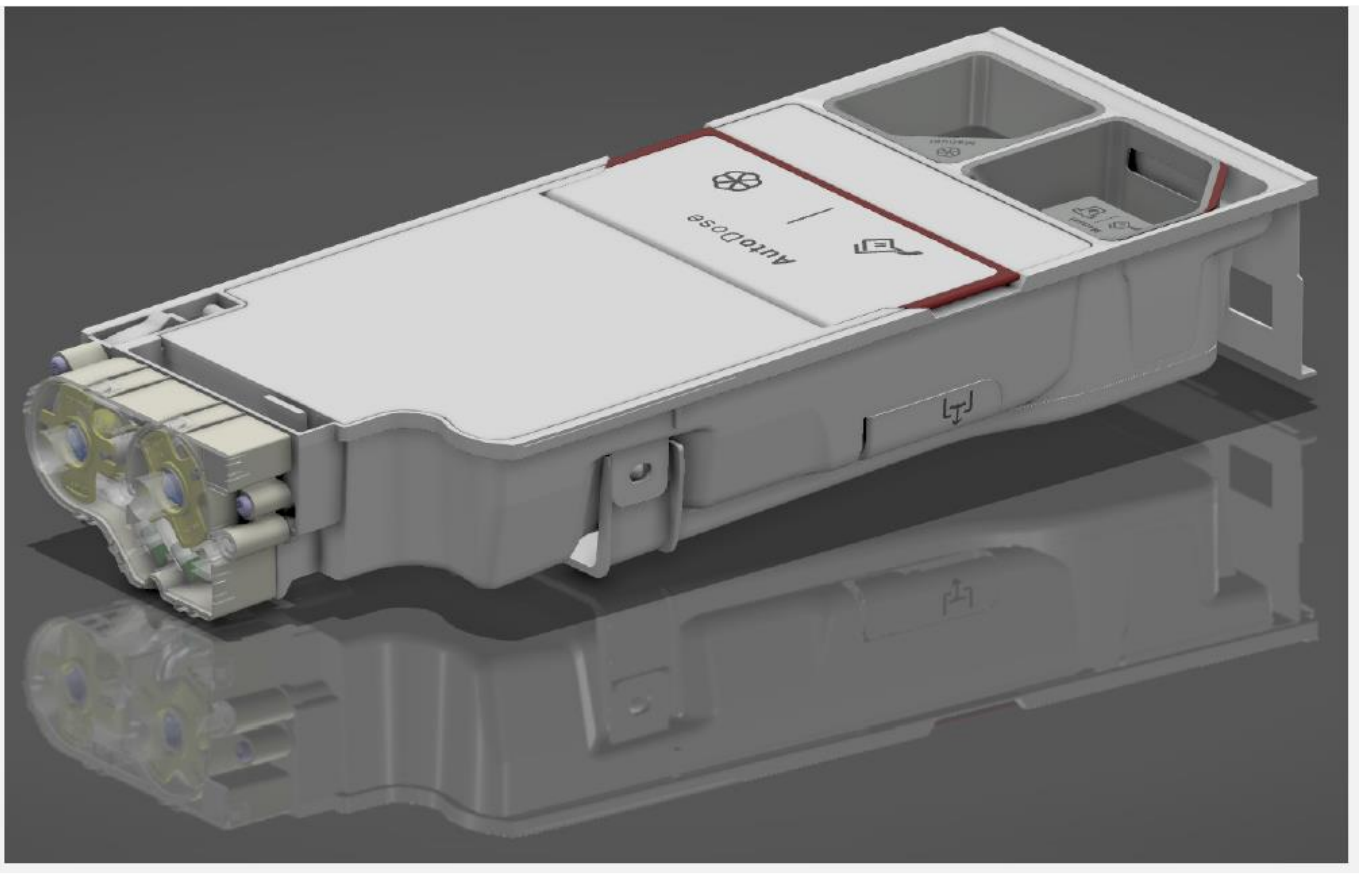
TECHNICAL SPECIFICATIONS

ELECTRICAL COMPONENTS

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

AutoDose Dispenser

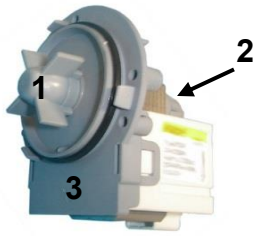
Please refer to a separate service instruction WMSI1012 regarding this component



Drain Pump – Aqua Control

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!

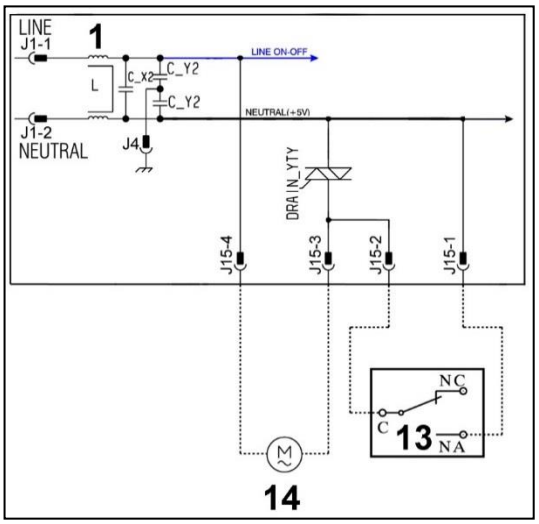
Synchronous pumps, when powered on empty (disconnected from the water circuit), may not start in some cases because their very construction makes them need an antagonist torque on the wheel to allow the rotor to move in one of the two directions.

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 activated for a brief period or moves on to the next phase.

1. *Main circuit board*
13. *Aqua control sensor*
14. *Drain pump*

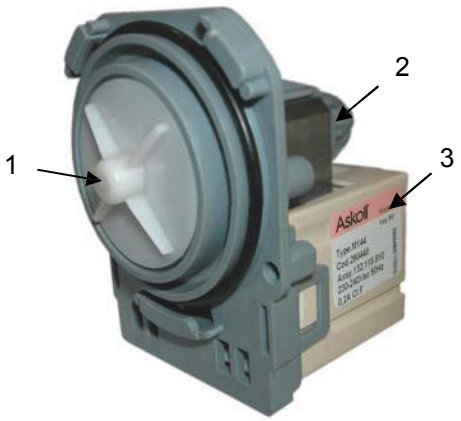


Circulation Pump

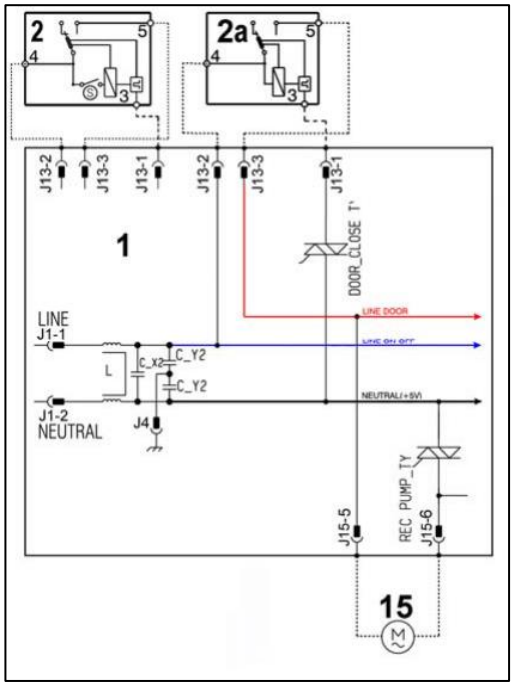
General Characteristics

In models with Jetsystem washing, a synchronous circulation pump is fitted, which is designed to circulate water continuously, withdrawing it from the filter body and introducing it into the tub through the bellow seal.

It is powered directly by the main circuit board via a triac and is fitted with a thermal cut-out.



1. Wheel
2. Rotor
3. Stator



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

Important!

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

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

“Concentrated Wash” Wash Pump

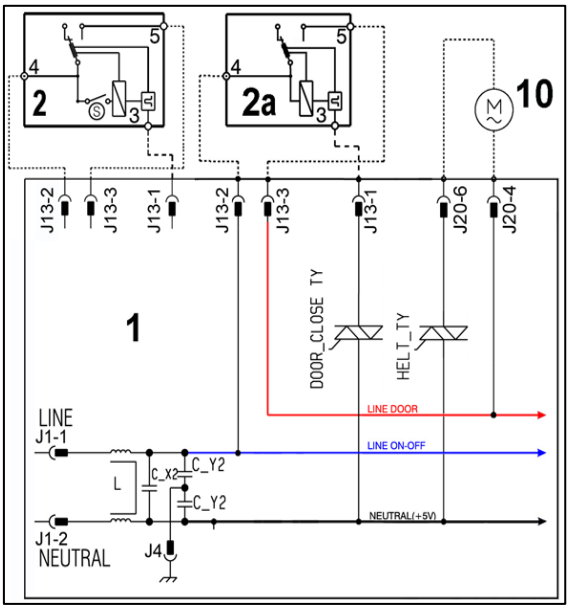
General Characteristics

The models featuring the “Concentrated Wash” are fitted with a synchronous pump, whose task it is to circulate the water in the cycle, to allow the detergent to break down and disperse fully, withdrawing it from the filter body and introducing it into the tub at the heating element height.

It is powered directly by the main circuit board via a triac and is fitted with a thermal cut-out.

1. Wheel
2. Rotor
3. Stator

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



Important!

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

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

Aqua Control (where featured)

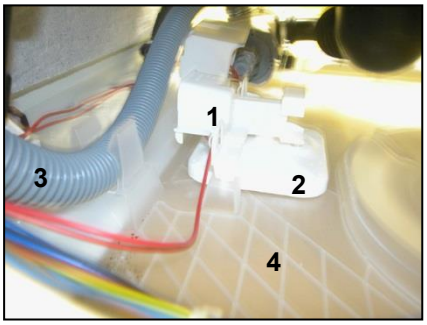
General Characteristics

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

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

When it is triggered, the LCD display shows an ALARM (if the machine is on). See table of alarms.

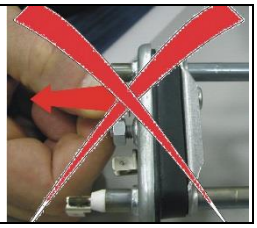
1. *Micro-Switch*
2. *Float*
3. *Drain Pipe*
4. *Aqua control bottom*



Heating Element

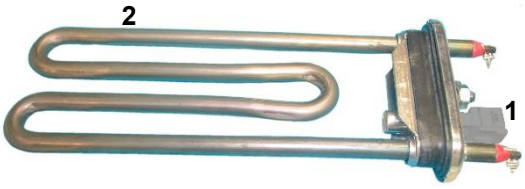
- **When replacing the heating element, please refer to the code shown in the list of spare parts relating to the appliance.**
- **It is strictly forbidden to tamper with the heating element in any way!!!**

  (eg: changing the NTC probe, etc...)



General Characteristics

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

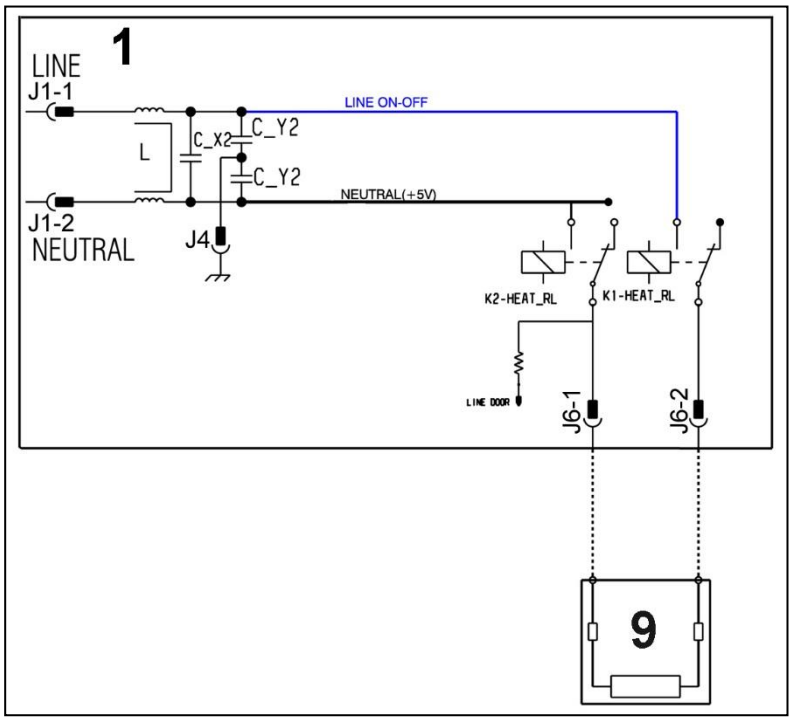


The heating element of the washing water is armoured, i.e. it is inserted in sealed tubular stainless steel casing.

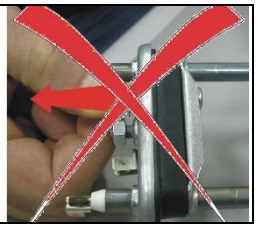
It is powered by two relays (K1, K2) situated in the circuit board. It is fitted with two thermal fuses which trip if the temperature of the heating element exceeds the values for which they were calibrated.

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

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

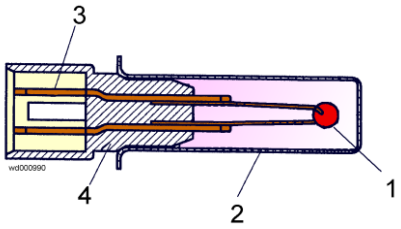


Temperature Sensor

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

General Characteristics

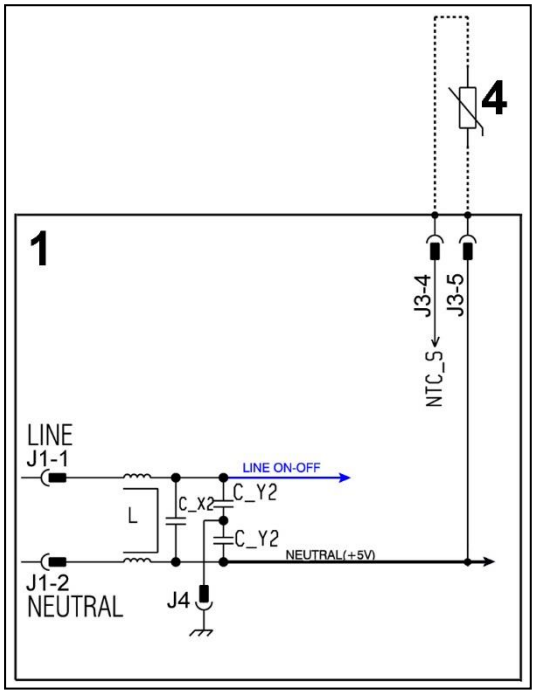
1. *NTC heating element*
2. *Metal capsule*
3. *Terminals*
4. *Plastic casing*



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

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

1. *Main circuit board (2 WD)*
4. *NTC probe (5 WD)*

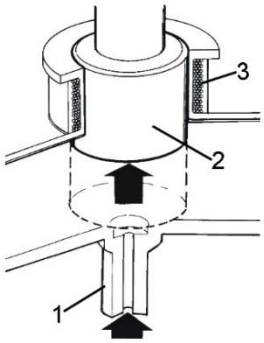


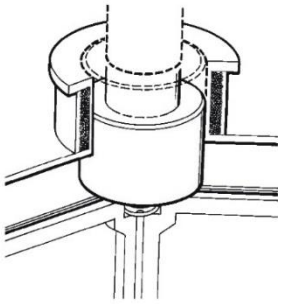
In the event of a fault (short-circuit or stoppage) an alarm will be displayed - see table of alarms.

Analogue Pressure Switch

General Characteristics

1. Small pipe
2. Core
3. Oscillating coil



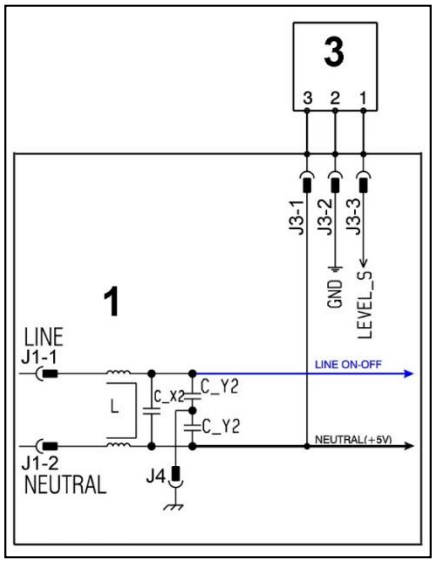


The pressure switch is connected via a pipe to the pressure chamber.

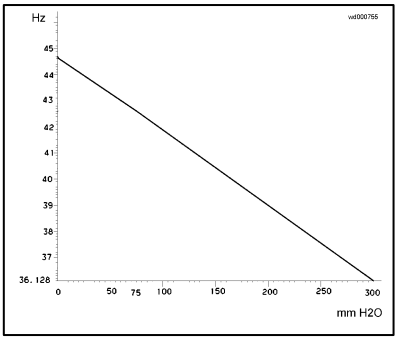
When water is introduced into the tub, this creates a pressure inside the hydraulic circuit that causes the membrane to change position. This in turn modifies the position of the core inside the coil, thus changing the inductance and the frequency of the oscillating circuit.

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

1. Main circuit board
3. Analogue pressure switch



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



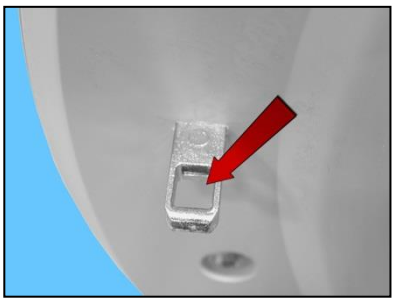
In the event of a fault an alarm will be displayed - see table of alarms.

Door Safety Interlock PTO (Pull to Open)

General Characteristics

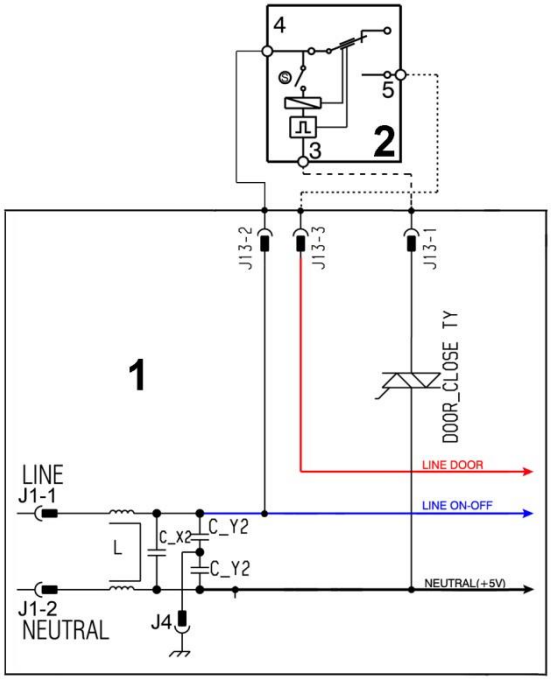
This appliance is not fitted with a safety device featuring the traditional fastening latch which necessitated the removal of the handle to open the appliance door.

The new safety device uses a new latch version with a hole in the middle, shown by the arrow (see figure) and you pull the handle to open the appliance door.



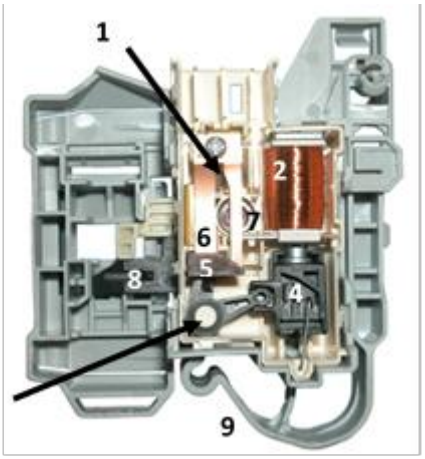
The instantaneous door interlock allows the door to be opened as soon as the drum stops, if the conditions described hereafter are met.

1. Main electronic circuit board
2. Door safety interlock



Operating Principle

1. Solenoid protection PTC2. Door safety interlock
2. Solenoid
3. Lifting assembly
4. Cam (with Labyrinth)
5. Locking pin
6. Electrical contacts (main switch)
7. Door sensing switch
8. Cursor
9. Manual opening



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

2) When the program ends or the Start/Pause button is pressed, the circuit board sends two additional 20msec pulses (200msec apart):

   a) The first pulse moves the cam (4) by another position, without releasing the pin (5).

   b) 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).

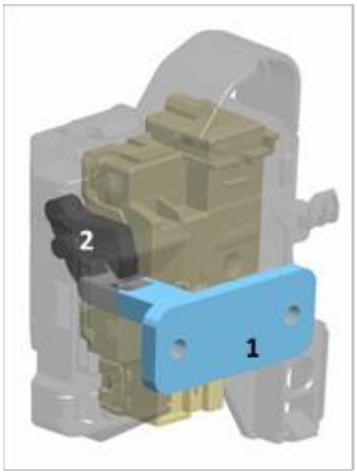
Appliance door/door open conditions

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.

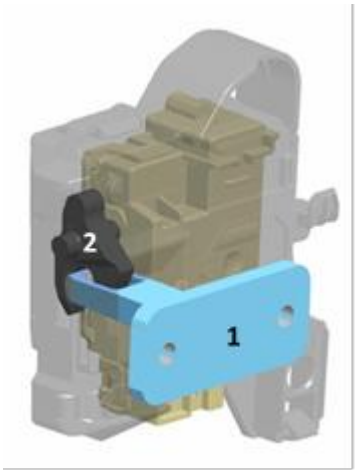
Mechanical Operation

1. Latch
2. Ratchet



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

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



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

Manual Opening of the Appliance Door

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

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

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

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

To access the manual opening, proceed as follows:

Remove the worktop.

1) Open the filter flap (lower RH 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 twice

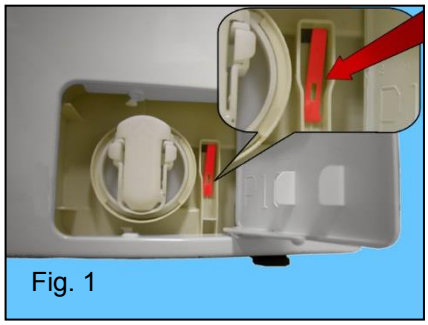


Fig. 1

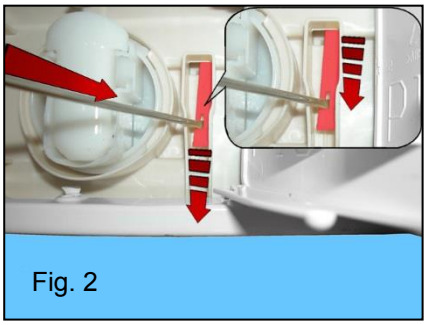


Fig. 2

1) Pull the handle

Triple-Phase Synchronous Motor with Permanent Magnets

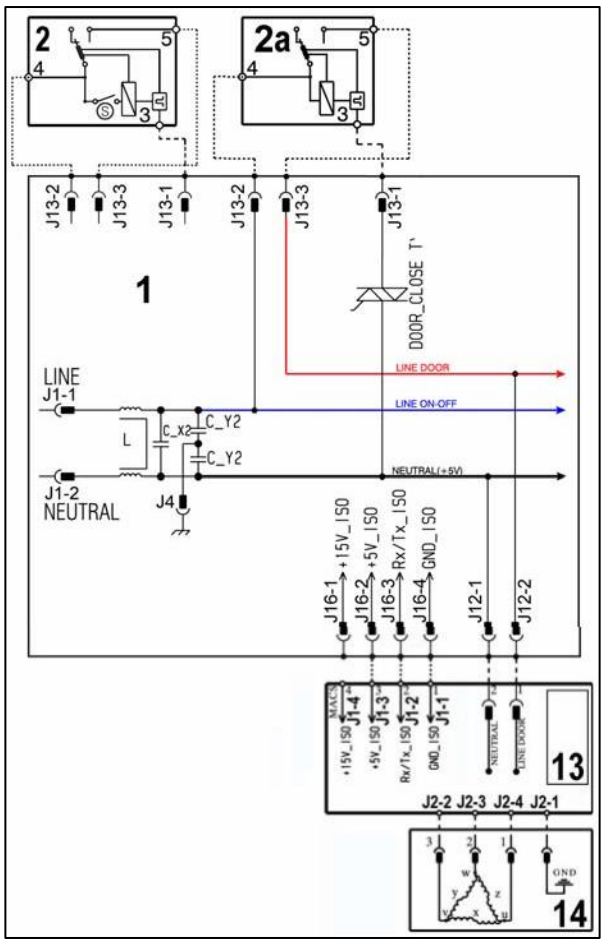
General Characteristics

1. *Main electronic circuit board*
2. *Door safety interlock (with Door sensing switch)*

2a Door safety interlock (without Door sensing switch)

13. *Inverter*
14. *Motor*

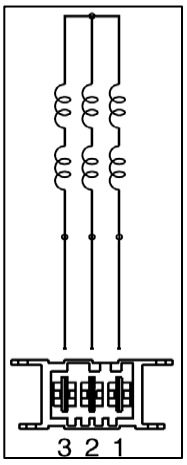
X-Y-Z = Motor Windings



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:

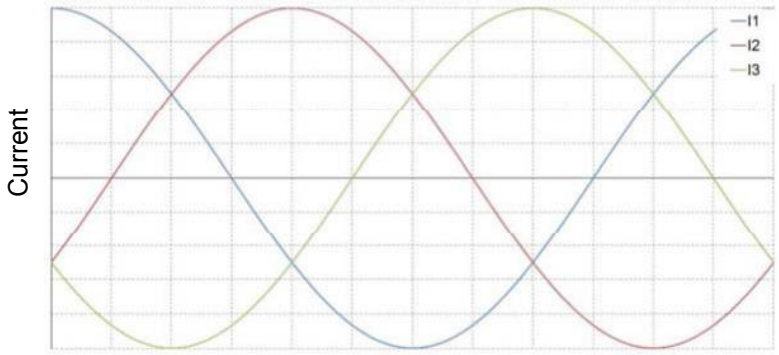


Coil y ohm 4.94 ~ ±7% (contacts 2-3)
Coil x ohm 4.94 ~ ±7% (contacts 1-2)
Coil z ohm 4.94 ~ ±7% (contacts 1-3)

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.

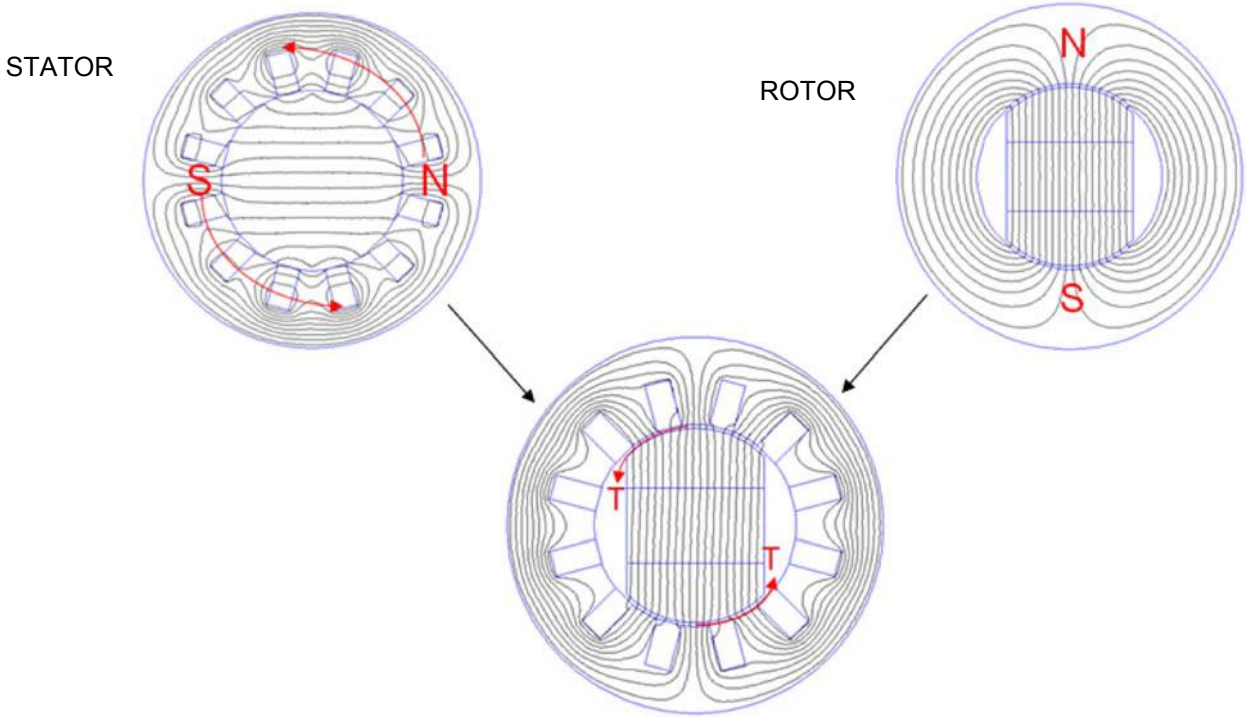
The magnetic field of the stator is produced, as in asynchronous motors, by the current that passes through the windings; if this current is three-phase alternating current, the magnetic field of the stator has a fixed intensity and variable direction (rotating): hence a rotating magnetic field is produced.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



Laundry

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

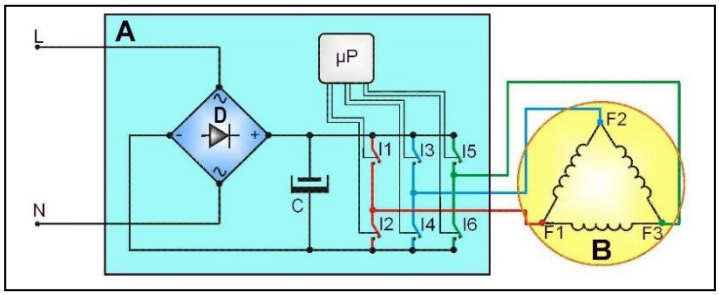
Inverter - UIMC / EMC14

General Characteristics

The EWX14 electronics use a new asynchronous motor, with 2 poles, three-phase, with high performance and low noise levels.

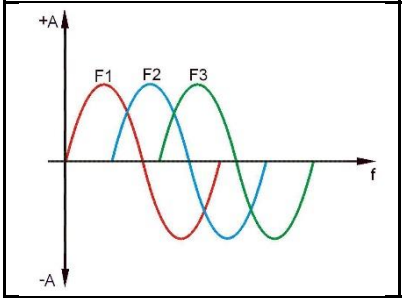
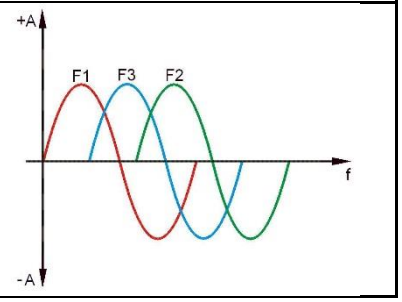
L = Phase
N = Neutral
A = “INVERTER” board
B = Motor
C = Condenser
D = Diodes
I1÷6 = Switches
F1÷3 = Motor connectors
µP = Micro Processor

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

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

The 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 “INVERTER” plastic cover, thus allowing any capacitor to discharge and avoid an electric shock.**

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

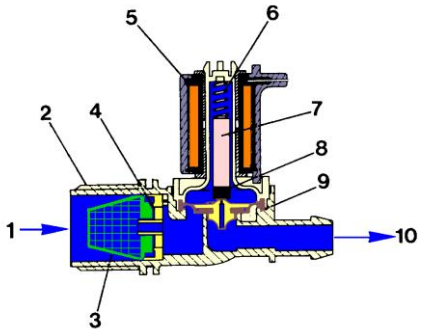
Solenoid Valves

General Characteristics

SOLENOID VALVE TWO WAYS	SOLENOID VALVE THREE WAYS
	

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

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



Operating Principle

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

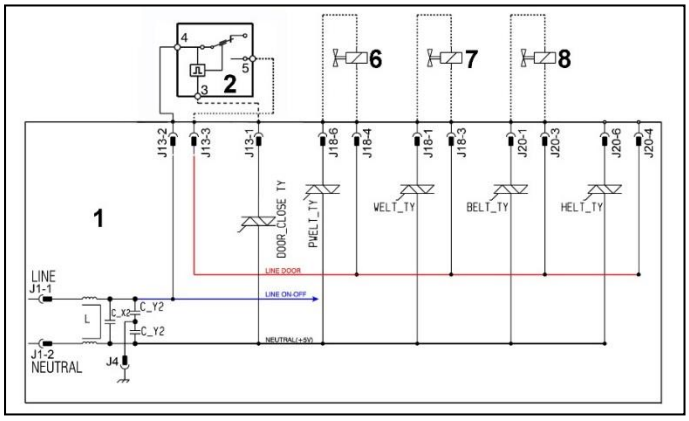
When the coil is powered, the core is attracted, releasing the central hole of the membrane. Consequently the valve opens.

Mechanical Jamming of the Solenoid Valve

The solenoid valve may jam open without 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.

Low Water Pressure

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

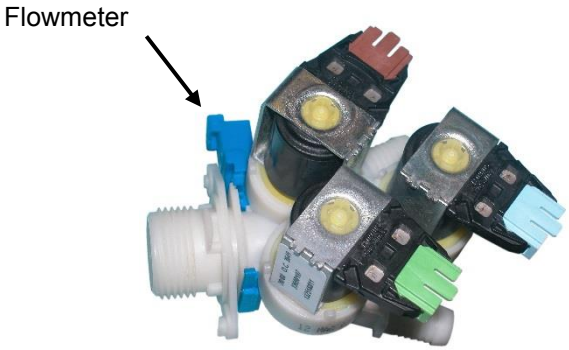


1. *Main circuit board*
2. *Door lock*
6. *Pre-wash solenoid valve*
7. *Wash solenoid valve*
8. *Bleach solenoid valve*

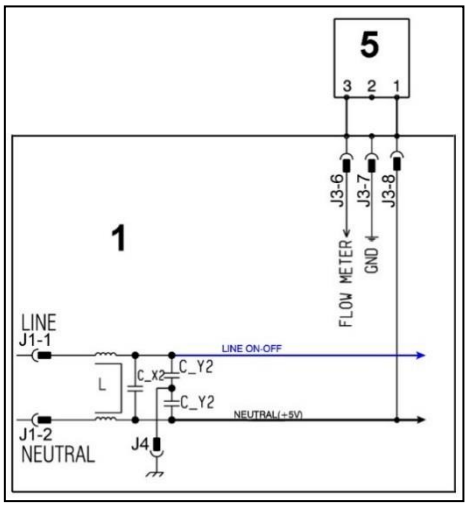
In the event of a fault an alarm will be displayed - see table of alarms.

Flowmeter

General Characteristics

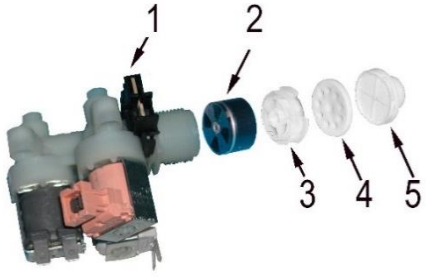


1. *Main circuit board (2 WD)*
5. *Flow sensor (6 WD)*



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.

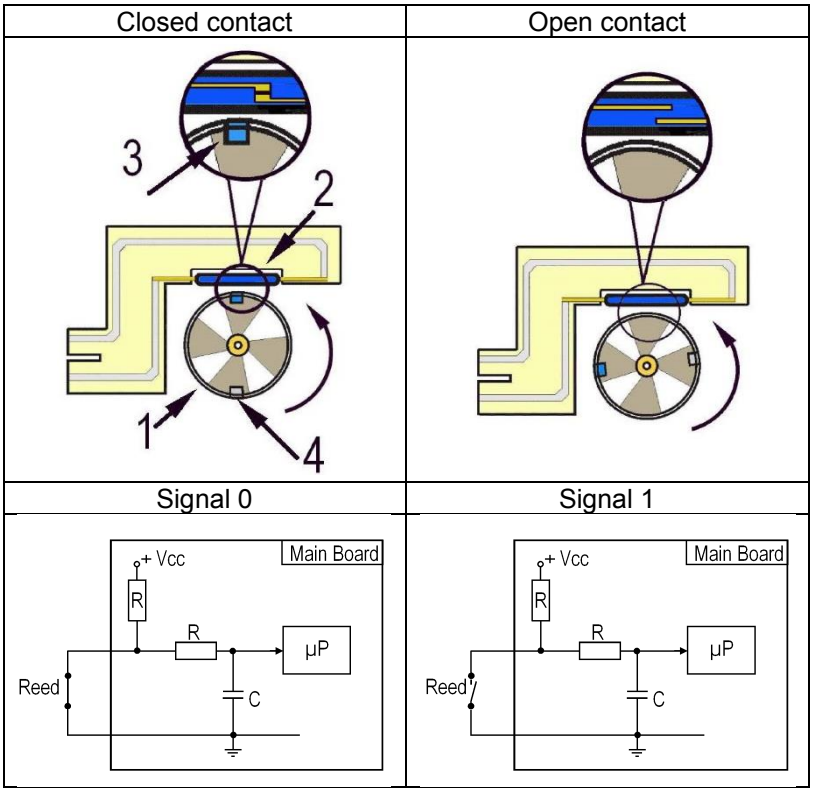
In the event of a sensor failure, the water level is controlled by the analogue pressure switch.

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

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).

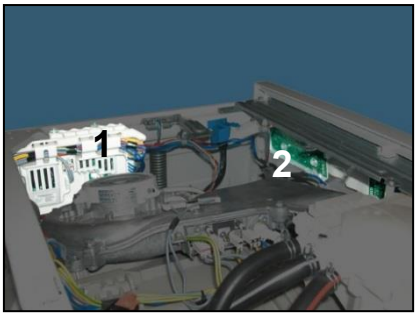
The turbine completes 230 revolutions for each litre of water. The operating range of the flow sensor is 0.2÷10 bar.

Using the signal it receives, the micro-processor can calculate the number of litres of water passing through the solenoid valve.

WM Main Electronic Control

The electronic control is made up of:

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



The control/display PCB contains: the selector used to select the washing programme, the LCD display to show information on the programme, sensors used to adjust the temperature, the spin speed and optionally to select an option, the Start/PAUSE button and finally the ON/OFF button (TC3 styling).

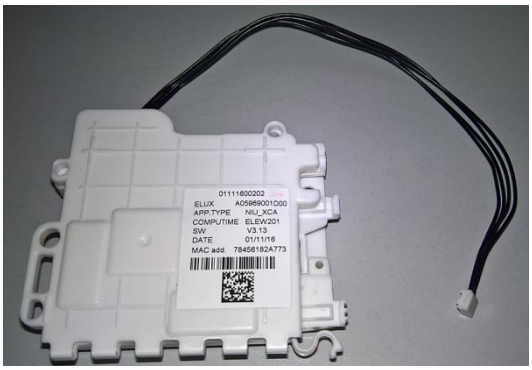
The commands acquired by the display board (by turning the selector, selecting an option, etc...) are sent to the main circuit board, which powers all the electrical components (cold water solenoid valve, motor control board (Inverter), drain pump, heating element, door safety interlock, etc.).

It controls the level of water via the analogue pressure switch.
It controls the state of the door.
It controls the speed of the motor.
It controls the temperature of the 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 using the flow meter.

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

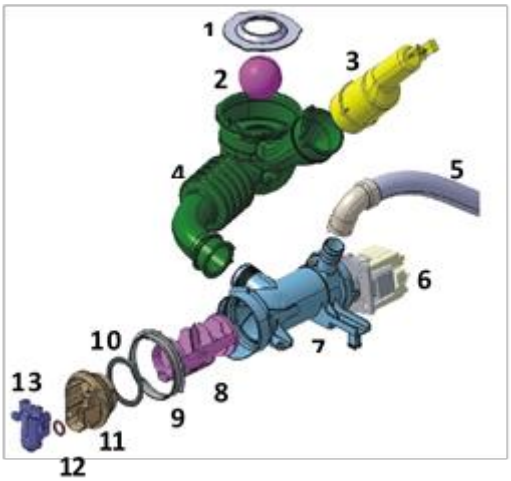
WiFi PCB (NIUX)

The WiFi PCB is used to connect the appliance to to local WiFi network allowing the appliance to connect to cloud server in order to operate the appliance remotely via an Application on a mobile device.



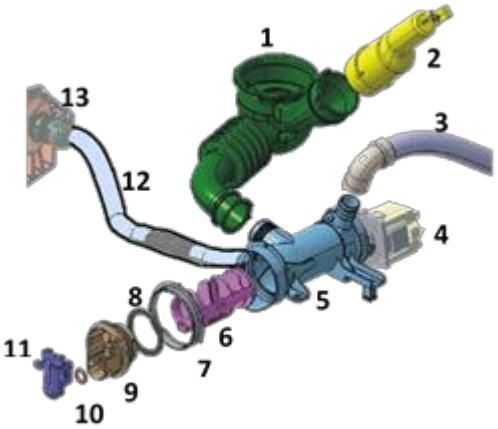
Water Circuit (Recic & CW pumps, Turbidity & Conductivity sensor)

OKO Version Drain Circuit



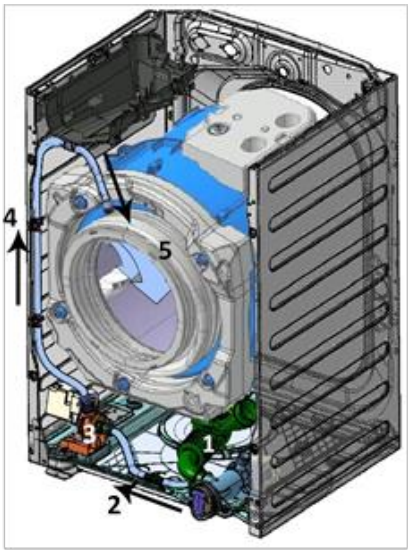
1. *Ball lock ring*
2. *Ball*
3. *Pressure chamber*
4. *Filter body tub tube*
5. *Drain pipe*
6. *Drain pump*
7. *Filter body*
8. *Filter or needle trap*
9. *Filter dial seal*
10. *Filter dial*
11. *Locking lever seal*
12. *Locking lever*

JET Version Drain Circuit



1. *Filter body tub tube*
2. *Pressure chamber*
3. *Drain pipe*
4. *Drain pump*
5. *Filter body*
6. *Filter*
7. *Filter body seal*
8. *Filter knob seal*
9. *Filter dial*
10. *Locking lever seal*
11. *Locking lever*
12. *Circulation pump suction tube*
13. *Circulation pump*

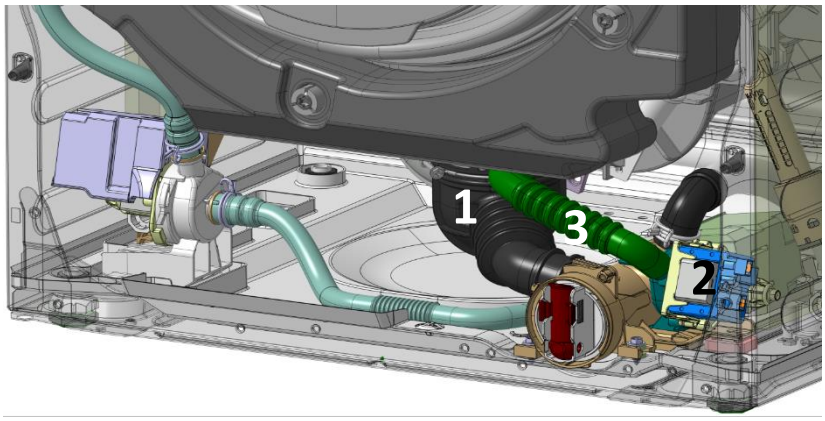
Operating Principle



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

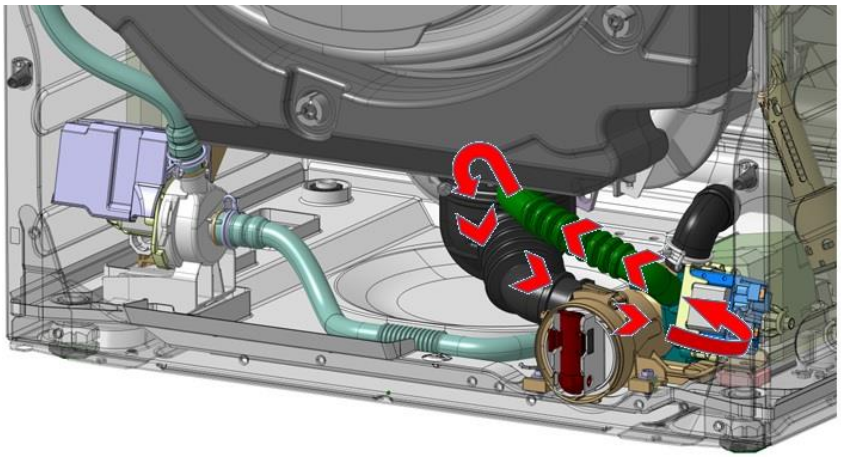
Concentrated Wash (CW 2.0)

1. *Tub drain pipe*
2. *Concentrated wash pump & scroll*
3. *CW Hose*



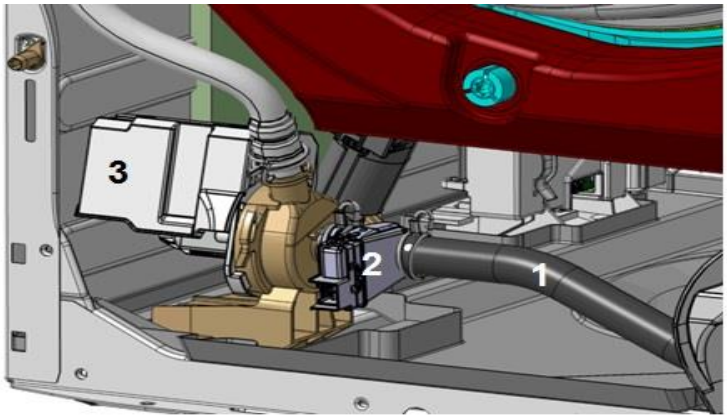
Operating Principle

During the washing cycle, the electronic control powers the “Concentrated wash” pump (2) at set intervals, which suctions the water and detergent deposited in the drain circuit (1) and introduces them back into the circuit inside the tub (along pipe 3), so as to allow the full break-down and dispersal of the detergent.



Turbidity and conductivity sensors

1. *Hose pump body to recirculation pump*
2. *Turbidity & Conductivity sensors*
3. *Recirculation pump*



Operating Principal

This feature will optimise the rinse profile and adds one or more rinses to the running cycle automatically in order to optimise rinse quality. With the help of this feature machine can differentiate between powder and liquid detergent as well.

Turbidity sensor is based on optical technology. Built in LED emits a specified quantity of light which is scattered by any suspended particles (soil) through the water and arrives at phototransistor base for dispersion measurement. As the amount of total suspended particles in water increases, the water's turbidity level (cloudiness or haziness) increases indicating more rinses are required.

Conductivity Sensor measure how well a solution conducts an electrical current. This type of measurement assesses the concentration of ions in the solution. The more ions that are in the solution, the higher the conductivity signalling to the processor on the main board that more rinses are required.

DISASSEMBLY / ASSEMBLY

WORKTOP

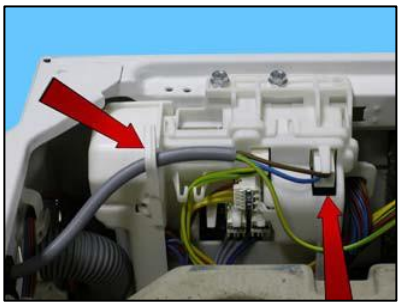
Remove the screws that secure it to the back panel.

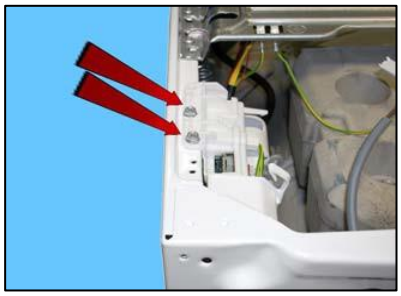
Pull it out from the back.

MAIN BOARD(Washer)

Remove the worktop (see relevant paragraph)

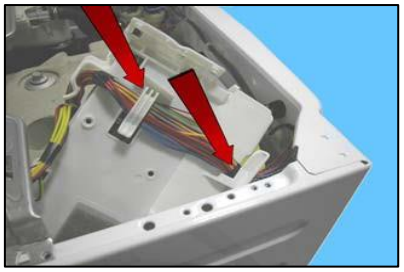
Pull out the power supply cable from the hooks and from the connector



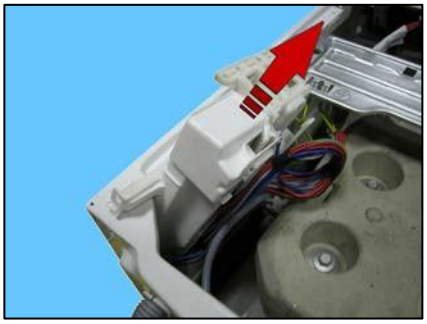


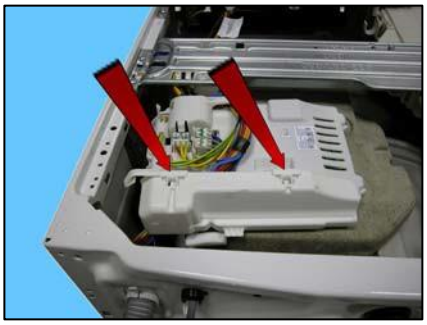
Unfasten the two screws securing it to the cabinet

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

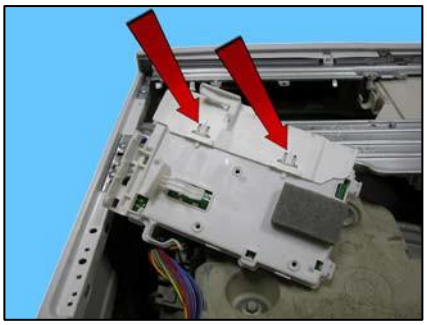


Remove the main board.

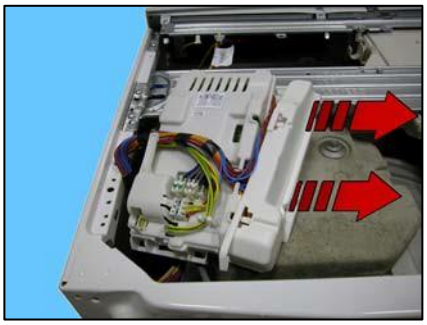




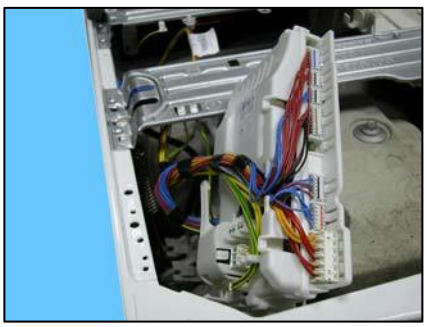
Release the hooks securing the connectors protection on one side,



then the other.



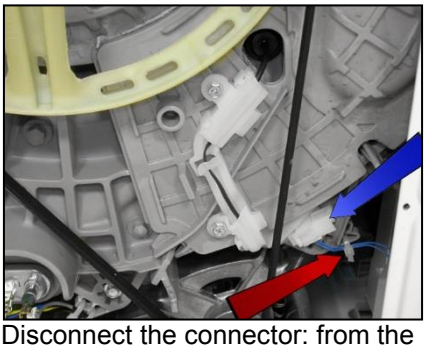
Remove the connectors' protection.



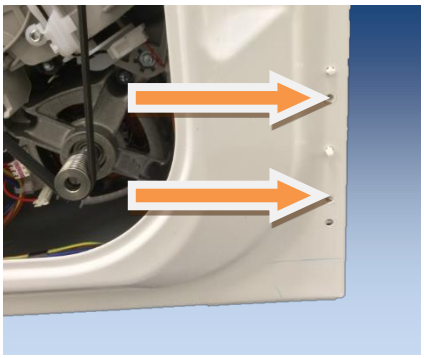
Pull out the connectors positioned beside the board.

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

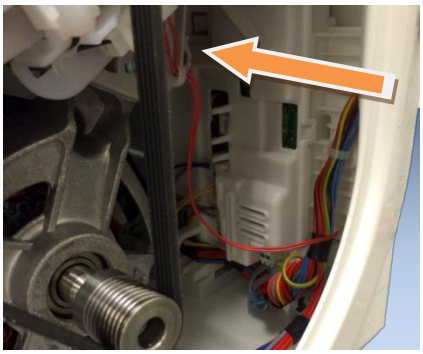
MAIN BOARD (Washer/Dryer)



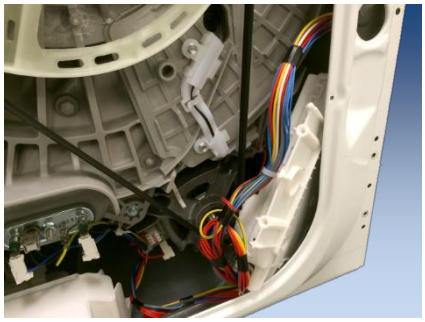
Disconnect the connector: from the NTC probe (blue arrow).
Cut the clamp which secures the wiring of the NTC probe (red arrow).



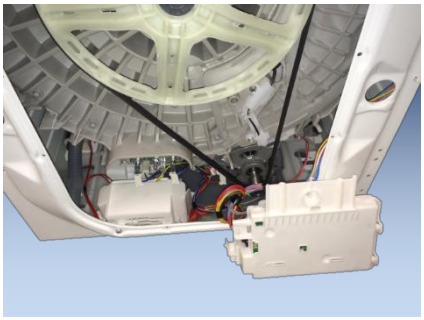
Remove the screws which secure the main board assembly to the cabinet.

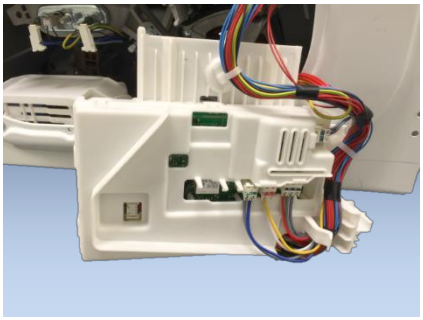


Push the main board assembly towards the inside of the appliance.

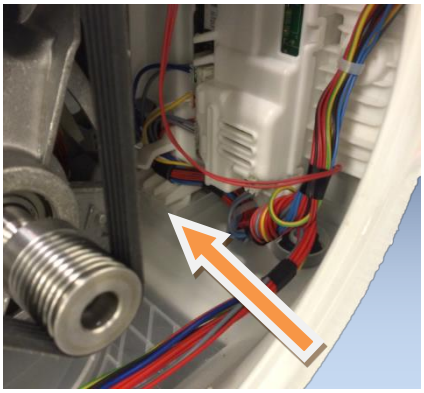


Turn it and position it as shown in the figure.
Push the washing unit towards the inside and remove the main board assembly.





Disconnect the connectors.

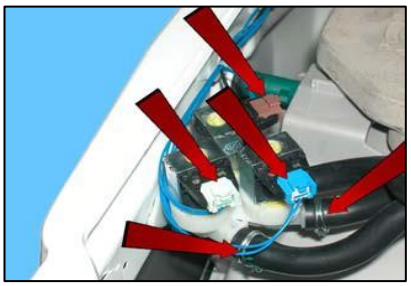


When repositioning the main board assembly in its seat, pay attention that the hook is inserted perfectly in place in the crosspiece.

SOLENOID VALVE (2 or 3 way)

Remove the worktop (see relevant paragraph). Disconnect the connectors.

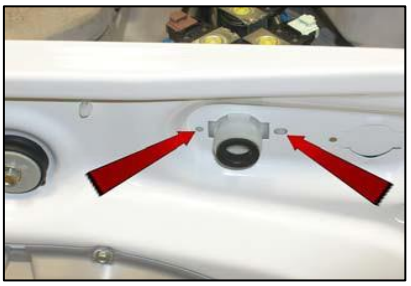
Pull out the pipes which connect the solenoid valve to the detergent dispenser.



Unscrew the water fill pipe from the solenoid valve.

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

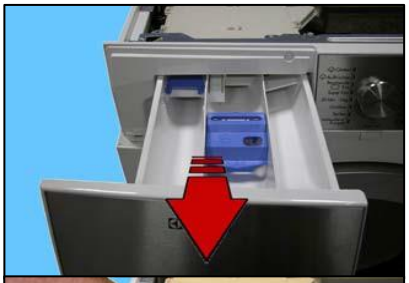
At the same time, turn the solenoid valve to remove it.



CONTROL PANEL

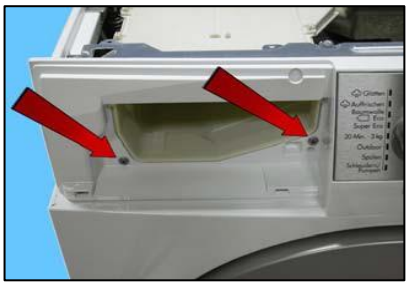
Remove the worktop (see relevant paragraph).

Note: Control panel shown in the pictures are for illustration purposes only. The disassembly instruction is the same regardless of model.



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

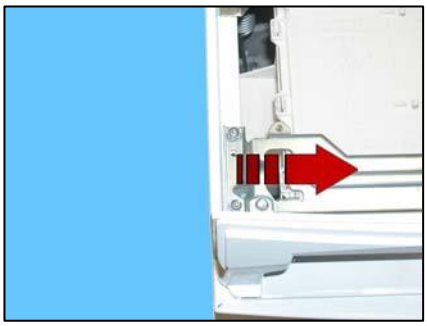
Loosen the screws that attach the control panel to the detergent tray.



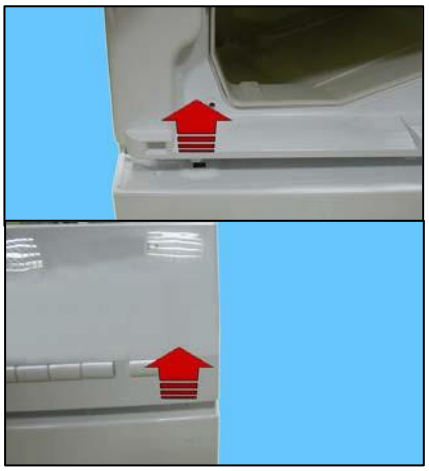
Pull out the clamp from the crosspiece.

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

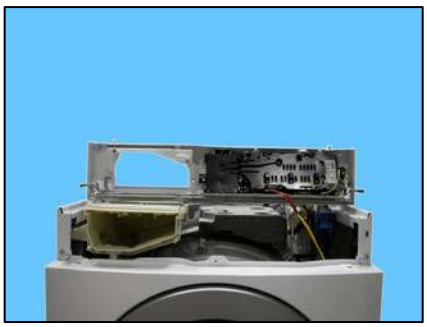
Release the anchor tab which secures the detergent dispenser to the crosspiece.



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

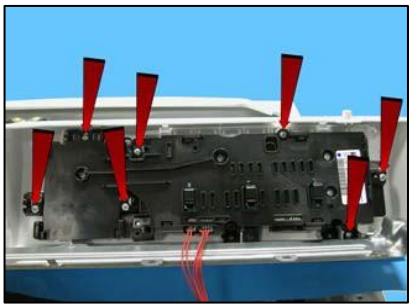


Remove the control panel and position it as shown in the figure, making sure you introduce a protection to prevent scratching it.



USER INTERFACE

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

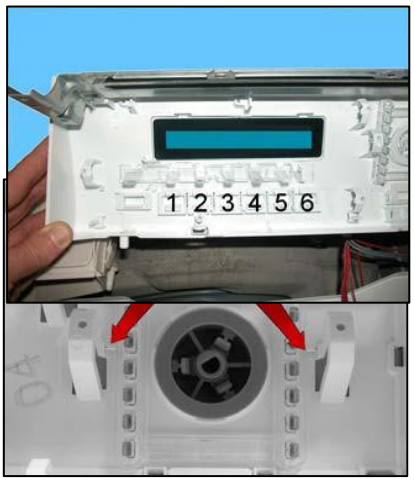


Remove the screws and release the hooks which secure the PCB assembly to the control panel.

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

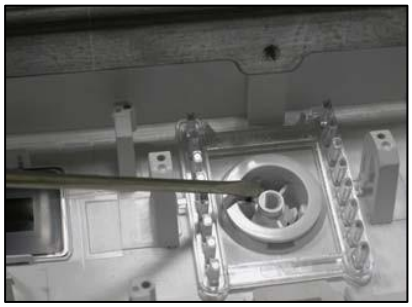
.

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.

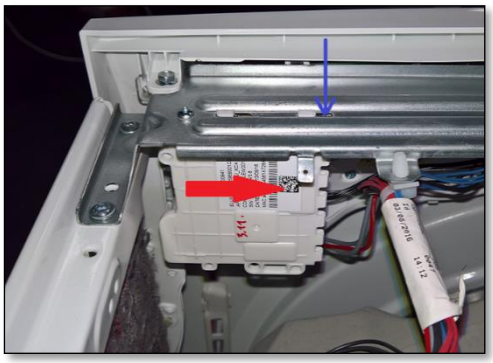


When reassembling the display board assembly and the control panel.
Remove the dial from the dial cover.

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

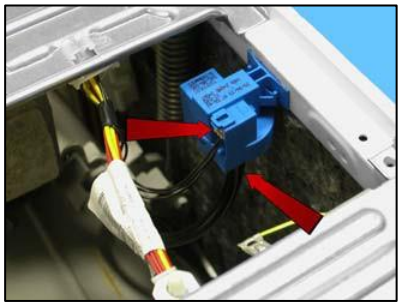
WiFi PCB (NIUX)

WiFi PCB is located behind the User interface PCB.
Unscrew the Philips head screw.



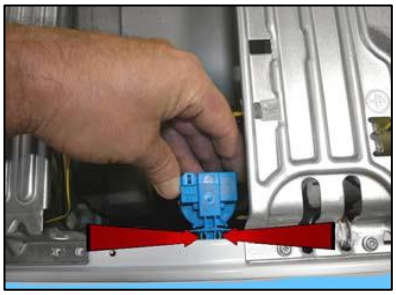
Use a small srew driver to press the tab where indicated by blue arrow then slide the PCB in direction shown to remove.

ANALOGUE PRESSURE SWITCH



Remove the worktop (see relevant paragraph).

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

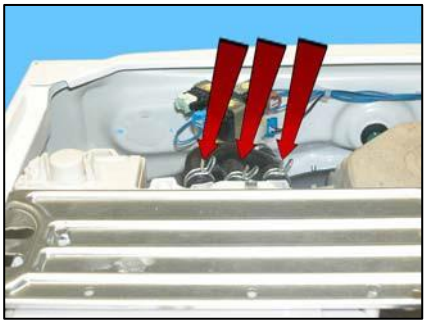


Tighten the two tabs which secure it to the cabinet and remove it.

DETERGENT DISPENSER

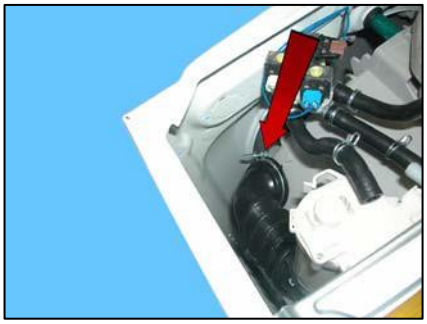
Remove the worktop (see relevant paragraph).

Remove the control panel (see relevant paragraph).



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

Unfasten the two screws securing it to the central crosspiece.



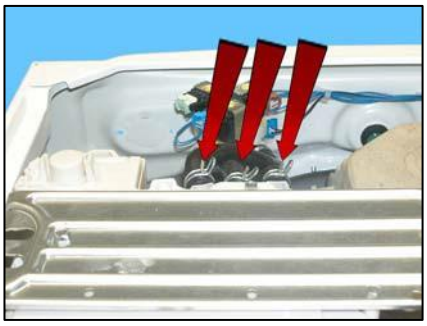
Unfasten the screw in the clamp that fixes the detergent loading pipe to the tray, and remove it from its housing.

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

Remove the detergent dispenser

DETERGENT DISPENSER

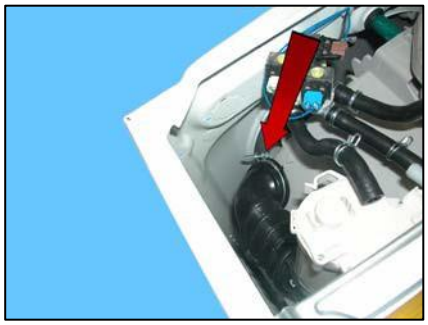
Remove the worktop (see relevant paragraph). Remove the control panel (see relevant paragraph).



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

Unfasten the two screws securing it to the central crosspiece.

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



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

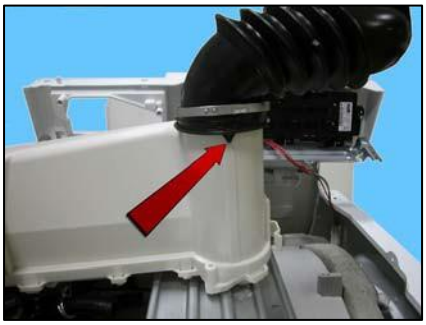
Remove the detergent dispenser.

DETERGENT FILL PIPE

Remove the worktop (see relevant paragraph).

Remove the control panel (see relevant paragraph).

Remove the detergent tray (see relevant paragraph).



Pull out the pipe from the detergent dispenser after breaking/loosening the clamp between the detergent dispenser and the detergent loading pipe.

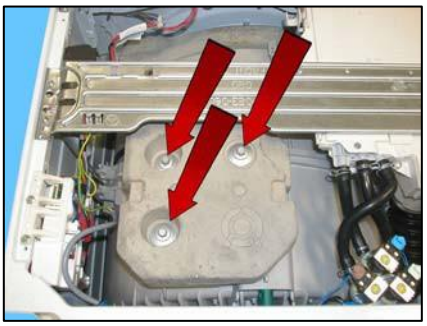
When reassembling, use a new clamp with the same characteristics. The size of the clamp to use is 65.5mm.

When introducing the pipe into the dispenser, make sure the two references are aligned.

UPPER COUNTERWEIGHT

Remove the worktop (see relevant paragraph).

Remove the three screws that secure it to the welded tub



When reassembling:

If the tub assembly is new, tighten the screws at a torque of 20Nm.

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

ACCESSING THE FRONT PART

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

- Door and Door Hinge
- Door safety interlock
- Blade
- Front panel

DOOR HINGE - DOOR

Door hinge is not replaceable on these models. If door hinge is required,

Complete door assembly will need to be replaced.

DOOR SAFETY INTERLOCK

Manual Opening of the Appliance Door

Note: Door handle or door covers shown in the pictures are a guide only. Different models may have slightly different look or colour. The functionality remains the same for all models.

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

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

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

To access the manual opening, proceed as follows:

Remove the worktop.

1) Open the filter flap (lower RH 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 twice

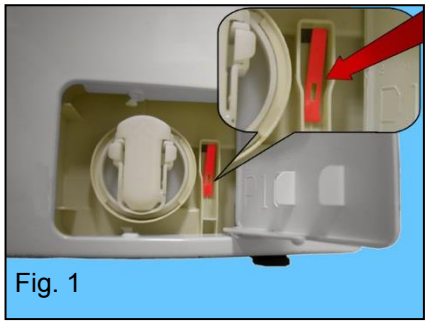


Fig. 1

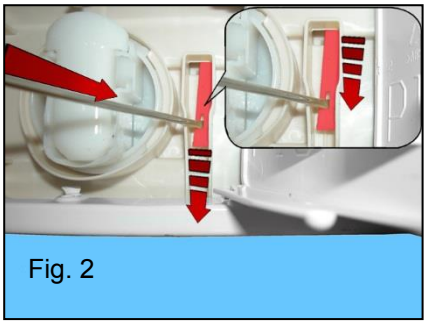


Fig. 2

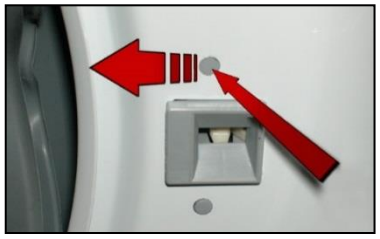
3) Pull the handle

Replacing the Door Safety Interlock

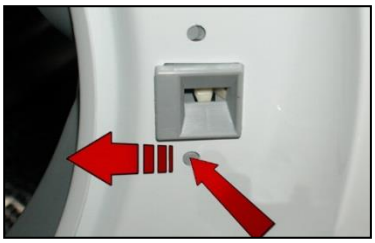
Remove the metal ring securing the bellow seal to the unit.

Remove the part of the bellow seal concerned from the unit.

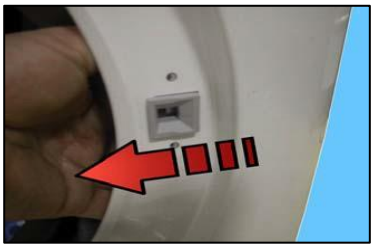
(PTO) Push the pin at the top inwards and at the same time move the door safety device towards the left. Holding the top still Push the pin at the bottom inwards and at the same time move the door safety device toward left



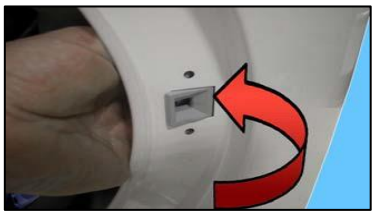
Remove the small rod from the pin (after removal, it stays in the vertical position)



Take the device and move it to the left.



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



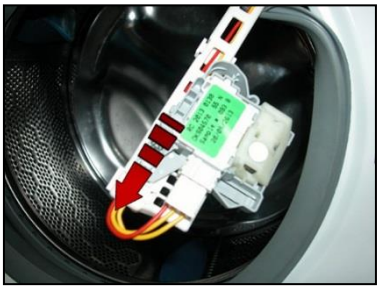
Pull it out towards the right and remove it.

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



Release the hook, remove the wiring and move it.

Insert a flat-tip screwdriver into the slot near the hook.

Tilt it in the direction of the arrow so as to release it from the latch, while at the same time pushing the micro-switch with your thumb in the direction shown by the arrow

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

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

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

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

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

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.

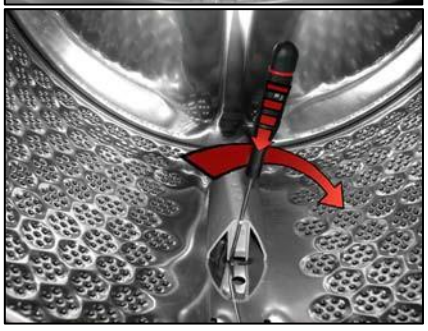
BLADE

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

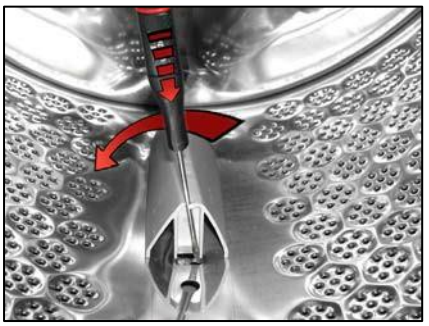
To remove it from the drum:

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 down.



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

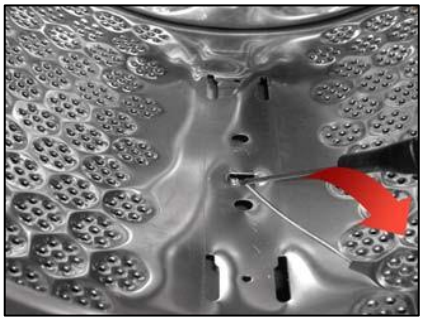


When the two tabs are down.

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

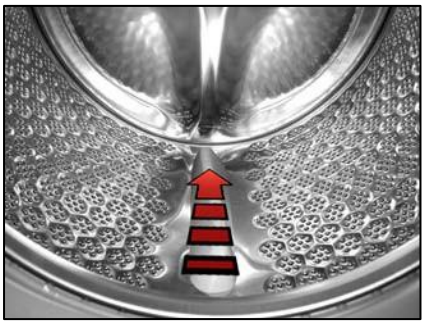
Before securing the new blade:

Insert a screwdriver beneath the tabs and raise them a little.



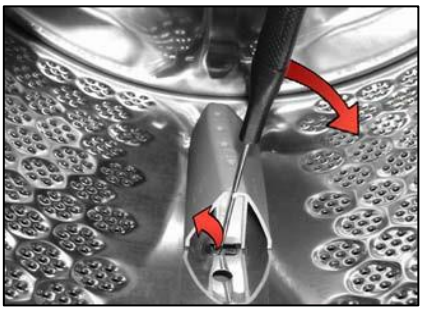
Position the new blade inside the drum guides.

Push it towards the back.



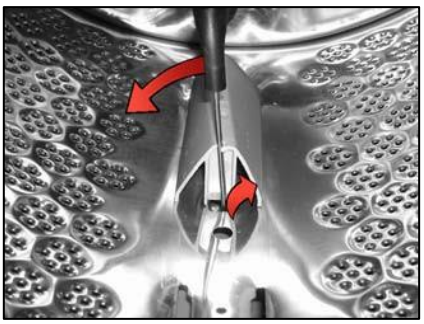
Insert the flathead screwdriver at a right angle to the blade (hole 6), so as to position it at the centre of the two tub tabs.

Tilt it towards the right so that the left tab moves upwards.



With the screwdriver still inserted in the slot.

Tilt it towards the left so that the right tab moves upwards.



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

FRONT PANEL

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

Remove door bellow seal from the front panel.

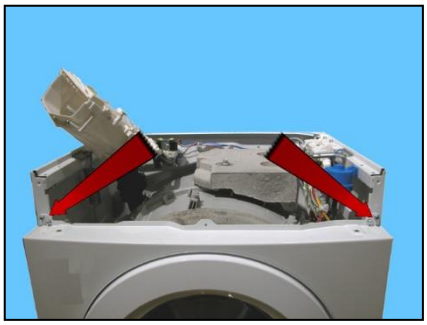
Remove the door safety interlock.

Tilt the washing machine towards the back.

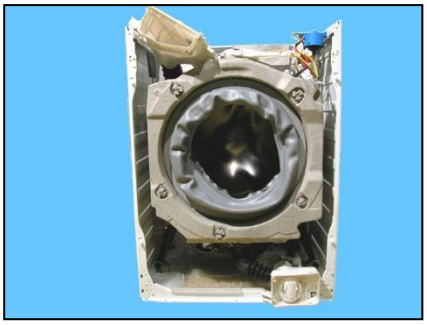
Unfasten the three screws securing the front panel at the bottom.

NOTE: These models have round filter door which is attached to the front panel. Filter door can be replaced without removing front panel but does not need to be removed when removing front panel.

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



Remove the front panel.



When re-assembling the front panel make sure the small rod of the door safety device is correctly positioned (see “Door safety device” paragraph).

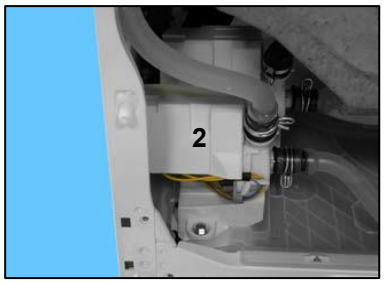
RECIRCULATION PUMP SYSTEM

Recirculation pipe (1)

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

If necessary, pull it out of the hooks that secure it to the side panel.

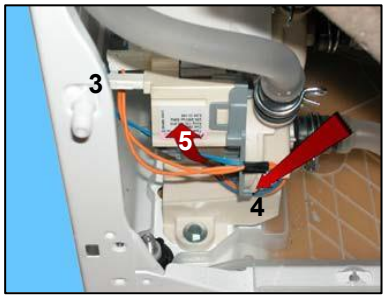
When re-assembling the front panel make sure the small rod of the door safety device is correctly positioned (see “Door safety device” paragraph)



- Circulation pump.

Drain off all the water from the drain circuit.

Remove the protection (2).



Disconnect the connectors (3)

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

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

Remove the pump.

When re-assembling the front panel make sure the small rod of the door safety device is correctly positioned (see “Door Safety Device” paragraph).

FRONT COUNTERWEIGHT

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

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

Unfasten the screws securing the door safety interlock (see related paragraph). Remove the front panel (see relevant paragraph).

Pull out the Jet pipe (see related paragraph).

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 15Nm. If the welded tub assembly is not new, align with the existing thread, and

When re-assembling the front panel make sure the small rod of the door safety device is correctly positioned (see “Door safety device” paragraph)

BELLOW SEAL

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

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

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

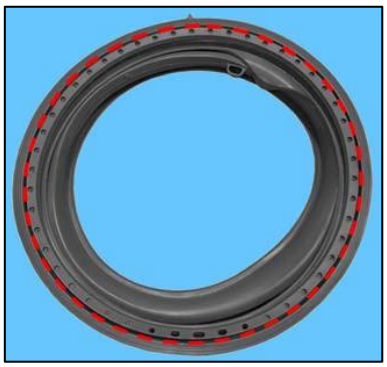
Remove the front panel (see relevant paragraph). Pull out the Jet pipe (see related paragraph).

Take the seal out of the welded tub.

(Take care as the seal is held in position by a snap ring).

When reassembling the seal

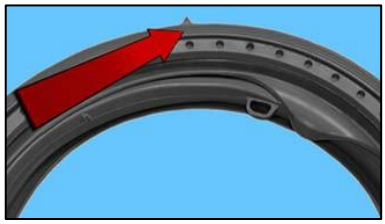
Use liquid soap to lubricate the part where the tub is inserted (indicated by the red circle).



Make sure the references are aligned.

Reference printed on the tub.

Reference in the bellow seal.



References.

Reassemble the snap ring between the door bellow seal and the tub. Reposition the circulation pipe in its seat.

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

When re-assembling the front panel make sure the small rod of the door safety device is correctly positioned (see “Door safety device” paragraph).

SHOCK ABSORBER WITH/WITHOUT WEIGHT SENSOR

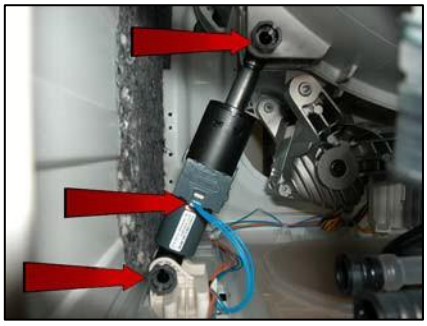
Remove the worktop (see relevant paragraph).

Remove the control panel (see relevant paragraph).

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

Unfasten the screws securing the door safety interlock (see related paragraph). Remove the front panel (see relevant paragraph).

Remove the recirculation pump and “Concentrated Wash” pump with the screw (see related paragraph).



Remove the connector if the shock absorber is fitted with a weight sensor Pull out the pins securing it to the tub and crosspiece.

To reposition the pins.

When re-assembling the front panel make sure the small rod of the door safety device is correctly positioned (see “Door safety device” paragraph).

DRAIN WATER CIRCUIT

- Tub drain pipe.

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

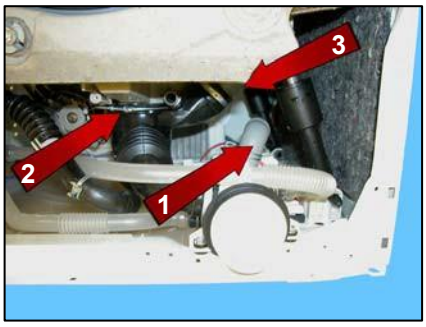
Remove the iron ring securing the bellow seal to the front panel.

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

Remove the front panel (see relevant paragraph).

Loosen the screw on the clamp.

Slide off the clamp and pull out the pipe that connects the CW pump to the tub.



Pull out the main drain pipe (1)

Loosen the screw of the clamp securing the tub drain pipe to the tub (2)

Pull out the pipe from the analogue pressure switch connecting the pressure chamber.

Release the pressure chamber (See pressure chamber description)

Pull out the tub drain pipe and pull out the pressure chamber (3).

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

When re-assembling the front panel make sure the small rod of the door safety device is correctly positioned (see “Door safety device” paragraph)

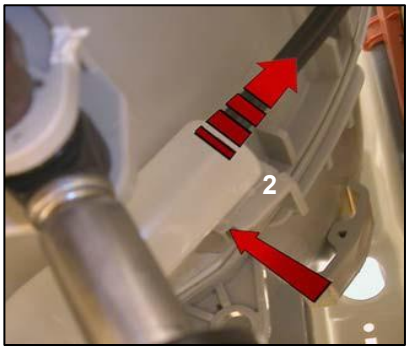
PRESSURE CHAMBER

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

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

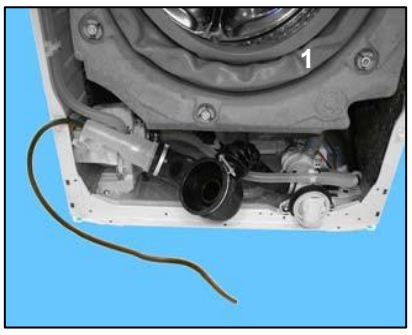
Unfasten the screws securing the door safety interlock (see related paragraph).

Remove the front panel (see relevant paragraph).



Pull out the pipe from the analogue pressure switch and hooks securing it to the welded tub.

Remove the tub drain pipe (see relevant paragraph).



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

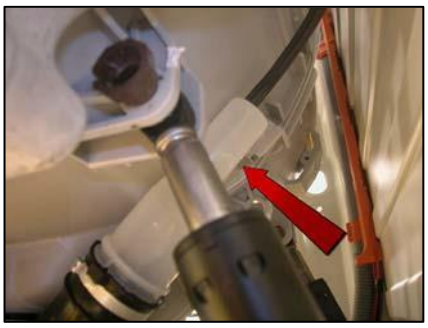
Turn the chamber under the tub and pull it out.

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 52.5mm.

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

When re-assembling the front panel make sure the small rod of the door safety device is correctly positioned (see “Door safety device” paragraph).

- Filter body

Remove the worktop (see relevant paragraph).

Remove the control panel (see relevant paragraph).

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

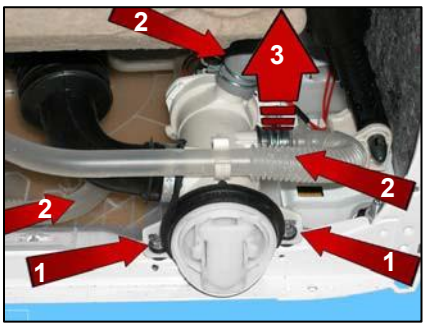
Unfasten the screws securing the door safety interlock (see related paragraph).

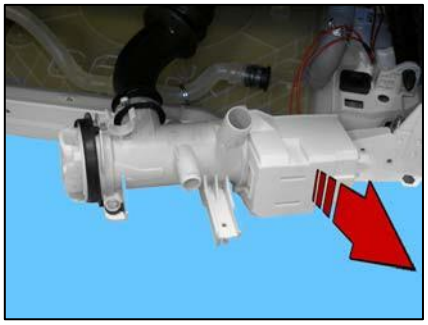
Remove the front panel (see relevant paragraph).

Loosen the screws securing it to the front crosspiece (1)

Pull out the main drain pipes (2) and circulation pump and CW pump connection pipes.

Raise it to remove the support inserted in the side crosspiece (3).





Remove the pump protection.

DRAIN PUMP and CONCENTRATED WASH

Remove the worktop (see relevant paragraph).

Remove the control panel (see relevant paragraph).

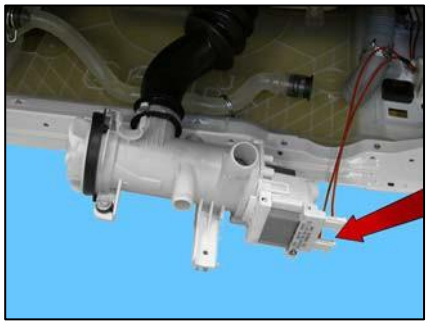
Remove the iron ring securing the bellow seal to the front panel.

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

Remove the front panel (see relevant paragraph).

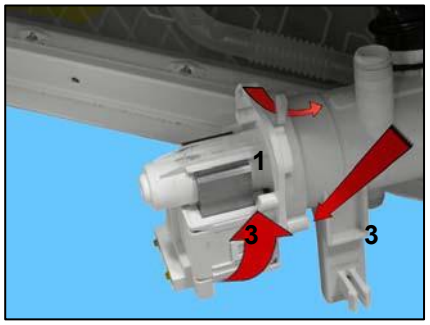
Remove the filter body (see relevant paragraph).

Remove the connectors.



For CONCENTRATED WASH pump, unscrew pump and scroll assembly located on the RH side of the filter body and pull out.

For DARIN PUMP, move the lock catch (1) with some pliers (take care not to break it) Turn the pump (2) anti-clockwise and remove it.



If the lock catch (1) 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 (3) shown by the arrow.

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

When re-assembling the front panel make sure the small rod of the door safety device is correctly positioned (see “Door Safety Device” paragraph).

TUB SUSPENSION SPRINGS

- Left spring

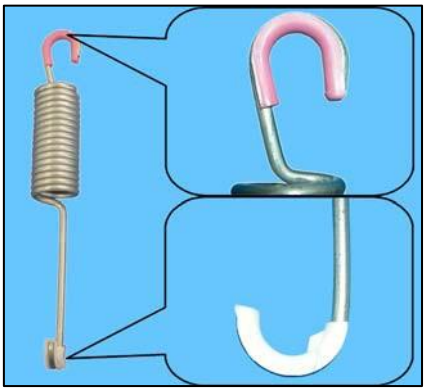
Attach the spring as shown in the figure: the shortest leg towards the crosspiece, whereas the longest leg towards the welded tub.

- Right spring

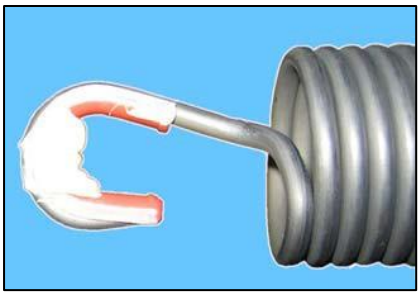
The instructions provided for the left spring also apply to the right spring.

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

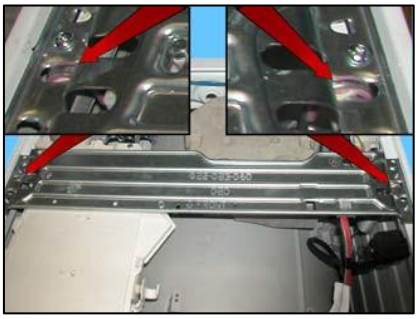
Pay attention to the differences between the bushings (see enlarged details).



Apply some grease on either end of the spring. Use grease.

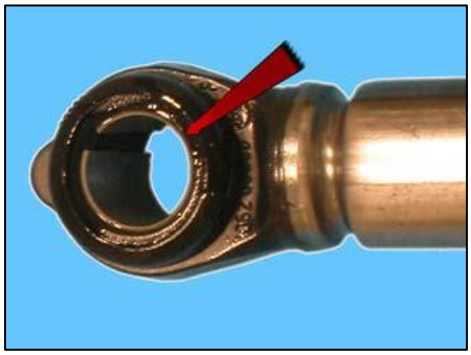


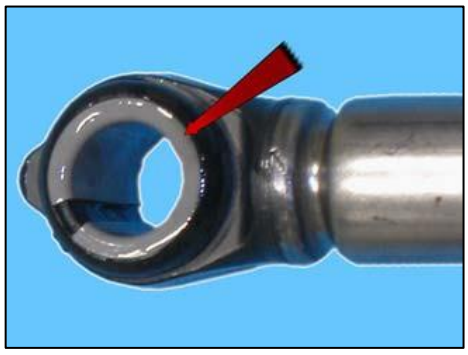
Attachment position of springs to top crosspiece.



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.

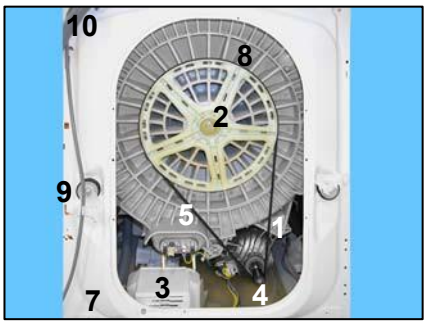
If you are having difficulty inserting the pin, grease it a little (code 5026 24 16-00/6).

When re-assembling the front panel make sure the small rod of the door safety device is correctly positioned (see “Door Safety Device” paragraph).

ACCESSING THE REAR PART

Back Panel

Loosen the screws that fix it to the cabinet.

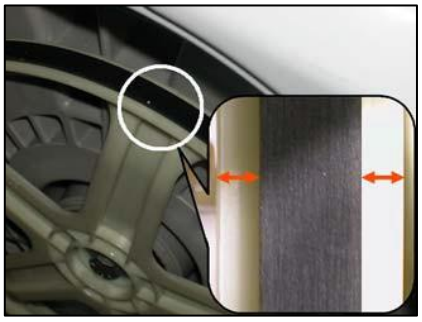


BELT

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

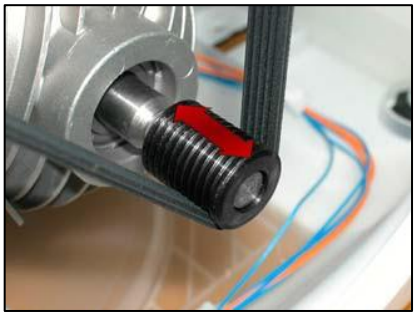
When reassembling:

Position the belt and align it with the centre of the pulley (Ø273mm) 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.



PLASTIC PULLEY

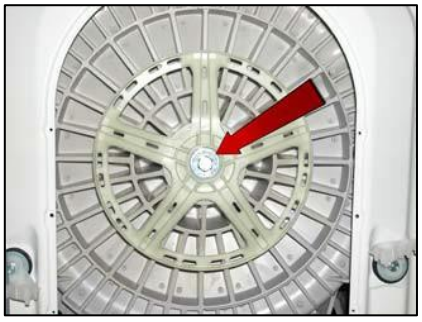
Remove the back panel (see relevant chapter).

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 60Nm.



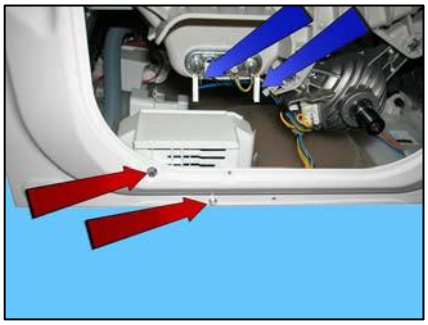
INVERTER

Remove the back panel (see relevant chapter).

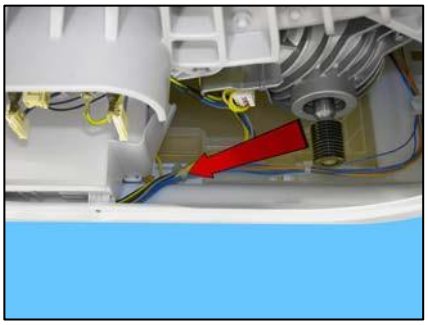
Remove the heating element connectors (blue arrows).

Remove the two screws securing it to the cabinet at the rear (red arrows).

(Beware that it is held in place by two hooks on the underside of the cabinet).

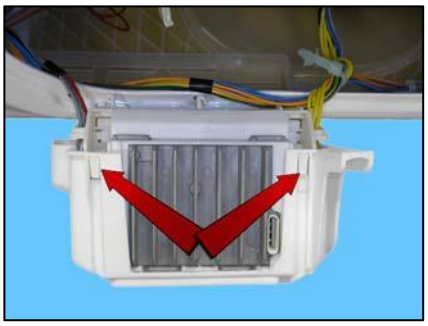


Slide off the clamp.



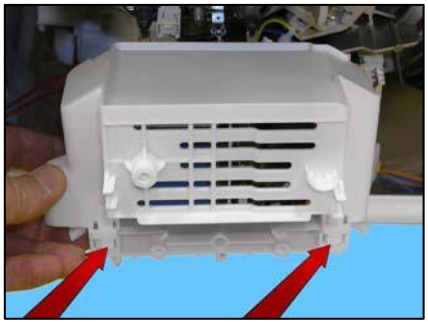
Push the washing unit towards the inside and pull out the inverter.

By releasing the hooks on one side.

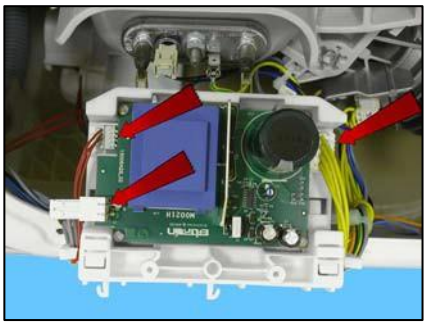


.

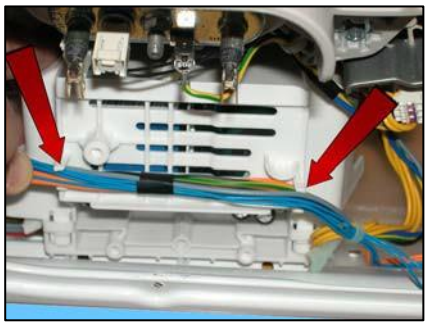
Then on the other



Pull out the wiring from the hooks securing it to the casing of the INVERTER. Remove the connectors.



When reassembling, repeat these steps in the reverse order.



Beware that before you secure the Inverter to the cabinet with screws, the wiring is positioned inside the rails indicated by the arrows to avoid any wiring getting crushed.

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.

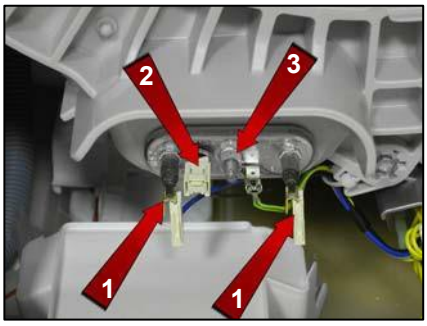
Tighten the screws at a torque of 5Nm.

HEATING ELEMENT

Remove the back panel (see relevant chapter).

Disconnect the connectors of the heating element (1) and NTC probe (2).

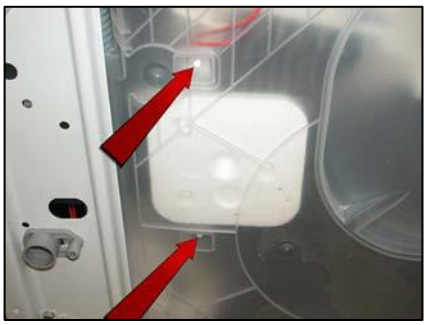
Loosen the nut (3) and pull it out.



Tighten the nut.

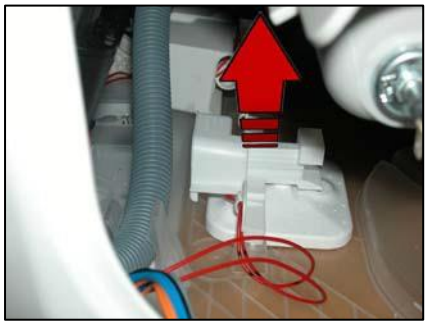
AQUA CONTROL (some models)

Remove the back panel (see relevant chapter).



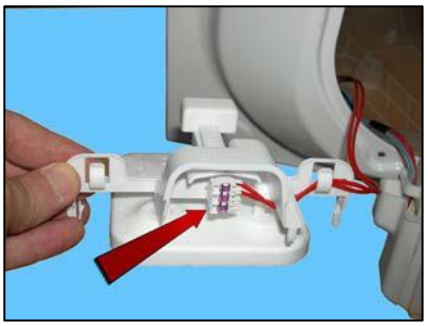
From the base of the cabinet, release the hooks that secure it to the base

Remove the inverter (see relevant chapter).



Lift the sensor.

Remove the connector.



REAR SHOCK ABSORBER

Remove the back panel (see relevant chapter).

To take the pins out of their seats, push the locking tooth and at the same time remove it with pliers.

Perform the same operations for the other pin. Take the shock absorber out.

DRAIN HOSE\CABLING SUPPORT

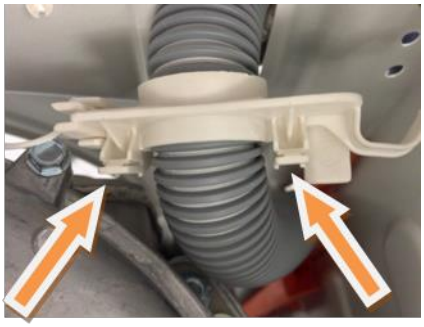
When fixing the drain pipe/cabling support make sure that the two stops (indicated by the red arrows) fit into their housings, locking the support to the unit.

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

MAIN DRAIN HOSE

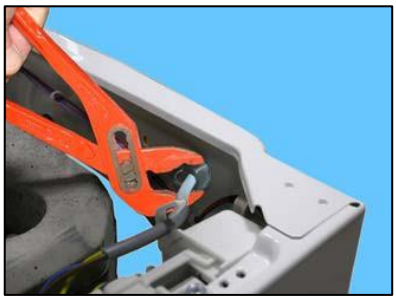
1. Push the pipe with the fastener towards the inside of the appliance.

2. Remove the pipe fastener by pressing the hooks (indicated by the arrows) and pull it out at the same time.



3. When refitting the pipe, make sure that the non-corrugated part is inserted in the seat of the pipe fastener.

POWER SUPPLY CABLING SHEATH



Remove the worktop (see relevant paragraph).

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

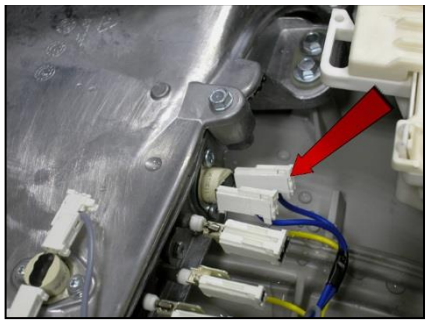
N.B. Every time the cabling sheath is removed, you will need to replace it with a new one.

DRYER COMPONETS

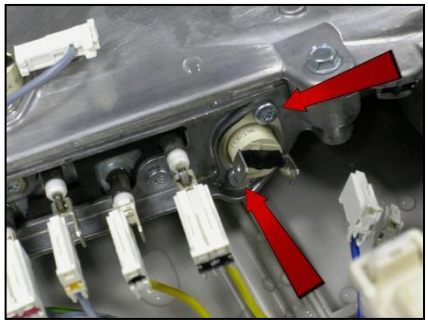
THERMOSTATS

Auto-reset thermostat

Remove the worktop (see relevant paragraph 15.1).

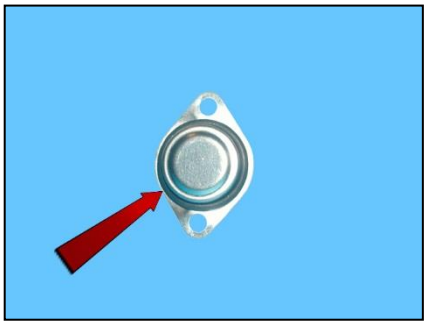


Remove the connectors



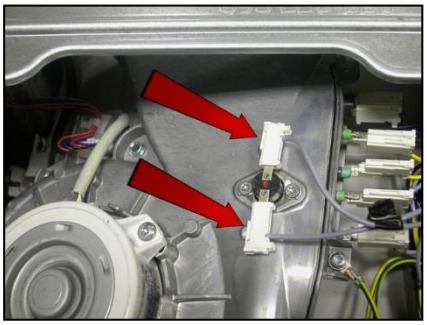
Loosen the screws that secure it to the conduit

Replace the seal too.

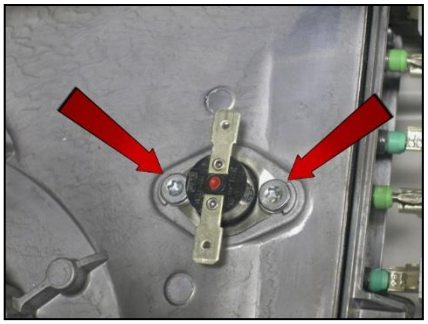


SAFETY THERMOSTAT

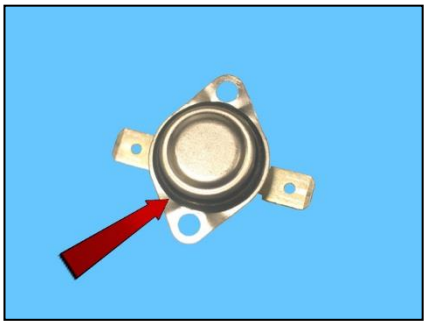
Remove the connectors



Loosen the two screws (Torx T20) that fix it to the conduit.

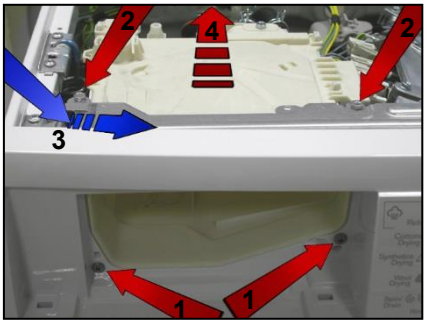


Replace the seal too.

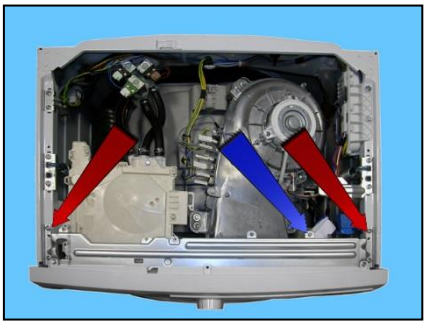


NTC PROBE (DRYING)

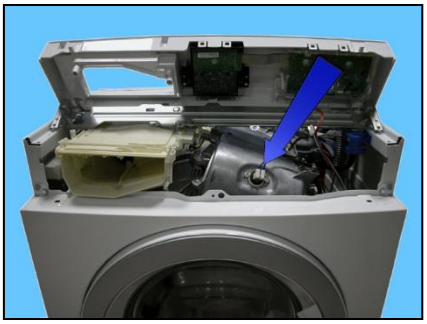
Remove the worktop (see relevant paragraph).
Remove the detergent dispenser



1) Loosen the two screws that secure the control panel to the detergent dispenser
2) Remove the two screws securing the detergent drawer to the crosspiece
3) Release the hook that secures the detergent dispenser to the crosspiece (blue arrow)
4) Pull the detergent dispenser out of the control panel

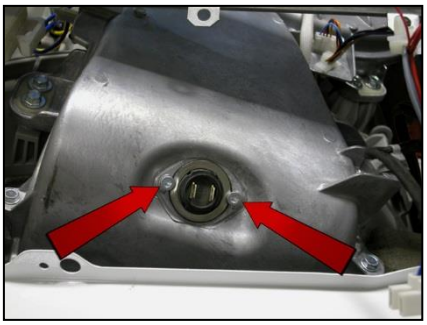


Pull out the clamp from the crosspiece (blue arrow)
Remove the screws which secure the crosspiece to the cabinet (red arrows)

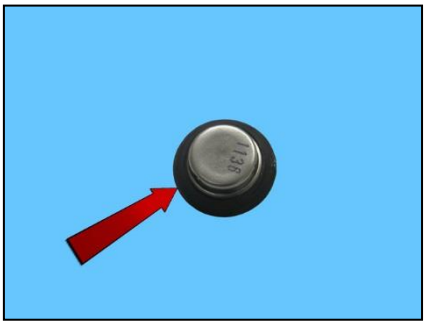


Lift the control panel and pull the detergent dispenser out completely.
Place the control panel as illustrated in the figure, placing a protection over the cabinet to avoid scratching it.

Remove the connectors (blue arrow)

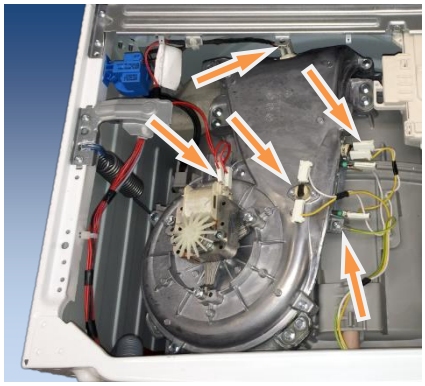


Loosen the screws (Torx T20) that secure it to the conduit (red arrows)

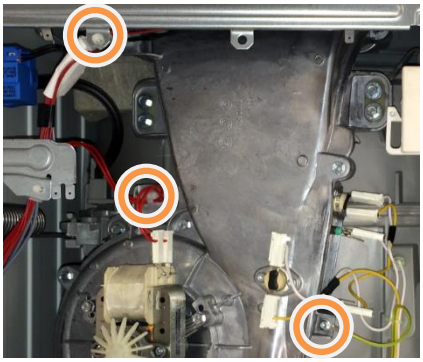


Replace the seal too.

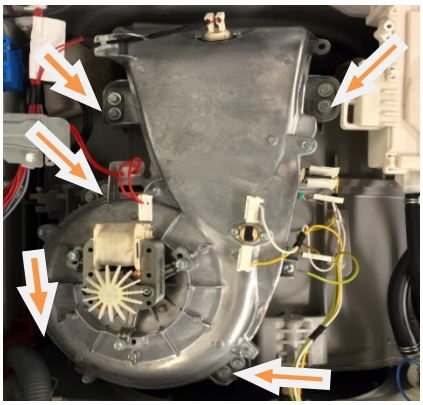
POWER FAN (DRYING FAN)



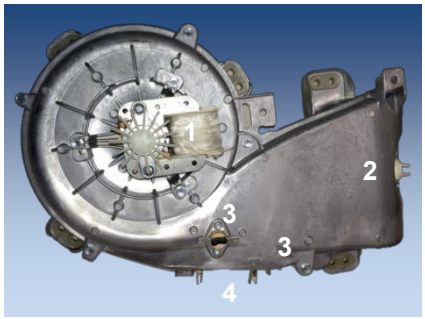
Disconnect the connectors from:
the NTC probe
the thermostats
the heating element
the power fan (red arrows)



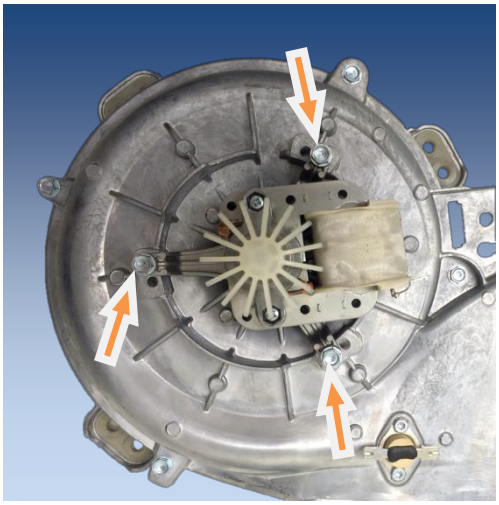
Remove the clamps that secure the power fan wiring and the NTC probe to the support.
Loosen the screw that earths the conduit.



Loosen the five pairs of screws shown by the arrows which secure the conduit to the welded tub.
Lift the conduit to remove it from the bellow seal at the front of the appliance and at the rear where the power fan is secured.



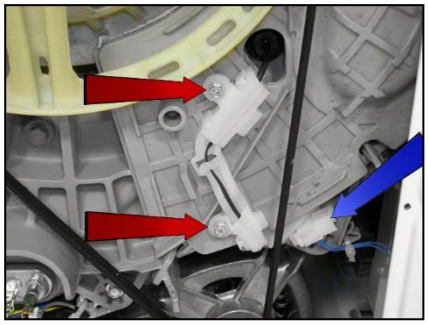
Conduit complete with:
1. Power fan
2. NTC probe
3. Thermostats
4. Heater unit



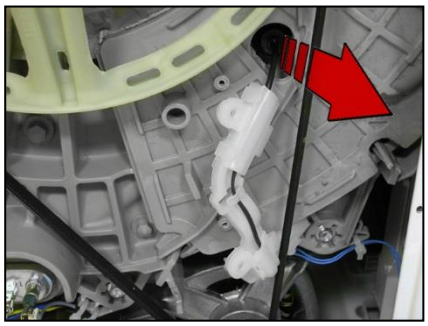
Loosen the three screws that secure the power fan to the screw.
Remove the power fan.

NTC SENSOR (humidity control)

Disconnect the connector
Loosen the two screws that secure the sensory wiring support to the tub



Remove the probe



When reassembling the probe

Insert the seal in its position and check that it is correctly in place

Insert the probe
Reposition the wire, tighten the two screws that secure it to the welded tub and insert the connector