East Asia Emerald & Diamond Plus

WM/WD
Service Manual

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1. Scope

The purpose of this manual is to provide service engineers who are already familiar with the repair procedures for traditional washing machines with information regarding washing machines fitted with the electronic control system.

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

The current electronic appliances manufactured use a heating element with thermal fuses (inside its branches) as safety, which interrupt if the water level drops below the minimum level permitted. The incorporated NTC probe contacts have a 2.5 mm pitch. The manual deals with the following topics:

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

1.1 Low consumption mode

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

“Stand-Off” mode

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

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

“Auto-off ” mode

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

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

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

Mode with “Zero watt” circuit

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

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

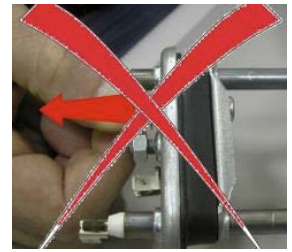
b. If, after 5 minutes, during the programme selecting phase or after the end of the cycle, the appliance receives no further instructions, it is automatically turned off and the Zero Watt circuit which cuts off the supply voltage is triggered (for energy savings in conformity with the standards on energy consumption).

All the settings are stored so that when the appliance is turned back on, the programme is ready or if the auto-off mode was triggered after the end of the cycle, the user can see that the cycle ended normally, and can restart it if necessary.

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

2. WARNING

- Any work on electrical appliances must only be carried out by qualified personnel.
- Before carrying out work on the appliance, use suitable instruments to check that the power supply system in the house is fully efficient.
- On completing operations, check that the appliance has been restored to the same state of safety as when it came off the assembly line.
- If the circuit board has to be handled/replaced, use the ESD kit (Cod. 405 50 63-95/4) to avoid static electricity from damaging the circuit board,
- This platform is not fitted with an ON/OFF switch. Before you access internal components, take the plug out of the socket to cut the power supply.
- Make resistance measurements, rather than direct voltage and current measurements.
- Warning the sensors located in the display board could be at a potential of 220 Volts.
- When replacing the heating element, replace it with one that has the same characteristics (2 thermal fuses) in order not to compromise the safety of the appliance. NEVER remove/ switch the NTC sensors between heating elements.



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

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

3. Model Denomination

Example : E W F 1 1 4 1 A E W A

Translate : A_1 A_2 A_3 X_1 X_2 X_3 X_4 A_4 A_5 A_6 A_7

A_1	A_2	A_3	X_1X_2	X_3	X_4	A_4	A_5	A_6	A_7
Brand	Category	Typology	Load Kg	Spin Speed	Interface	Spec Level	Design	Colour	Generation
A: AEG C: CHEF **E: Electrolux** P: Philco S: Simpson W:Westinghouse Z:Zanussi	D: Dryer **W: Washer**	C: Condenser **F: Front Load** H: Heat pump S: Vented Dryer Mist (Dryer), S: Twin Tub (W/M) T: Top Load U: Undercounter V: Vented Dryer (non-Mist) W: Washer&Dryer	50: 5.0 kg 55: 5.5 kg 60: 6.0 kg 65: 6.5 kg 70: 7.0 kg 75: 7.5 kg 80: 8.0 kg 85: 8.5 kg 90: 9.0 kg 95: 9.5 kg 10: 10.0 kg **11: 11.0 kg** 12: 12.0 kg 13: 13.0 kg 14: 14.0 kg 15: 15.0 kg 18: 18.0 kg	Empty for Dryer 6 : 1600 rpm **4 : 1400 rpm** 2 : 1200 rpm 1 : 1100 rpm 0 : 1000 rpm 5 : 850 rpm 7 : 700 rpm	0: Colour LCD **1: TC1** 2: TC2 3: TC3 4: TC4 5: TC5 6: TC6 (Knob Electric) 7: TC7 (Knob Timer)	Empty for Twin Tub **A: Inverter + Lens** B: Inverter + Chrome C: Inverter + Silver D: Inverter + White E: Universal + White F: Universal + Lens G: Universal + Silver H: Induction + White J: Induction + Silver/Grey K: Induction + Chrome S: AutoDose	1: Midea 2: Xinle A: Alexis C: Catamaran D: DiamondPlus **E: Emerald** G: Granite K: Kaizen M: Mini Q: Quartz S: Star Sapphire T: Topaz	B: Black D: Slate Grey Silver G: Grey M: Meteor Silver Q: Quartz Silver S: Medium Silver **W: White**	**A: 1st Gen** B: 2nd Gen C: 3rd Gen D: 4th Gen

4. Overall Panel Styling

	Washing & Dyer Machine	Washing Machine	Tumble Dryers
TC1 (TC2H) (Connectivity)			
TC2 (Connectivity)		 	
TC3		 	
TC4			
TC5 : Quartz			
TC5 : Granite			

3.1 General Characteristics and Control Panel

Diamond Plus Washing Machine

The main characteristics are:

- Absolute selector with 15 position (15 programmes);
- On/Off mechanical tact-switch button always on board;
- 8 function buttons:
  - o Temperature button with 6 associated LEDs;
  - o Spin button with 6 associated LEDs;
  - o 3 option buttons (Sensor wash , Vapour , Prewash) with 1 associated LED each;
  - o WM : Time Manager button;
  - o Delay Start button;
  - o Start/Pause button with 1 associated LED;
- Medium-size LED module with indication of Cycle time, Time Manager level and some other function indicators;
- The color of all LEDs (buttons and display) is white.

Diamond Plus Washing Dryer Machine

The main characteristics are:

- Absolute selector with 15 position (15 programmes);
- On/Off mechanical tact-switch button always on board;
- 9 function buttons:
  - o Mode button with 3 associated LEDs;
  - o Temperature button with 6 associated LEDs;
  - o 3 option buttons (Spin , Vapour , Prewash) with 1 associated LED each;
  - o Dryness Level button ;
  - o Time Dry button;
  - o Delay start button;
  - o Start/Pause button with 1 associated LED;
- Medium-size LED module with indication of Cycle time, and some other function indicators;
- The color of all LEDs (buttons and display) is white.

3.2 Programme selector knob

The selector knob is used to select the desired washing programme or to reset the cycle in progress; it can be moved both in clockwise and counter clockwise direction. It is of standard “absolute” type, i.e. the programme selection is done “pointing” the desired graphic with the knob index.
The total number of positions is 15 and it is not configurable.

The 12 o’clock position is reserved for the Reset function, which stops and resets any possible running programme. When the selector is in this position the time digits and, where available, temperature and spin speed digits are filled with dashes (“---”) and the Start/Pause LED remains off meaning that no program is selected and the appliance can’t be started.

Every other position recalls a program as specified in the Machine Configuration (MCF). The layout of the programmes around the main knob is configurable.

3.3 Push buttons

All buttons, On/Off excluded, are touch-sensitive type.

3.3.1 On/Off button

All the aesthetics levels of Elux Diamond range have a dedicated mechanical tact-switch button for On/Off function. The Off function does not disconnect the machine from the mains supply, but puts the appliance in a special low power consumption mode.

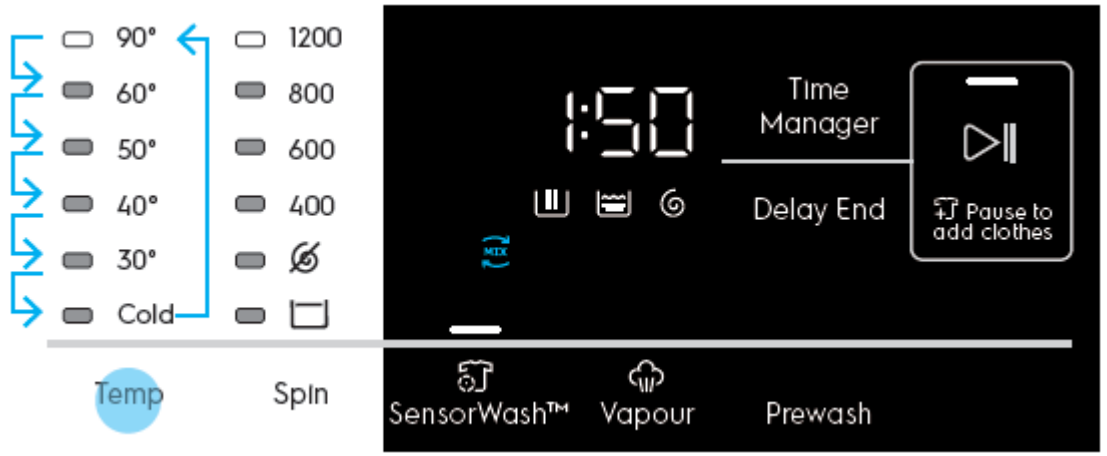
The 0-Watt power consumption circuit that completely disconnects machine from the mains supply is not supported in Elux Diamond range based on EWX13 and EWX14 main board electronic platforms. The user has to unplug machine to disconnect mains power.

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

3.3.2 Temperature button (WM)

The default temperature changes depending on selected programme. When the button is pressed, the temperature goes down. Once the lowest temperature is reached, the selection starts from the highest available.

The temperature can be set among the following values: 90°C, 60°C, 50°C, 40°C, 30°C, 20°C, Cold (shown as “--*”).

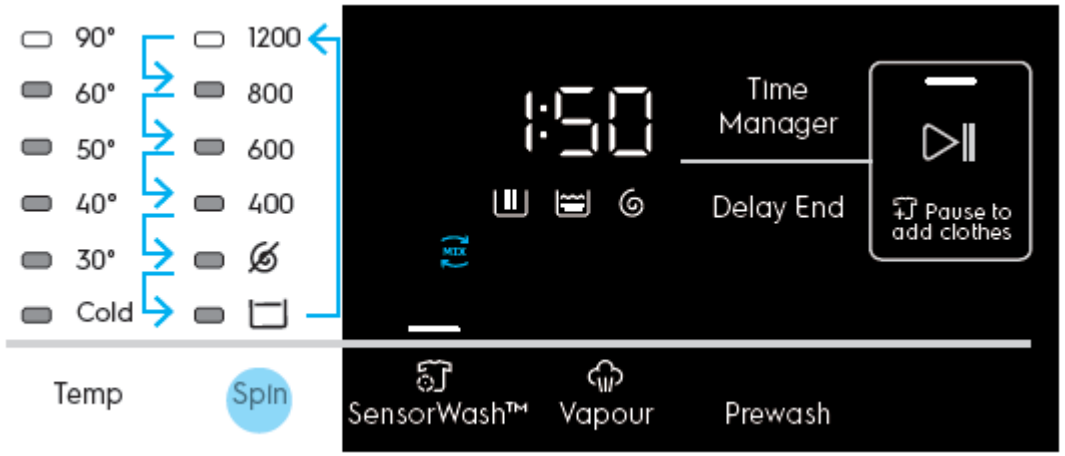


3.3.2.1 Mode button (WD)

The Mode button available on Washer Dyer machine only.
The Mode default is “Wash” (Except WashDyer 60 program)
When the button is pressed, the Mode will change.The selection starts from the default setting.
The mode can be set among the following default setting : Wash , Dry , Wash + Dry.

3.3.3 Spin button (WM)

The default spin speed changes depending to selected programme . When the button is pressed, the spin speed goes down. Once the lowest speed is reached, the next is Rinse Hold option, if compatible with selected programme, showed via the dedicated LED below the display. The next selectable option is Silent/Night mode, if compatible with selected programme, showed via the dedicated LED below the display. After that, the selection restarts from the highest speed available.
The speed values range is: 1400, 1200, 1000, 800, 600, 400, 0 (No spin), Rinse Hold, Silent.
No Spin, Rinse Hold and Silent (Night Cycle) (if selected via a push button) are shown with “---”.



3.3.3.1 Temperature button (WD)

The default temperature changes depending on selected programme. When the button is pressed, the temperature goes down. Once the lowest temperature is reached, the selection starts from the highest available.
The temperature can be set among the following values: 90°C, 60°C, 50°C, 40°C, 30°C, 20°C, Cold (shown as “--*”).

Example

3.3.4 SensorWash button (WM)

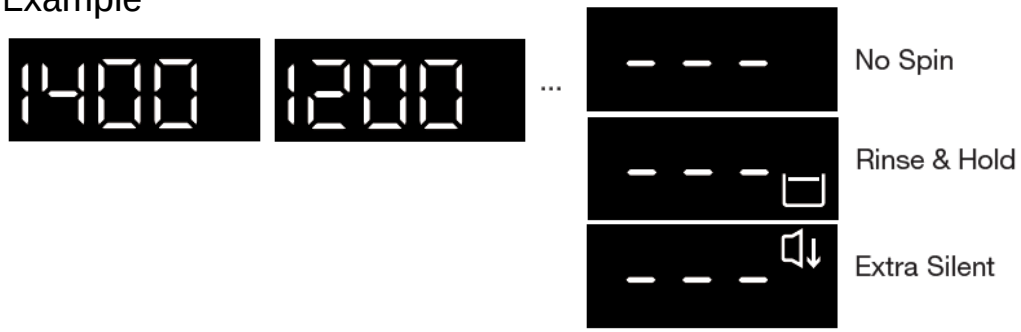
The default SensorWash™ (Turbidity and Conductivity (T&C) Sensors) temperature changes depending on selected programme.The button allows the user to toggle On and Off the Turbidity and Conductivity (T&C)sensor for a better wash and rinse performance.

3.3.4.1 Spin button (WD)

The default spin speed changes depending to selected programme. When the button is pressed, the spin speed goes down. Once the lowest speed is reached, the next is Rinse Hold option, if compatible with selected programme, showed via the dedicated Spin speed in display. The next selectable option is Silent/Night mode, if compatible with selected programme, showed via the display. After that, the selection restarts from the highest speed available.

The speed values range is: 1600, 1400, 1200, 1000, 800, 600, 400, 0 (No spin), Rinse Hold, Silent.
No Spin, Rinse Hold and Silent (Night Cycle) (if selected via a push button) are shown with “---”.

Example



3.3.5 Vapour button

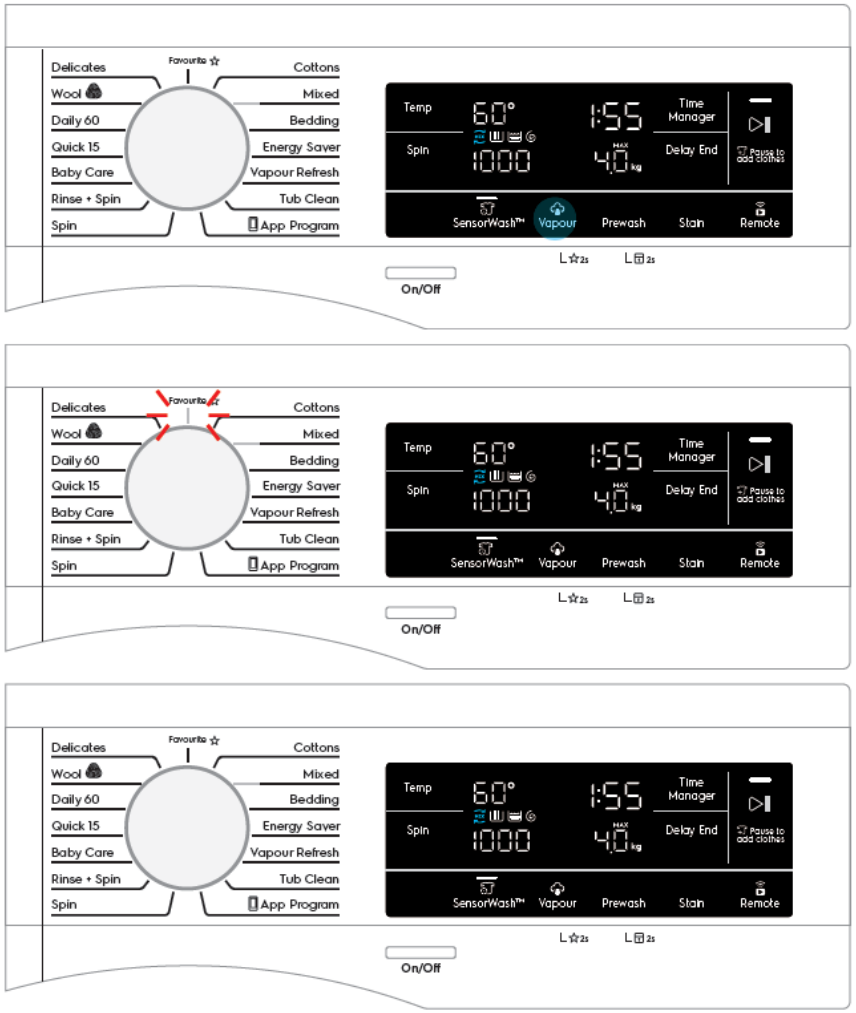
Adds a Vapour phase after the drain/spin phase. The user can press the Vapour option key to toggle this feature on, provided that the selected program allows it. Vapour will increase the time of the selected cycle, and the TTE digits will update to reflect this. Pressing the Vapour option key again will toggle the function off.

3.3.6 Save Favourited button

Keeping the finger pressed on the Vapour button’s touch area for at least 3 seconds, it enables the secondary function related to the same button: in this case the “Save Favourite” function.

“FAV” will show in place of the wash time for 2s and changes back to show wash duration

Favourite allows user to recall only 1 favourite program. Delay End setting will not be recorded.



User taps & hold Vapour button for 2s

Favourite LED 0% to 100%, stays light up for 0.2s

Favourite LED 100% to 0%, dismisses for 0.2s

Loop and blink LED 3x

Favourite LED is dismissed while LED of selected program and settings remain lit

3.3.6.1 Recall Favourite

To recall the most recent saved program, user can rotate the rotary knob to select Favourite.

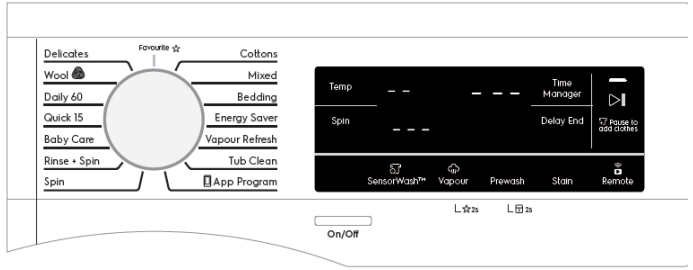
3.3.6.2 Changing options

When Favourite program is selected, other option settings can be adjusted as long as they are
available to the saved program*.
*Note 1: These new adjustments will not change the saved settings in the Favourite program.
*Note 2: If user press and hold save Favourite again at this point, the new settings will overwrite the
current saved settings.

3.3.6.3 If No Favourite Program Saved

In the event that no Favourite program was saved, when Favourite is selected, the segmented
display will show dashes in place of Temp, Spin, Time information, with all other LEDs off

All touch buttons will become inactive until another program is selected.



3.3.7 Prewash button

Pressing the button the related option is activated/de-activated. When the option is active the associated LED switches on. The options can be set only if they are available for selected program.

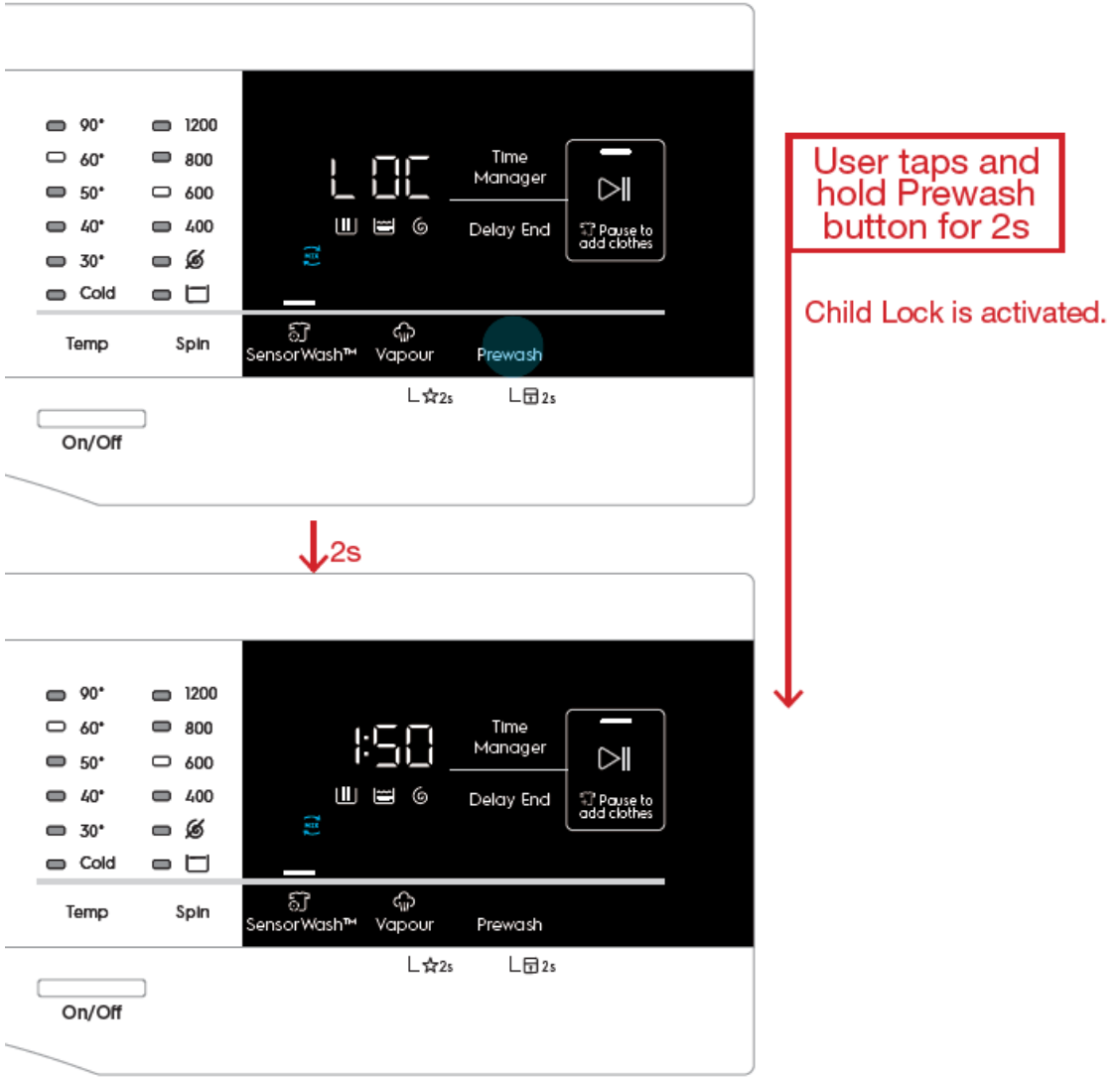
3.3.8 Child Lock button

3.3.8.1 Active Child Lock button

Keeping the finger pressed on the button's touch area for at least 3 seconds, it enables the secondary function related to the same button: in this case the Child Lock. A double beep is played as feedback.

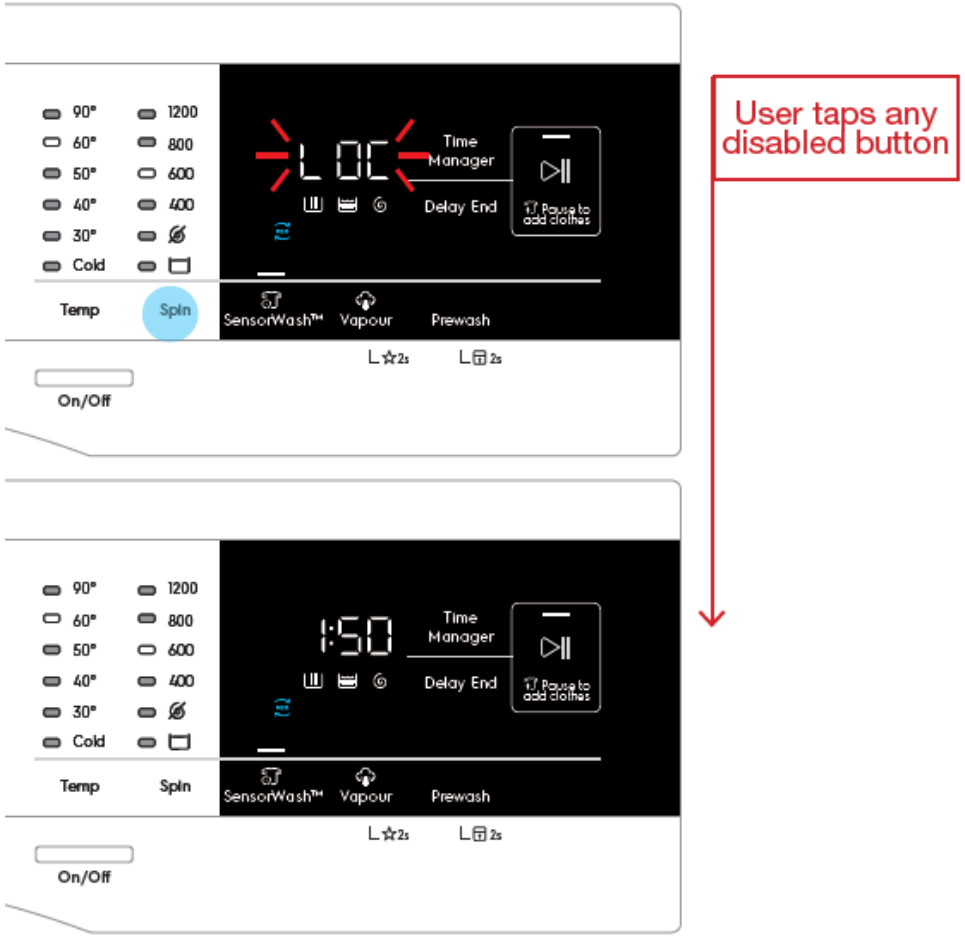
"LOC" will be shown on the segmented display for 2s and goes back to showing wash time.

When Child Lock is activated,User presses any of the deactivated buttons, then remains static.



3.3.8.2 When Child Lock is on

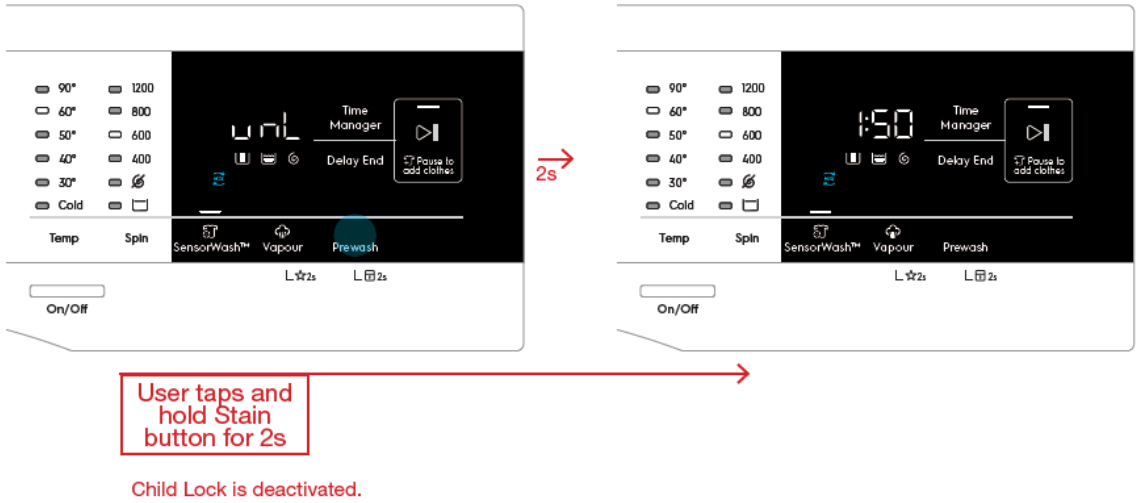
When Child Lock is activated, play tone KeyInvalid tone and flash “LOC” 3 times at a rate of 0.15s
when user presses any of the deactivated buttons, then remains static.



3.3.8.2 Deactivate Child Lock button

In the same way, in order to disable the Child Lock mode the Vapour button must be kept pressed for at least 3 second.

When Child Lock is deactivated, “unL” will be shown on the segmented display for 2 sec and goes back to showing wash time.



Child Lock is deactivated.

3.3.9 Time manager button (WM)

Time Manager allows the user to adjust the duration of the wash if he/she wishes to do so depending on the soil level of the laundry.

Pressing the Time Manager button will then adjust the wash duration upwards (to a longer time) up to Level 5, and loops back to Level 1.

Example

Level 1 (Light) | Level 2 | Level 3 (Medium) | Level 4 | Level 5 (Heavy)

Note:

Time Manager function is not available when SensorWash™ (Turbidity and Conductivity Sensors) is On. By default, Time Manager is Off. Pressing on the Time Manager button will toggle Off SensorWash™. Like-wise, toggling Off SensorWash™ will turn On Time Manager.

3.3.9.1 Dryness level button (WD)

Dryness level allows the user to choose from three different levels of automatic drying.

Extra Dry | Cupboard Dry | Iron Dry

3.3.10 Delay end button (WM)

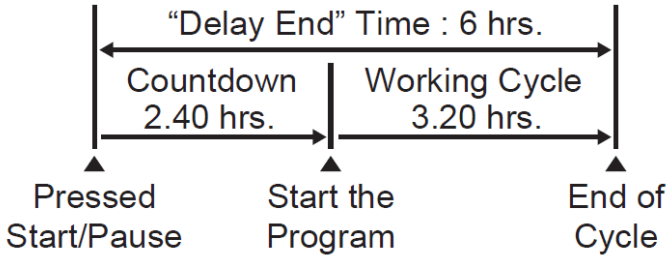
Tapping the Delay End button allows user to delay the end time of the wash cycle.

The display will show the delay time set (in :mm or Xh format) and the Delay End icon will light up together. Long tap and hold gesture activates the auto repeat function.

The delay hours should be in increments of 1 hour, with the first option rounded up to the nearest number from the total wash time of the selected program. (e.g. if the wash time is 2:08, pressing Delay End button once would delay the end time to 3h). Maximum delay time is 20h.

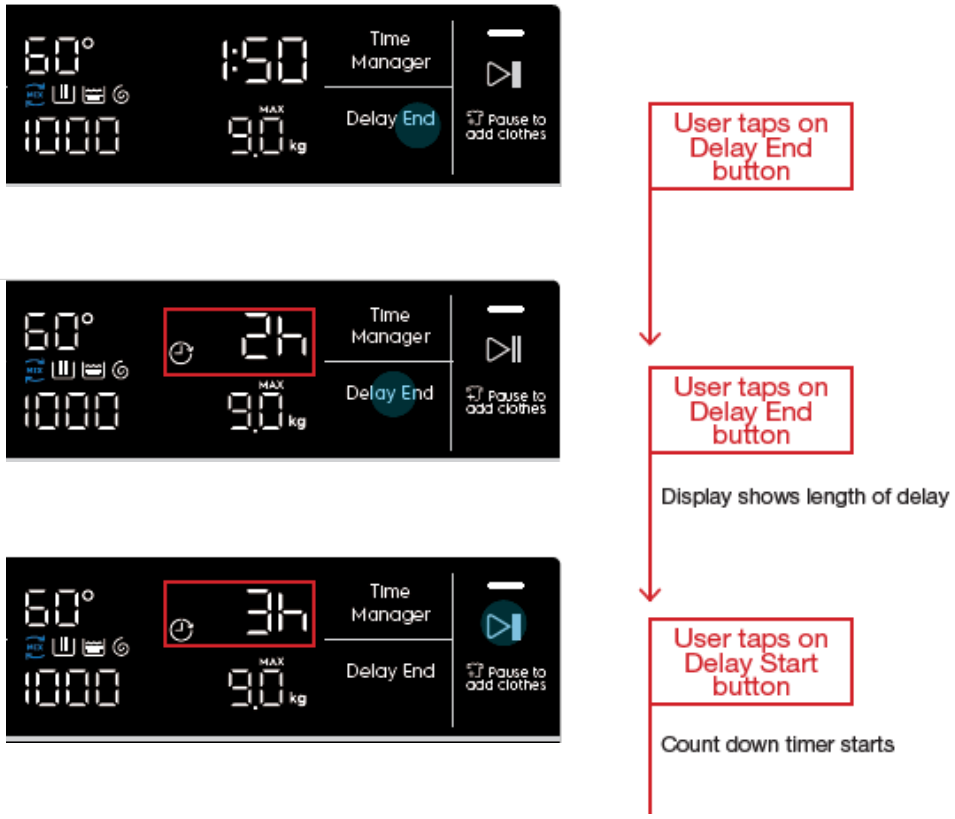
Example

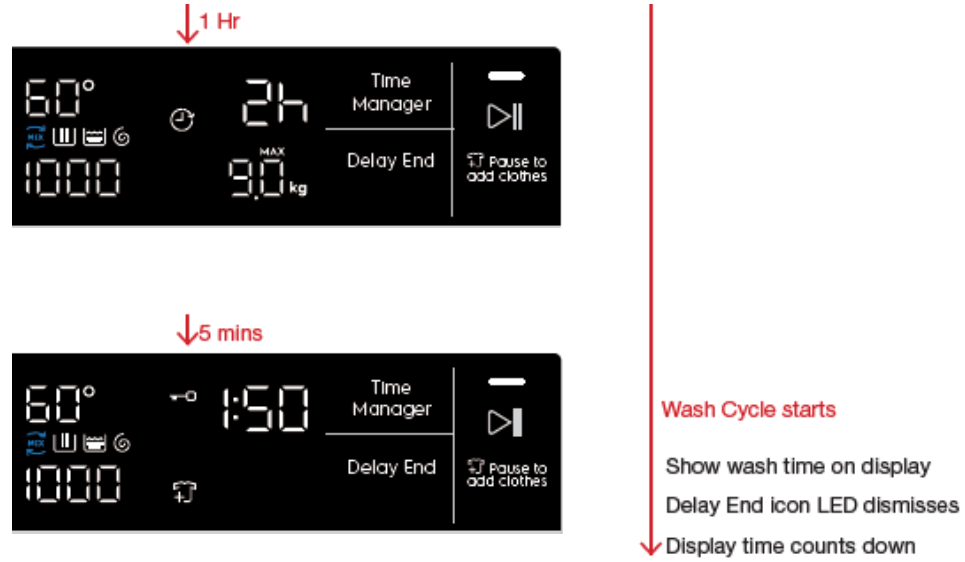
if the program duration of your selected program is 3.20 hours and you define the “Delay End” time to 6 hours. This means your wash program will finish in 6 hours.



5. TC4 LEVEL

Once the user presses Start/Pause, the timer will start counting down (Delayed State). The display will show the hours until the duration of the selected program is left, at which the display will show the wash time (e.g. 4h > 3h > 2h > 1.50) and the timer will countdown as per normal.





While in Idle State, if the user adjusts any other settings after setting Delay End, current delay timing will remain unchanged on the display. If the cycle time is changed and current delay time is no longer valid, display will update to the next valid delay time (e.g. If cycle time is 1:25 and delay set at 2h, display should automatically jump to 3h when cycle time becomes 2:05 after changing an option).

Note

Changing of program will cancel any Delay timing set and the Delay icon will be dismissed.

e.g. Cycle time is 1:10

User taps on Temp button

Display shows current delay timing

Delay Start icon still lit.

e.g. Cycle time becomes 1:50

User taps on Temp button

Display shows current delay timing

Delay Start icon still lit.

e.g. Cycle time becomes 2:10

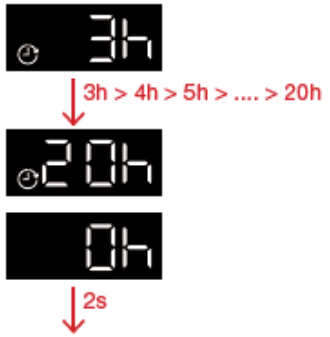
Display updates to next valid delay timing.

Delay Start icon still lit.

Cancelling Delay End

1. During setup (Idle State): To cancel Delay, press Delay End button until it cycles through the options to select 0h.

User taps on Delay End



User taps on Delay End

When display shows "0h",

Delay End icon LED is dismissed.

Delay End is cancelled.

Display shows cycle time after 2s

2. After pressing Start (Delayed State): If the user has pressed Start/Pause button while Delay End is activated, the appliance goes into a Delayed Pause State. Pressing the Delay End button again will jump to 0h and the Delay End previously set will be cancelled.

However, if the user press Delay End button again, Delay End will be activated again starting from the first available option (e.g 2h if the cycle time is 1:05).

3.3.10.1 Time Dry button (WD)

Press this button to select from 10 to 250 minutes of drying.

3.3.11 Delay Start button (WD)

Tapping the Delay Start button allows user to delay the start time of the dry cycle.

The display will show the delay time set (in .mm or Xh format) and the Delay Start icon will light up together. Long tap and hold gesture activates the auto repeat function.

This option makes it possible to delay the start of the program by 30 min, 60 min or 90 min and then by every hour from 2 to 20 hours. The delay you have selected is indicated on the display. The end time will increase in order to show you the selected delay.

Note :

Must select this option after you have set the program and before you press the Start/Pause button.

The cancel the delay time at any moment, by pressing “Delay Start” touchpad repeatedly till the display shows delay time “O”, then press the Start/Pause touchpad.

3.3.12 Start/Pause button

The Start/Pause button is used to start the cycle after being conveniently set up, immediately or after the programmed delay. When the cycle/delay is already in execution, another press pauses the appliance to let the user change options and/or open the door porthole to adjust the laundry load, provided that necessary conditions of temperature and water level are met. It must be pressed again to continue the cycle/delay.

The associated LED gives an immediate feeling of the general state of the appliance:

- **it pulses with a “breathing effect”** during the programme setup with the door closed, signalling that the *Start/Pause* button is enabled to start the cycle;
- **it is steadily lit** as long as the appliance is executing a cycle or a delay phase; the door is locked;
- **it blinks** during cycle or delay pauses and when cycle ends with water into the tub (during rinse hold phase);
- **it is off** when the cycle has ended and the door has been unlocked;

● **it is off** also to indicate that the *Start/Pause* button has been disabled because the door is open (during the program setup or a delay pause) or because the knob has been turned to another position during a pause. The user must close the door and/or turn the knob back to the original position, respectively, before the appliance can be started.

3.4 Display

3.4.1 WM display

The display is a white-on-black LED module including:
● Three 7-segments digits plus digital points where information about cycle duration, delay time duration and errors/warning information are shown
● 5 bars for Time Manager level and indication of SensorWash estimation phase
● Door lock status symbol
● Delay start symbol
● Stain option symbol (currently not requested)
● Extra Rinse option symbol
(currently not used since Extra Rinse button has its own LED)
● Vapour phase symbol
● Add clothes symbol
● Wash phase symbol
● Rinse phase symbol
● Spin phase symbol

3.4.2 WD display

The display is a white-on-black LED module including:
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● Stain option symbol (currently not requested)
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● Add clothes symbol
● Rinse hold symbol
● Dryness Level symbol
● Time Dry symbol

6.1 General Characteristics and Control Panel

Diamond Plus Washing Machine

Emerald Washing Machine

Emerald Washing & Dryer Machine

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- Absolute selector with 15 position(15 programmes);
- On/Off mechanical tact-switch button always on board;
- WM 9 function buttons:
  WD 10 function buttons:
  - o Temperature button;
  - o Spin button;
  - o WM : 4 option buttons
    (SensorWash, Vapour , Prewash, Stain)
    1 associated LED each;
  - o WD : 5 option buttons
    (Mode , Vapour, Prewash, Extra Rinse , Delay start)
    1 associated LED each;
  - o WM : Delay End button;
    WD : Time Dry button;
  - o WM : Time Manager button;
    WD : Dryness Level button;
  - o Start/Pause button with 1 associated LED;
- Large-size LED module with indication of Temperature, Spin Speed, Recommended weight, Cycle time, Time Manager level and some other function indicators;
- The color of all LEDs (buttons and display) is white.

6.2 Programme selector knob

The selector knob is used to select the desired washing programme or to reset the cycle in progress; it can be moved both in clockwise and counter clockwise direction. It is of standard “absolute” type, i.e. the programme selection is done “pointing” the desired graphic with the knob index.
The total number of positions is 15 and it is not configurable.

The 12 o’clock position is reserved for the Reset function, which stops and resets any possible running programme. When the selector is in this position the time digits and, where available, temperature and spin speed digits are filled with dashes (“---”) and the Start/Pause LED remains off meaning that no program is selected and the appliance can’t be started.

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All buttons, On/Off excluded, are touch-sensitive type.

6.3.1 On/Off button

All the aesthetics levels of Elux Emerald & Diamond range have a dedicated mechanical tact-switch button for On/Off function. The Off function does not disconnect the machine from the mains supply, but puts 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 Elux Emerald & Diamond range based on EWX13 and EWX14 main board electronic platforms. The user has to unplug machine to disconnect mains power.

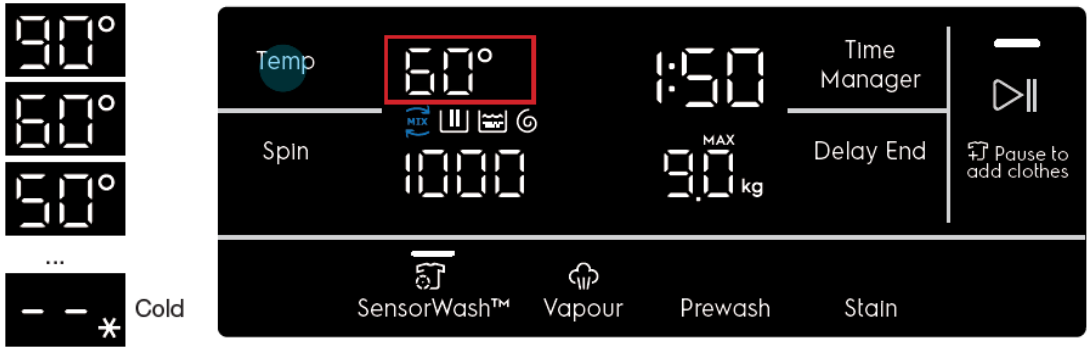
To switch on the appliance press shortly the On/Off button. The user interface plays the dedicated jingle and switches the lights and display on according to default programme.

6.3.2 Temperature button

User can tap on Temp button to adjust water temperature for the selected program.

The number of available settings depends on the configuration of selected program on different TC levels. If a certain setting is not available for the currently selected program, it will be skipped when cycling through the list of available settings.

- Temperature is displayed on the segmented digits on the LED display.
- Temperature is always adjusted downwards, to a lower temperature, and loops back to the highest temperature available if the lowest temperature is reached.

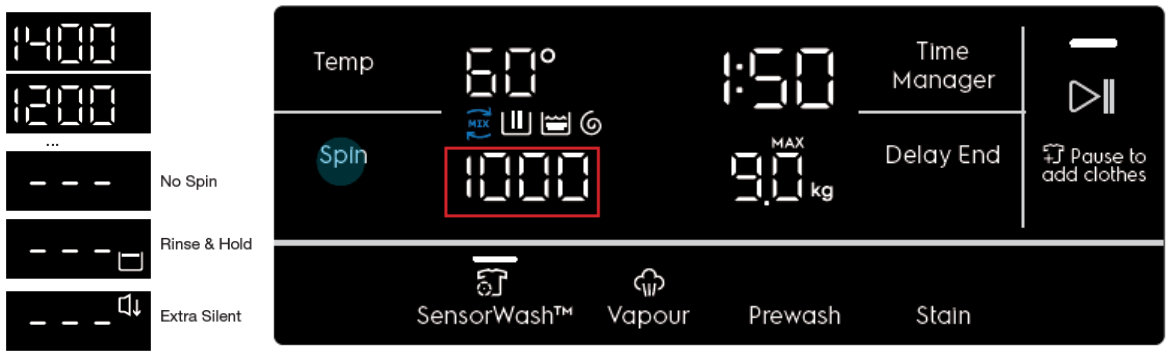


6.3.3 Spin button

The default spin speed changes depending to selected programme . When the button is pressed, the spin speed goes down. Once the lowest speed is reached, the next is Rinse Hold option, if compatible with selected programme, showed via the dedicated LED display below the display. The next selectable option is Silent/Night mode, if compatible with selected programme, showed via the dedicated LED display below the display. After that, the selection restarts from the highest speed available.

The speed values range is: 1400, 1200, 1000, 800, 600, 400, 0 (No spin), Rinse Hold, Silent.

No Spin, Rinse Hold and Silent (Night Cycle) (if selected via a push button) are shown with “---”.



6.3.4 Mode button (WD)

The Mode button available on Washer Dyer machine only.

The Mode default is “Wash” (Except WashDyer 60 program)

When the button is pressed, the Mode will change.The selection starts from the default setting.

The mode can be set among the following default setting : Wash , Dry , Wash + Dry.

6.3.5 SensorWash button (WM)

The default SensorWash™ (Turbidity and Conductivity (T&C) Sensors) temperature changes depending on selected programme. The button allows the user to toggle On and Off the Turbidity and Conductivity (T&C)sensor for a better wash and rinse performance.

6.3.6 Vapour button (WM)

Adds a Vapour phase after the drain/spin phase. The user can press the Vapour option key to toggle this feature on, provided that the selected program allows it. Vapour will increase the time of the selected cycle, and the TTE digits will update to reflect this. Pressing the Vapour option key again will toggle the function off.

6.3.6.1 Prewash button (WD)

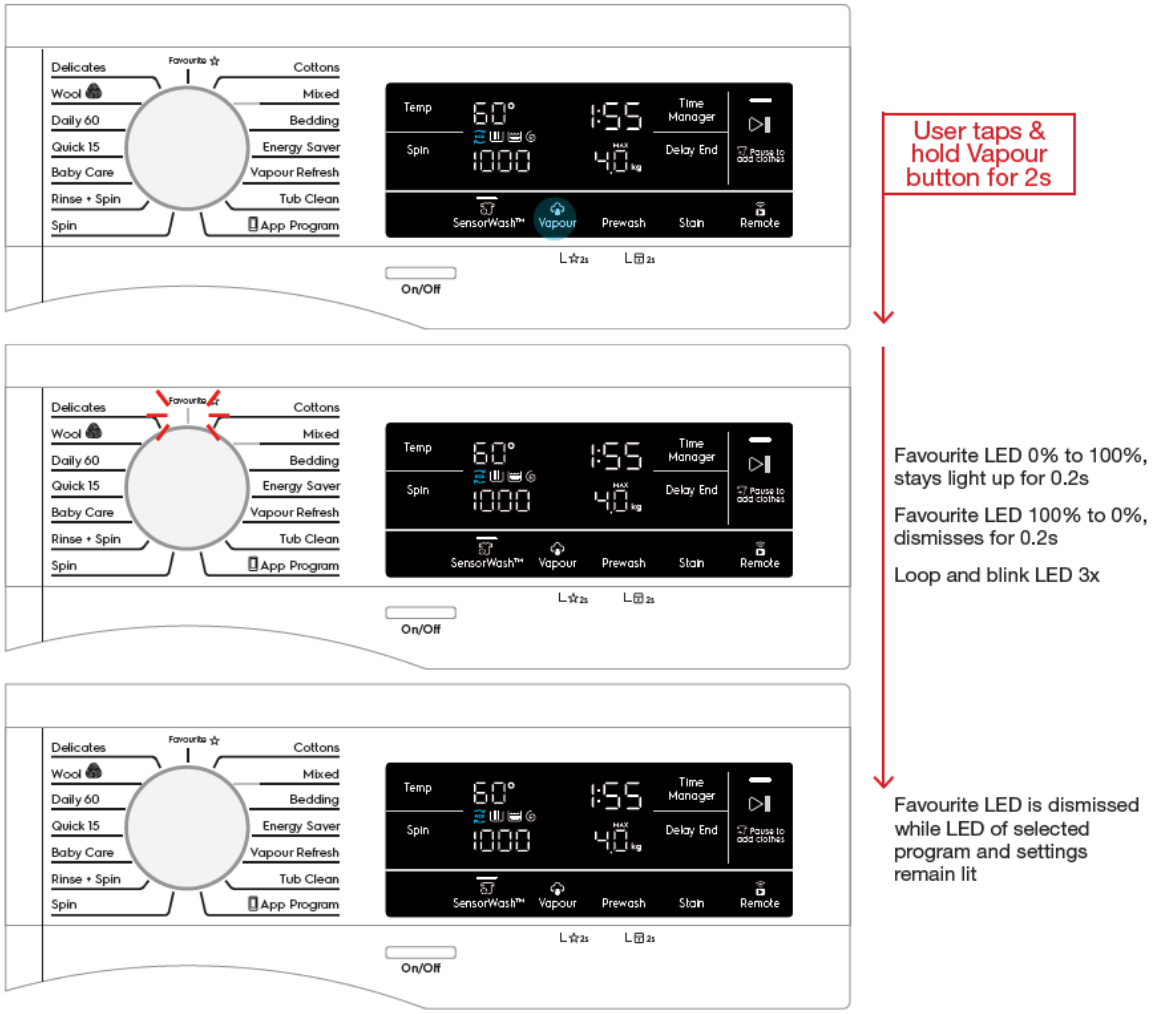
Pressing the button the related option is activated/de-activated. When the option is active the associated LED switches on. The options can be set only if they are available for selected program.

6.3.6.2 Save Favourited button

Keeping the finger pressed on the Vapour/Prewash button's touch area for at least 3 seconds, it enables the secondary function related to the same button: in this case the "Save Favourite" function.

"FAV" will show in place of the wash time for 2s and changes back to show wash duration

Favourite allows user to recall only 1 favourite program. Delay End setting will not be recorded.



6.3.6.3 Recall Favourite

To recall the most recent saved program, user can rotate the rotary knob to select Favourite.

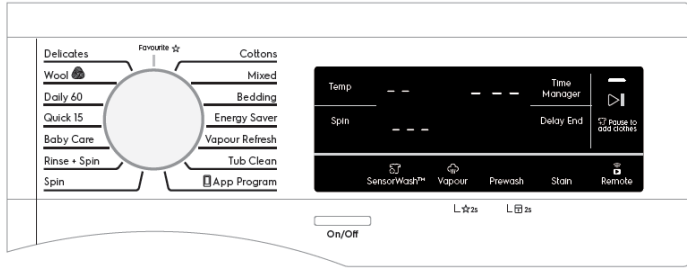
6.3.6.4 Changing options

When Favourite program is selected, other option settings can be adjusted as long as they are
available to the saved program*.
*Note 1: These new adjustments will not change the saved settings in the Favourite program.
*Note 2: If user press and hold save Favourite again at this point, the new settings will overwrite the
current saved settings.

6.3.6.5 If No Favourite Program Saved

In the event that no Favourite program was saved, when Favourite is selected, the segmented
display will show dashes in place of Temp, Spin, Time information, with all other LEDs off

All touch buttons will become inactive until another program is selected



6.3.7 Prewash button (WM)

Refer to paragraph 6.3.6.1

6.3.7.1 Extra Rinse

To adds an extra rinse phase after the regular rinsing phase. The user can press the Extra Rinse option key to toggle this feature on, provided that the selected program allows it. Extra Rinse will increase the time of the selected cycle, and the TTE digits will update to reflect this. Pressing the Extra Rinse option key again will toggle the function off, and return the TTE digits to their original time.

The Extra Rinse option is a “sticky” toggle, i.e. the setting will be remembered when changing the program (if the selected program supports it), and even when the appliance is Reset or turned off.

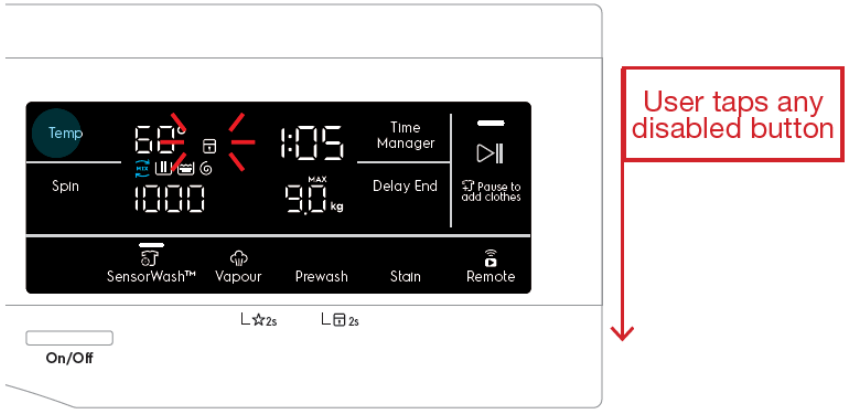
6.3.8 Child Lock button

6.3.8.1 Active Child Lock button (WM)

Keeping the finger pressed on the button’s touch area for at least 3 seconds, it enables the secondary function related to the same button: in this case the Child Lock. A double beep is played as feedback.

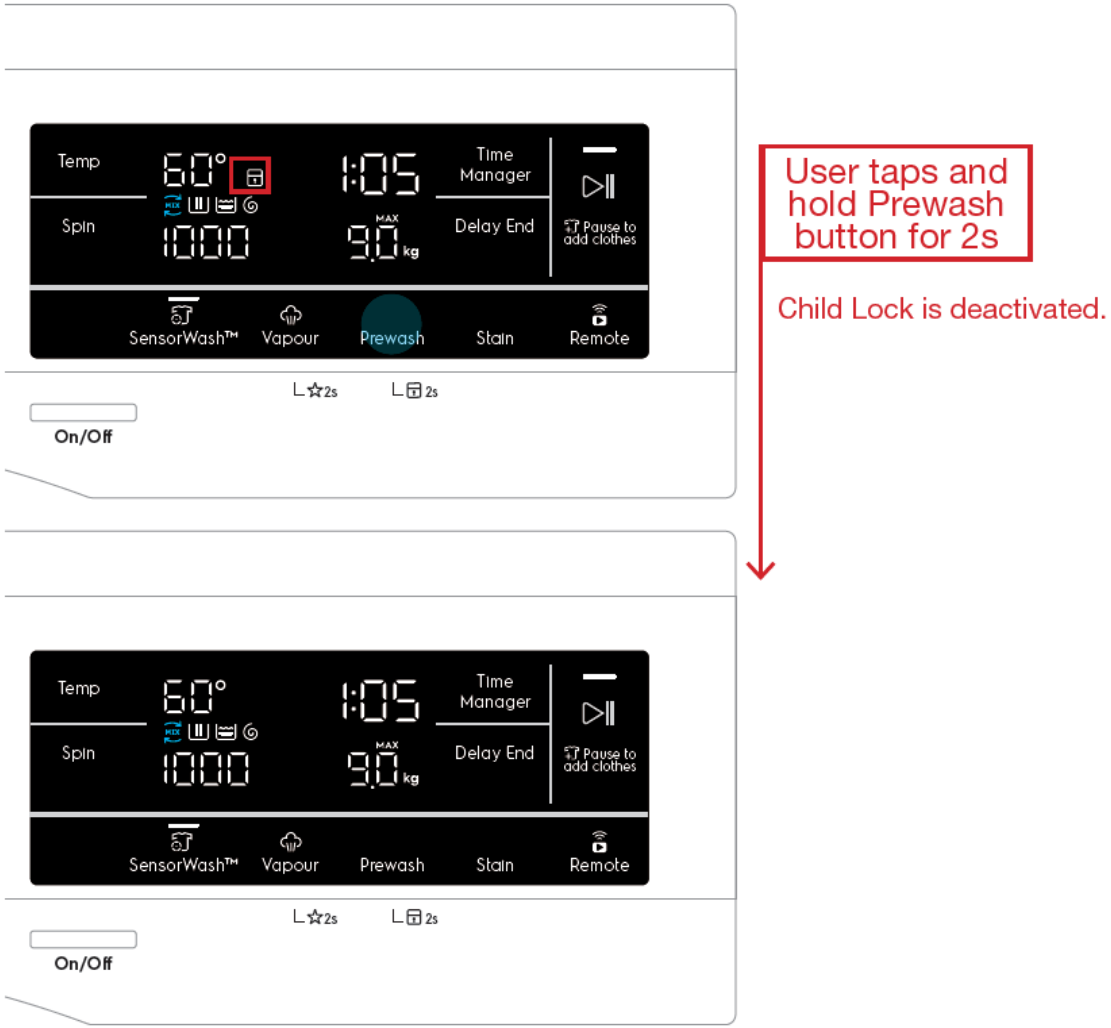
6.3.8.1.1 When Child Lock is on

When Child Lock is activated, play tone KeyInvalid tone and flash the lock icon 3 times when user presses any of the deactivated buttons, then remains static.



6.3.8.1.2 Deactivate Child Lock

In the same way, in order to disable the Child Lock mode the Prewash(WM)/Extra Rinse(WD) button must be kept pressed for at least 3 second.



6.3.8.2 Active Child Lock button (WD)

Keeping the finger pressed on the button's touch area for at least 3 seconds, it enables the secondary function related to the same button: in this case the Child Lock. A double beep is played as feedback.

"LOC" will be shown on the segmented display for 2s and goes back
to showing wash time.

When Child Lock is activated,User presses any of the deactivated buttons, then remains static.

6.3.8.2.1 When Child Lock is on (WD)

When Child Lock is activated, play tone KeyInvalid tone and flash "LOC" 3 times at a rate of 0.15s. when user presses any of the deactivated buttons, then remains static.

6.3.8.2.2 Active Child Lock button (WD)

In the same way, in order to disable the Child Lock mode the Vapour button must be kept pressed for at least 3 second.

When Child Lock is deactivated, "unL" will be shown on the segmented display for 2 sec and goes back to showing wash time.

6.3.9 Stain (WM)

Adds stain treatment to the washing phase. The user can press the Stain option key to toggle this feature on, provided that the selected program allows it. Stain will increase the time of the selected cycle, and the TTE digits will update to reflect this. Pressing the Stain option key again will toggle the function off, and return the TTE digits to their original time.

6.3.9.1 Delay Start (WD)

Tapping the Delay Start button allows user to delay the start time of the dry cycle.

The display will show the delay time set (in .mm or Xh format) and the Delay Start icon will light up together. Long tap and hold gesture activates the auto repeat function.

This option makes it possible to delay the start of the program by 30 min, 60 min or 90 min and then by every hour from 2 to 20 hours. The delay you have selected is indicated on the display. The end time will increase in order to show you the selected delay.

Note :

Must select this option after you have set the program and before you press the Start/Pause button.

The cancel the delay time at any moment, by pressing “Delay Start” touchpad repeatedly till the display shows delay time “O”, then press the Start/Pause touchpad.

6.3.10 Time manager button (WM)

Time Manager allows the user to adjust the duration of the wash if he/she wishes to do so depending on the soil level of the laundry.

Pressing the Time Manager button will then adjust the wash duration upwards (to a longer time) up to Level 5, and loops back to Level 1.

Example

(Light) (Medium) (Heavy)

Note:

Time Manager function is not available when SensorWash™ (Turbidity and Conductivity Sensors) is On. By default, Time Manager is Off. Pressing on the Time Manager button will toggle Off SensorWash™. Like-wise, toggling Off SensorWash™ will turn On Time Manager.

6.3.10.1 Dryness level button (WD)

Dryness level allows the user to choose from three different levels of automatic drying.

Extra Dry Cupboard Dry Iron Dry

6.3.11 Delay end button (WM)

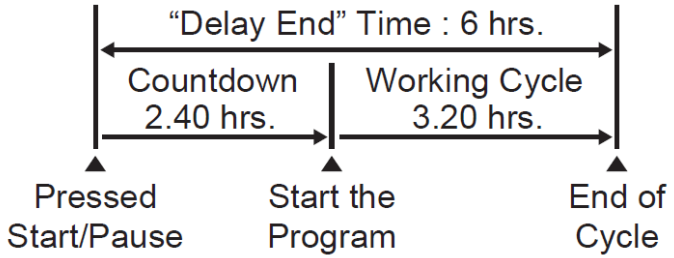
Tapping the Delay End button allows user to delay the end time of the wash cycle.

The display will show the delay time set (in :mm or Xh format) and the Delay End icon will light up together. Long tap and hold gesture activates the auto repeat function.

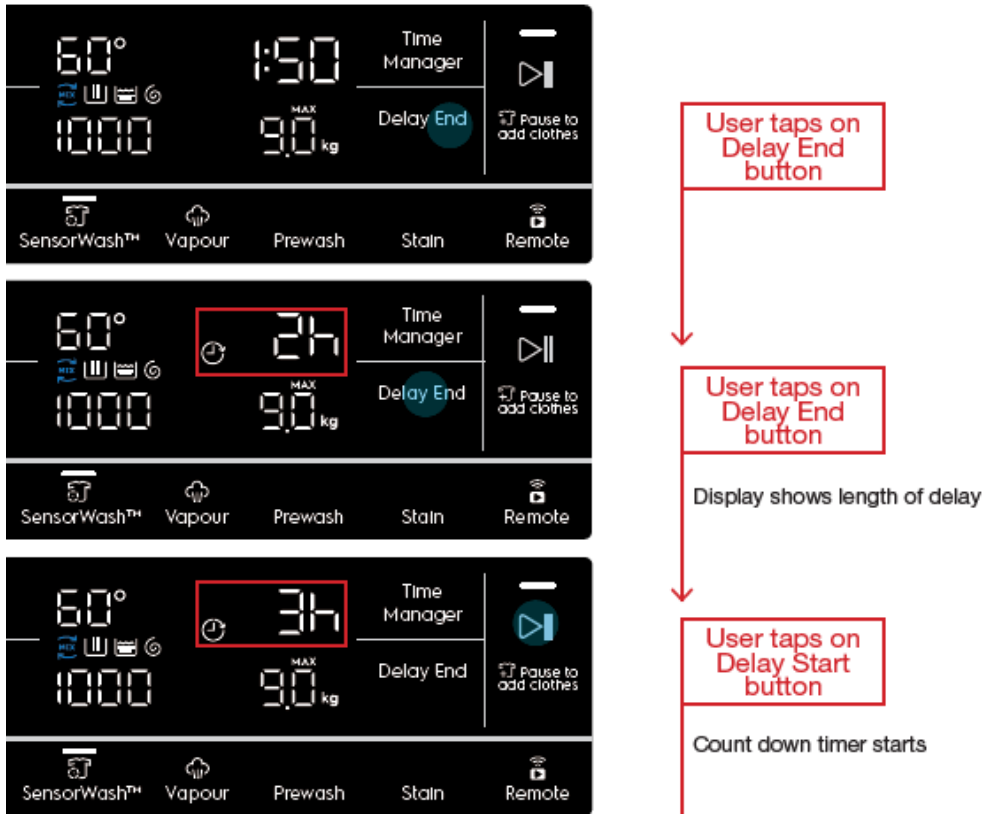
The delay hours should be in increments of 1 hour, with the first option rounded up to the nearest number from the total wash time of the selected program. (e.g. if the wash time is 2:08, pressing Delay End button once would delay the end time to 3h). Maximum delay time is 20h.

Example

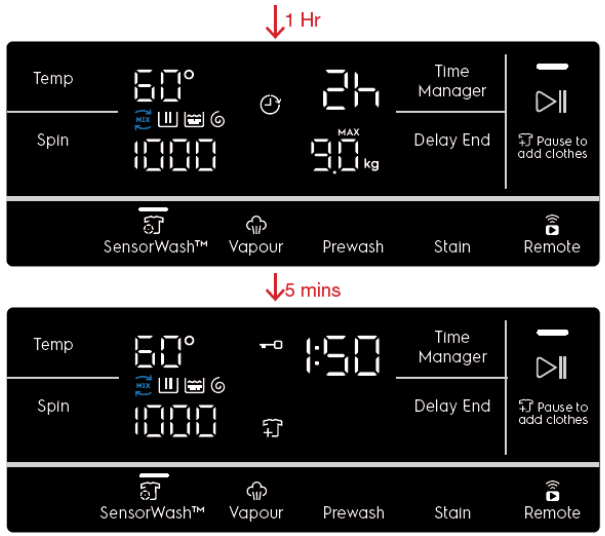
if the program duration of your selected program is 3.20 hours and you define the “Delay End” time to 6 hours. This means your wash program will finish in 6 hours.



Once the user presses Start/Pause, the timer will start counting down (Delayed State). The display will show the hours until the duration of the selected program is left, at which the display will show the wash time (e.g. 4h > 3h > 2h > 1.50) and the timer will countdown as per normal.



6. TC3 LEVEL



Wash Cycle starts

Show wash time on display

Delay End icon LED dismisses

Display time counts down

While in Idle State, if the user adjusts any other settings after setting Delay End, current delay timing will remain unchanged on the display. If the cycle time is changed and current delay time is no longer valid, display will update to the next valid delay time (e.g. If cycle time is 1:25 and delay set at 2h, display should automatically jump to 3h when cycle time becomes 2:05 after changing an option).

Note: Changing of program will cancel any Delay timing set and the Delay icon will be dismissed.

e.g. Cycle time is 1:10

User taps on Temp button

Display shows current delay timing

Delay Start icon still lit.

e.g. Cycle time becomes 1:50

User taps on Temp button

Display shows current delay timing

Delay Start icon still lit.

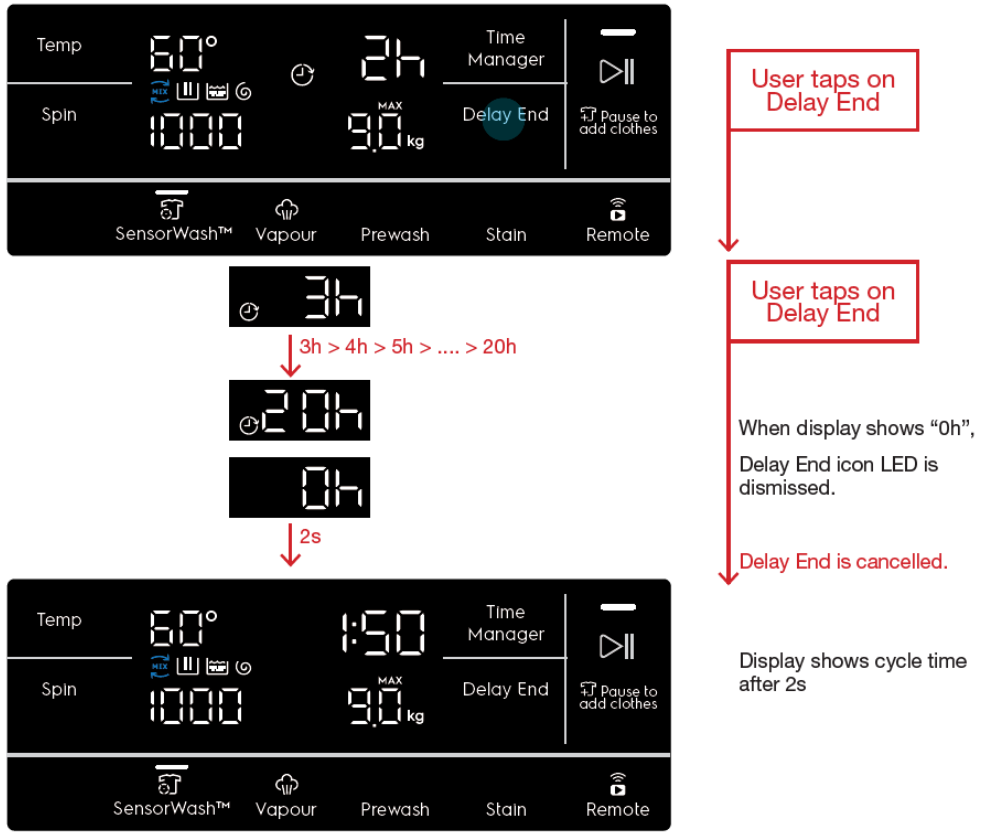
e.g. Cycle time becomes 2:10

Display updates to next valid delay timing.

Delay Start icon still lit.

6.3.11.1 Cancelling Delay End

1. During setup (Idle State):To cancel Delay, press Delay End button until it cycles through the options to select 0h.



User taps on Delay End

User taps on Delay End

When display shows “0h”,

Delay End icon LED is dismissed.

Delay End is cancelled.

Display shows cycle time after 2s

2. After pressing Start (Delayed State): If the user has pressed Start/Pause button while Delay End is activated, the appliance goes into a Delayed Pause State. Pressing the Delay End button again will jump to 0h and the Delay End previously set will be cancelled.

However, if the user press Delay End button again, Delay End will be activated again starting from the first available option (e.g 2h if the cycle time is 1:05).

6.3.12 Time Dry button (WD)

Press this button to select from 10 to 250 minutes of drying.

6.3.13 Delay Start button (WD)

Tapping the Delay Start button allows user to delay the start time of the dry cycle.

The display will show the delay time set (in .mm or Xh format) and the Delay Start icon will light up together. Long tap and hold gesture activates the auto repeat function.

This option makes it possible to delay the start of the program by 30 min, 60 min or 90 min and then by every hour from 2 to 20 hours. The delay you have selected is indicated on the display. The end time will increase in order to show you the selected delay.

Note :

Must select this option after you have set the program and before you press the Start/Pause button.

The cancel the delay time at any moment, by pressing “Delay Start” touchpad repeatedly till the display shows delay time “O”, then press the Start/Pause touchpad.

6.3.14 Start/Pause button

The Start/Pause button is used to start the cycle after being conveniently set up, immediately or after the programmed delay. When the cycle/delay is already in execution, another press pauses the appliance to let the user change options and/or open the door porthole to adjust the laundry load, provided that necessary conditions of temperature and water level are met. It must be pressed again to continue the cycle/delay.

The associated LED gives an immediate feeling of the general state of the appliance:

●**it pulses with a “breathing effect”** during the programme setup with the door closed, signalling that the *Start/Pause* button is enabled to start the cycle;

● **it is steadily lit** as long as the appliance is executing a cycle or a delay phase; the door is locked;

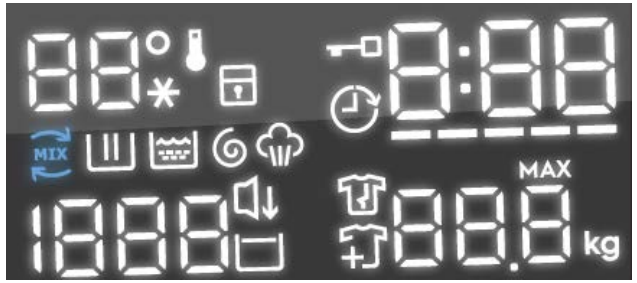
● **it blinks** during cycle or delay pauses and when cycle ends with water into the tub (during rinse hold phase);

● **it is off** when the cycle has ended and the door has been unlocked;

● **it is off** also to indicate that the *Start/Pause* button has been disabled because the door is open (during the program setup or a delay pause) or because the knob has been turned to another position during a pause. The user must close the door and/or turn the knob back to the original position, respectively, before the appliance can be started.

6.4 Display

6.4.1 WM display



The display is a white-on-black LED module including:

● Two 7-segments digits plus degree and Cold symbols for temperature indication

● Three and a half 7-segments digits plus Rinse Hold and Silent (Night Cycle) symbols for spin speed indication

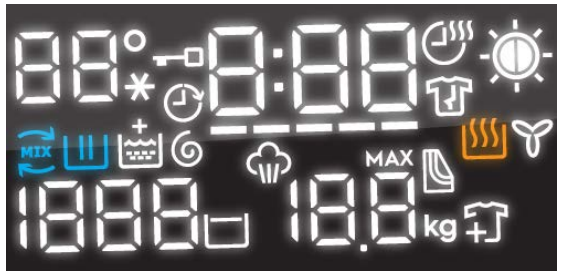
● Three 7-segments digits plus digital points where information about cycle duration, delay time duration and errors/warning are shown

● Three 7-segments digits plus digital point, MAX and kg symbols for recommended load / overload indication

● 5 bars for Time Manager level and indication of SensorWash estimation phase

- Child Lock status symbol
- Door lock status symbol
- Delay End symbol
- Extra Rinse option symbol
  (currently not used since Extra Rinse button has its own LED)
- UltraMix phase symbol
- Wash Phase symbol
- Rinse Phase symbol
- Spin Phase symbol
- Vapour phase symbol
- Add clothes symbol
- Anticrease phase symbol
- Rinse Hold symbol

6.4.2 WD display



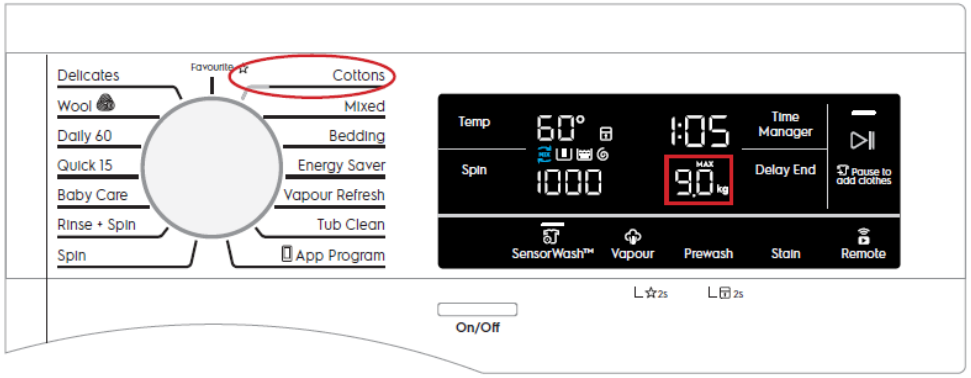
The display is a white-on-black LED module including:
- Two 7-segments digits plus degree and Cold symbols for temperature indication
- Three and a half 7-segments digits plus Rinse Hold and Silent (Night Cycle) symbols for spin speed indication
- Three 7-segments digits plus digital points where information about cycle duration, delay time duration and errors/warning are shown
- Three 7-segments digits plus digital point, MAX and kg symbols for recommended load / overload indication
- 5 bars for Time Manager level and indication of SensorWash estimation phase
- Remote connection status symbol
- Door lock status symbol
- Delay start symbol
- Extra Rinse option symbol
  (currently not used since Extra Rinse button has its own LED)
- UltraMix phase symbol
- Wash Phase symbol
- Rinse Phase symbol
- Spin Phase symbol
- Vapour phase symbol
- Add clothes symbol
- Anticrease phase symbol
- Rinse Hold symbol
- Dryness Level symbol
- Drying phase symbol
- Cooling phase symbol

6.5 Recommended Load Advice

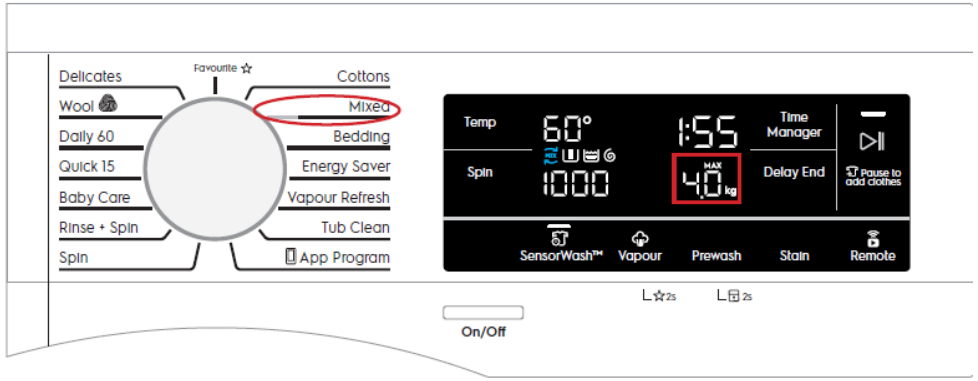
The display is able to show laundry loading advice for each program during setup. This information is shown automatically together with the program settings, as soon as a program is selected.

The information is shown regardless of whether the door is opened or closed.

Example: When Cottons is selected.



Example: When Mixed is selected



7.1 General Characteristics and Control Panel

Diamond Plus Washing Machine

Emerald Washing Machine

Emerald Washing & Dryer Machine

The main characteristics are:

- Absolute selector with 15 position with LED (15 programmes);
- On/Off mechanical tact-switch button always on board;
- WM 9 function buttons:
  WD 10 function buttons:
  - o Temperature button;
  - o Spin button;
  - o WM : 4 option buttons
    (SensorWash, Vapour , Prewash, Stain)
    1 associated LED each;
  - o WD : 5 option buttons
    (Mode , Vapour, Prewash, Extra Rinse , Delay start)
    1 associated LED each;
  - o WM : Delay End button;
    WD : Time Dry button;
  - o WM : Time Manager button;
    WD : Dryness Level button;
  - o Start/Pause button with 1 associated LED;
- Large-size LED module with indication of Temperature, Spin Speed, Recommended weight, Cycle time, Time Manager level and some other function indicators;
- The color of all LEDs (buttons and display) is white.

7.2 Programme selector knob

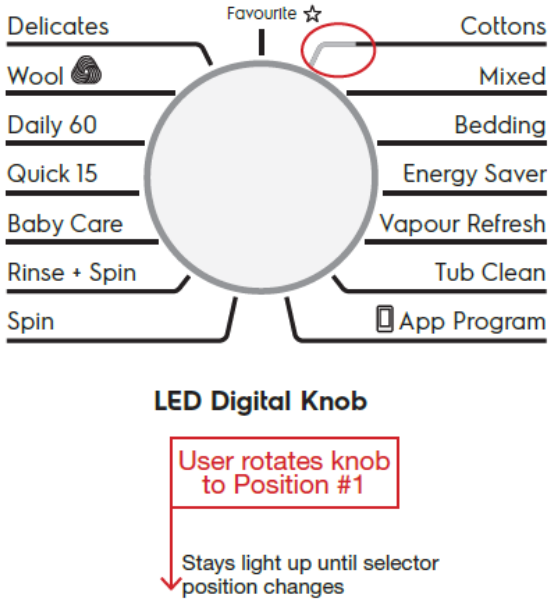
The selector knob is used to select the desired washing programme or to reset the cycle in progress; it can be moved both in clockwise and counter clockwise direction. It is of standard “absolute” type, i.e. the programme selection is done “pointing” the desired graphic with the knob index.
The total number of positions is 15 and it is not configurable.

The 12 o’clock position is reserved for the Reset function, which stops and resets any possible running programme. When the selector is in this position the time digits and, where available, temperature and spin speed digits are filled with dashes (“---”) and the Start/Pause LED remains off meaning that no program is selected and the appliance can’t be started.

Every other position recalls a program as specified in the Machine Configuration (MCF). The layout of the programmes around the main knob is configurable.

LED Digital Knob

By turning the knob, user is able to select wash program which is illuminated with a LED through the line graphic. The LED illumination also strengthen the digital impression on which are models with connectivity features. When machine is Off, the graphics around the knob will look similar to models with pointer knobs.



7.3 Push buttons

All buttons, On/Off excluded, are touch-sensitive type.

7.3.1 On/Off button

All the aesthetics levels of Elux Emerald & Diamond range have a dedicated mechanical tact-switch button for On/Off function. The Off function does not disconnect the machine from the mains supply, but puts 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 Elux Emerald & Diamond range based on EWX13 and EWX14 main board electronic platforms. The user has to unplug machine to disconnect mains power.

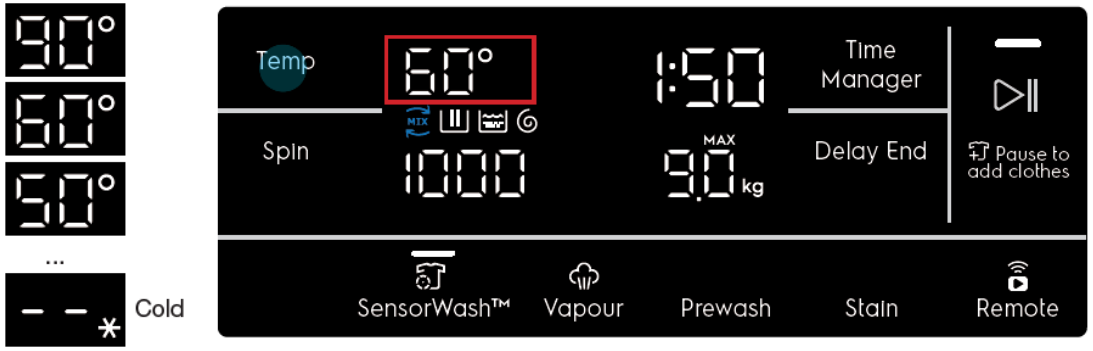
To switch on the appliance press shortly the On/Off button. The user interface plays the dedicated jingle and switches the lights and display on according to default programme.

7.3.2 Temperature button

User can tap on Temp button to adjust water temperature for the selected program.

The number of available settings depends on the configuration of selected program on different TC levels. If a certain setting is not available for the currently selected program, it will be skipped when cycling through the list of available settings.

- Temperature is displayed on the segmented digits on the LED display.
- Temperature is always adjusted downwards, to a lower temperature, and loops back to the highest temperature available if the lowest temperature is reached.

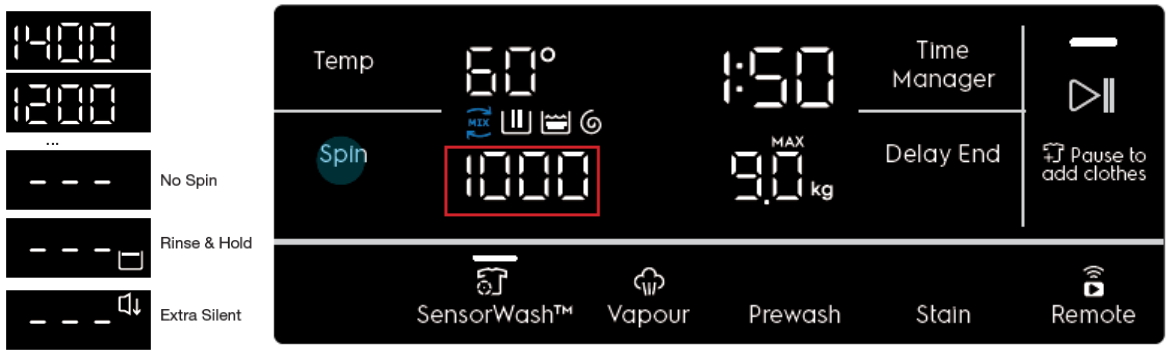


7.3.3 Spin button

The default spin speed changes depending to selected programme . When the button is pressed, the spin speed goes down. Once the lowest speed is reached, the next is Rinse Hold option, if compatible with selected programme, showed via the dedicated LED display below the display. The next selectable option is Silent/Night mode, if compatible with selected programme, showed via the dedicated LED display below the display. After that, the selection restarts from the highest speed available.

The speed values range is: 1400, 1200, 1000, 800, 600, 400, 0 (No spin), Rinse Hold, Silent.

No Spin, Rinse Hold and Silent (Night Cycle) (if selected via a push button) are shown with “---”.



7.3.4 Mode button (WD)

The Mode button available on Washer Dyer machine only.
The Mode default is “Wash” (Except WashDyer 60 program)
When the button is pressed, the Mode will change.The selection starts from the default setting.
The mode can be set among the following default setting : Wash , Dry , Wash + Dry.

7.3.5 SensorWash button (WM)

The default SensorWash™ (Turbidity and Conductivity (T&C) Sensors) temperature changes depending on selected programme. The button allows the user to toggle On and Off the Turbidity and Conductivity (T&C)sensor for a better wash and rinse performance.

7.3.6 Vapour button (WM)

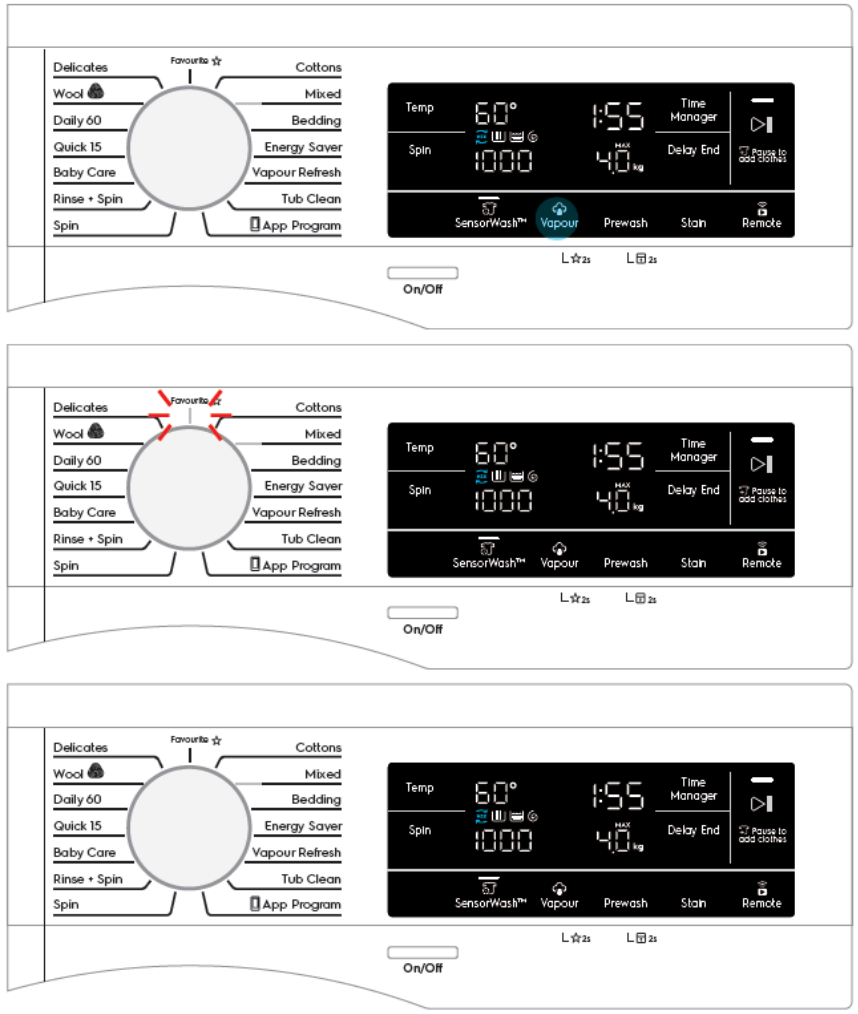
Adds a Vapour phase after the drain/spin phase. The user can press the Vapour option key to toggle this feature on, provided that the selected program allows it. Vapour will increase the time of the selected cycle, and the TTE digits will update to reflect this. Pressing the Vapour option key again will toggle the function off.

7.3.6.1 Prewash button (WD)

Pressing the button the related option is activated/de-activated. When the option is active the associated LED switches on. The options can be set only if they are available for selected program.

7.3.6.2 Save Favourited button

Keeping the finger pressed on the Vapour/Prewash button’s touch area for at least 3 seconds, it enables the secondary function related to the same button: in this case the “Save Favourite” function.
“FAV” will show in place of the wash time for 2s and changes back to show wash duration
Favourite allows user to recall only 1 favourite program. Delay End setting will not be recorded.



User taps & hold Vapour button for 2s

Favourite LED 0% to 100%, stays light up for 0.2s

Favourite LED 100% to 0%, dismisses for 0.2s

Loop and blink LED 3x

Favourite LED is dismissed while LED of selected program and settings remain lit

7.3.6.3 Recall Favourite

To recall the most recent saved program, user can rotate the rotary knob to select Favourite.

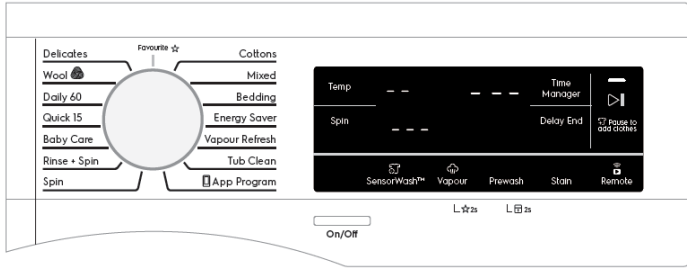
7.3.6.4 Changing options

When Favourite program is selected, other option settings can be adjusted as long as they are
available to the saved program*.
*Note 1: These new adjustments will not change the saved settings in the Favourite program.
*Note 2: If user press and hold save Favourite again at this point, the new settings will overwrite the
current saved settings.

7.3.6.5 If No Favourite Program Saved

In the event that no Favourite program was saved, when Favourite is selected, the segmented
display will show dashes in place of Temp, Spin, Time information, with all other LEDs off

All touch buttons will become inactive until another program is selected



7.3.7 Prewash button (WM)

Refer to paragraph 6.3.6.1

7.3.7.1 Extra Rinse

To adds an extra rinse phase after the regular rinsing phase. The user can press the Extra Rinse option key to toggle this feature on, provided that the selected program allows it. Extra Rinse will increase the time of the selected cycle, and the TTE digits will update to reflect this. Pressing the Extra Rinse option key again will toggle the function off, and return the TTE digits to their original time.

The Extra Rinse option is a “sticky” toggle, i.e. the setting will be remembered when changing the program (if the selected program supports it), and even when the appliance is Reset or turned off.

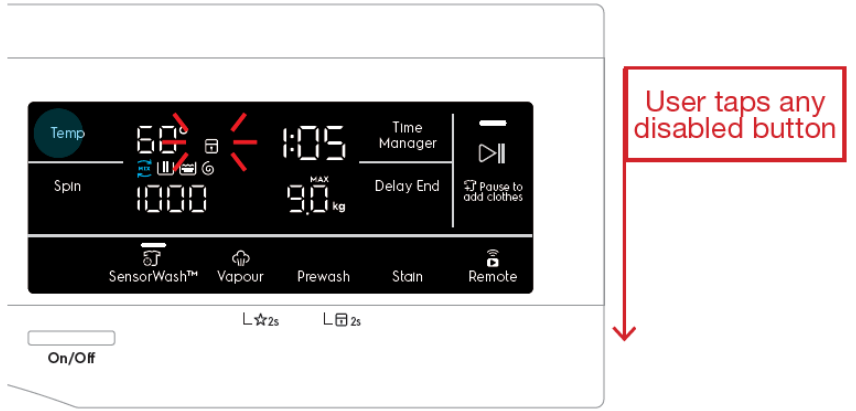
7.3.8 Child Lock button

7.3.8.1 Active Child Lock button (WM)

Keeping the finger pressed on the button’s touch area for at least 3 seconds, it enables the secondary function related to the same button: in this case the Child Lock. A double beep is played as feedback.

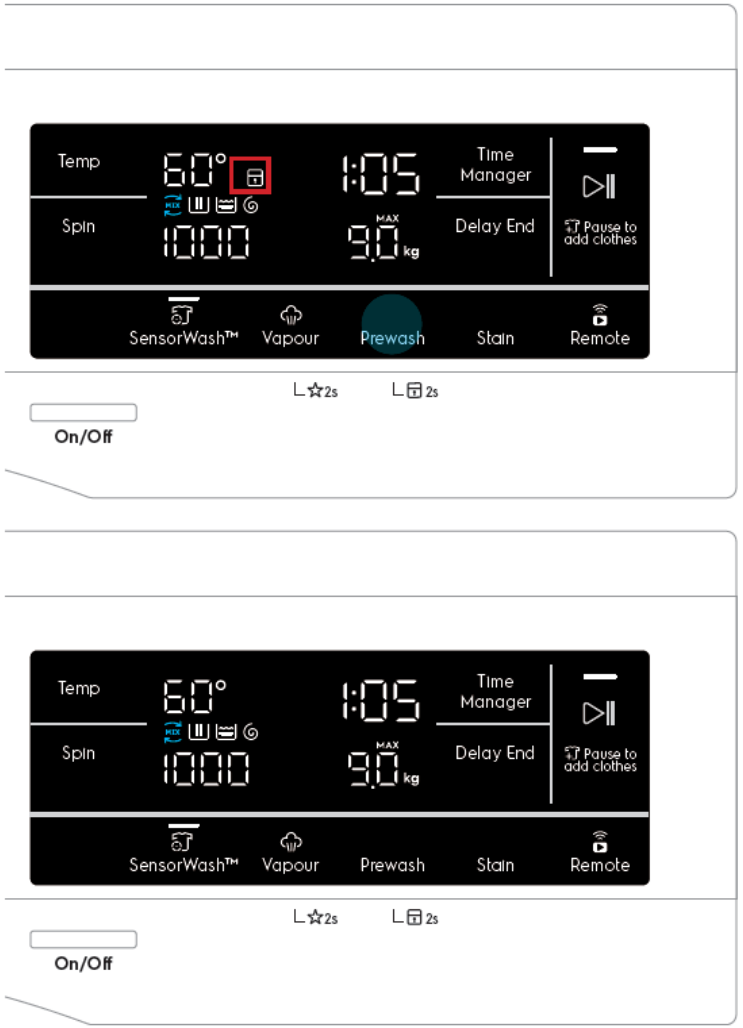
7.3.8.1.1 When Child Lock is on

When Child Lock is activated, play tone KeyInvalid tone and flash the lock icon 3 times when user presses any of the deactivated buttons, then remains static.



7.3.8.1.2 Deactivate Child Lock

In the same way, in order to disable the Child Lock mode the Prewash(WM)/Extra Rinse(WD) button must be kept pressed for at least 3 second.



User taps and hold Prewash button for 2s

Child Lock is deactivated.

7.3.8.2 Active Child Lock button (WD)

Keeping the finger pressed on the button's touch area for at least 3 seconds, it enables the secondary function related to the same button: in this case the Child Lock. A double beep is played as feedback.

"LOC" will be shown on the segmented display for 2s and goes back
to showing wash time.

When Child Lock is activated,User presses any of the deactivated buttons, then remains static.

7.3.8.2.1 When Child Lock is on (WD)

When Child Lock is activated, play tone KeyInvalid tone and flash "LOC" 3 times at a rate of 0.15s. when user presses any of the deactivated buttons, then remains static.

7.3.8.2.2 Active Child Lock button (WD)

In the same way, in order to disable the Child Lock mode the Vapour button must be kept pressed for at least 3 second.

When Child Lock is deactivated, “unL” will be shown on the segmented display for 2 sec and goes back to showing wash time.

7.3.9 Stain (WM)

Adds stain treatment to the washing phase. The user can press the Stain option key to toggle this feature on, provided that the selected program allows it. Stain will increase the time of the selected cycle, and the TTE digits will update to reflect this. Pressing the Stain option key again will toggle the function off, and return the TTE digits to their original time.

7.3.9.1 Delay Start (WD)

Tapping the Delay Start button allows user to delay the start time of the dry cycle.

The display will show the delay time set (in .mm or Xh format) and the Delay Start icon will light up together. Long tap and hold gesture activates the auto repeat function.

This option makes it possible to delay the start of the program by 30 min, 60 min or 90 min and then by every hour from 2 to 20 hours. The delay you have selected is indicated on the display. The end time will increase in order to show you the selected delay.

Note :

Must select this option after you have set the program and before you press the Start/Pause button.

The cancel the delay time at any moment, by pressing “Delay Start” touchpad repeatedly till the display shows delay time “O”, then press the Start/Pause touchpad.

7.3.10 Time manager button (WM)

Time Manager allows the user to adjust the duration of the wash if he/she wishes to do so depending on the soil level of the laundry.

Pressing the Time Manager button will then adjust the wash duration upwards (to a longer time) up to Level 5, and loops back to Level 1.

Example

(Light) (Medium) (Heavy)

Note:

Time Manager function is not available when SensorWash™ (Turbidity and Conductivity Sensors) is On. By default, Time Manager is Off. Pressing on the Time Manager button will toggle Off SensorWash™. Like-wise, toggling Off SensorWash™ will turn On Time Manager.

7.3.10.1 Dryness level button (WD)

Dryness level allows the user to choose from three different levels of automatic drying.

Extra Dry Cupboard Dry Iron Dry

7.3.11 Delay end button (WM)

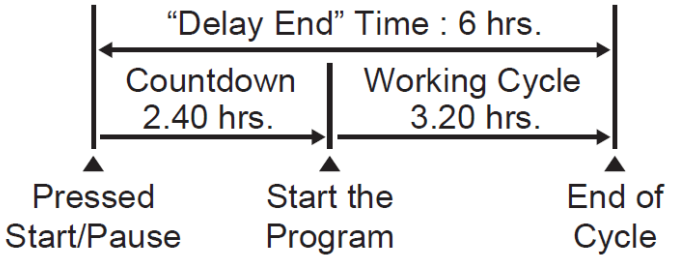
Tapping the Delay End button allows user to delay the end time of the wash cycle.

The display will show the delay time set (in :mm or Xh format) and the Delay End icon will light up together. Long tap and hold gesture activates the auto repeat function.

The delay hours should be in increments of 1 hour, with the first option rounded up to the nearest number from the total wash time of the selected program. (e.g. if the wash time is 2:08, pressing Delay End button once would delay the end time to 3h). Maximum delay time is 20h.

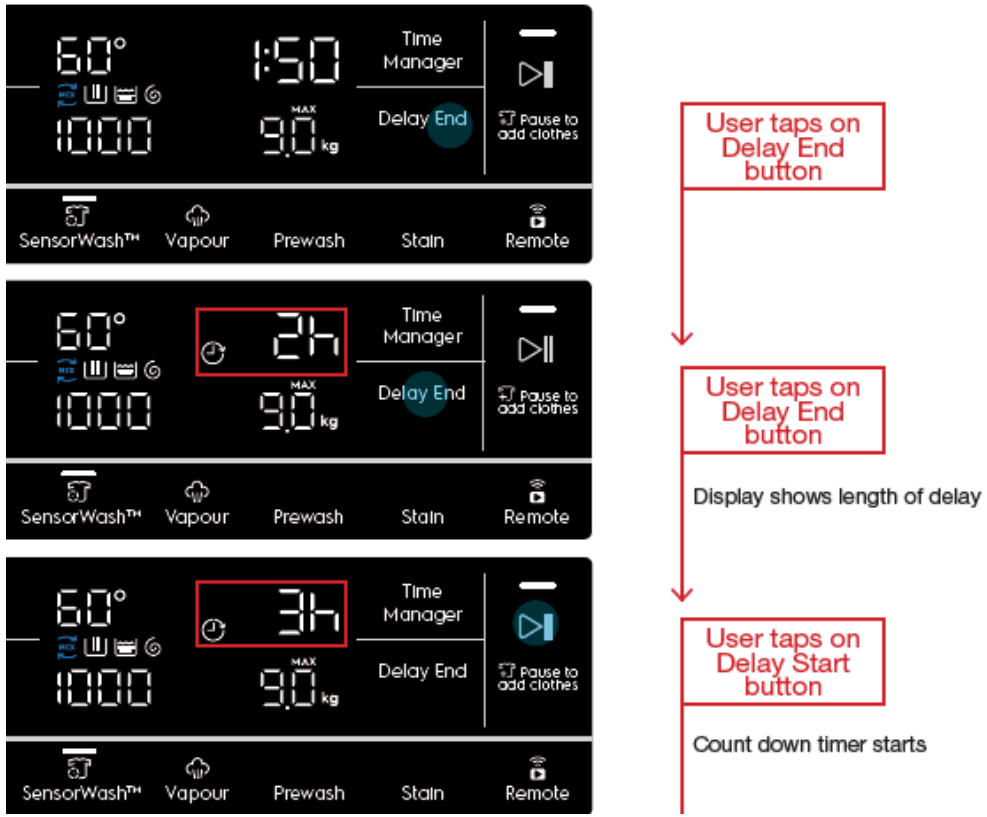
Example

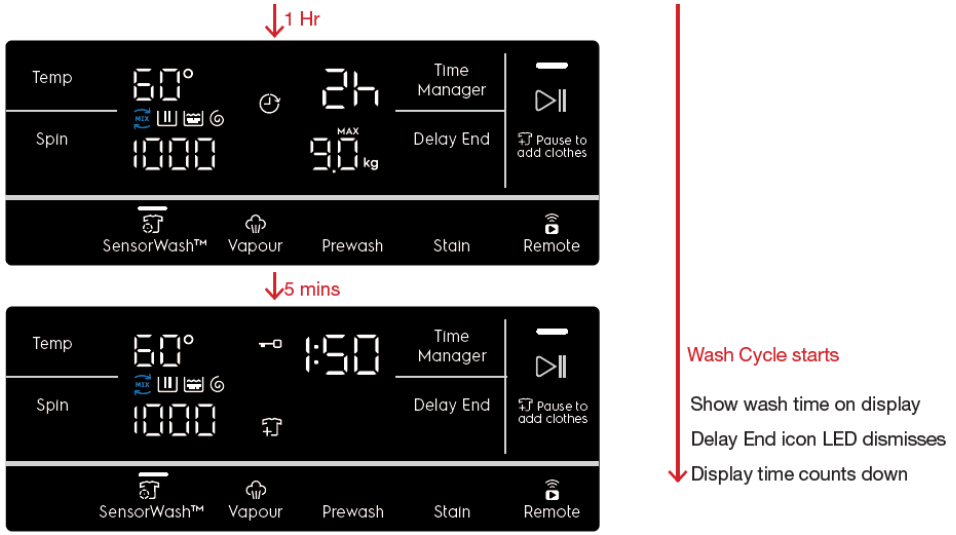
if the program duration of your selected program is 3.20 hours and you define the “Delay End” time to 6 hours. This means your wash program will finish in 6 hours.



7. TC2 LEVEL

Once the user presses Start/Pause, the timer will start counting down (Delayed State). The display will show the hours until the duration of the selected program is left, at which the display will show the wash time (e.g. 4h > 3h > 2h > 1.50) and the timer will countdown as per normal.





While in Idle State, if the user adjusts any other settings after setting Delay End, current delay timing will remain unchanged on the display. If the cycle time is changed and current delay time is no longer valid, display will update to the next valid delay time (e.g. If cycle time is 1:25 and delay set at 2h, display should automatically jump to 3h when cycle time becomes 2:05 after changing an option).

Note: Changing of program will cancel any Delay timing set and the Delay icon will be dismissed.

e.g. Cycle time is 1:10

User taps on Temp button

Display shows current delay timing

Delay Start icon still lit.

e.g. Cycle time becomes 1:50

User taps on Temp button

Display shows current delay timing

Delay Start icon still lit.

e.g. Cycle time becomes 2:10

Display updates to next valid delay timing.

Delay Start icon still lit.

7.3.11.1 Cancelling Delay End

1. During setup (Idle State):To cancel Delay, press Delay End button until it cycles through the options to select 0h.

User taps on Delay End

3h > 4h > 5h > .... > 20h

2s

User taps on Delay End

When display shows “0h”,

Delay End icon LED is dismissed.

Delay End is cancelled.

Display shows cycle time after 2s

2. After pressing Start (Delayed State): If the user has pressed Start/Pause button while Delay End is activated, the appliance goes into a Delayed Pause State. Pressing the Delay End button again will jump to 0h and the Delay End previously set will be cancelled.

However, if the user press Delay End button again, Delay End will be activated again starting from the first available option (e.g 2h if the cycle time is 1:05).

7.3.12 Time Dry button (WD)

Press this button to select from 10 to 250 minutes of drying.

7.3.13 Delay Start button (WD)

Tapping the Delay Start button allows user to delay the start time of the dry cycle.

The display will show the delay time set (in .mm or Xh format) and the Delay Start icon will light up together. Long tap and hold gesture activates the auto repeat function.

This option makes it possible to delay the start of the program by 30 min, 60 min or 90 min and then by every hour from 2 to 20 hours. The delay you have selected is indicated on the display. The end time will increase in order to show you the selected delay.

Note :

Must select this option after you have set the program and before you press the Start/Pause button.

The cancel the delay time at any moment, by pressing “Delay Start” touchpad repeatedly till the display shows delay time “O”, then press the Start/Pause touchpad.

7.3.14 Start/Pause button

The Start/Pause button is used to start the cycle after being conveniently set up, immediately or after the programmed delay. When the cycle/delay is already in execution, another press pauses the appliance to let the user change options and/or open the door porthole to adjust the laundry load, provided that necessary conditions of temperature and water level are met. It must be pressed again to continue the cycle/delay.

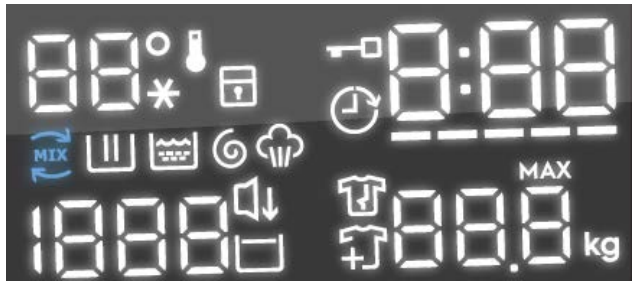
The associated LED gives an immediate feeling of the general state of the appliance:

- **it pulses with a “breathing effect”** during the programme setup with the door closed, signalling that the *Start/Pause* button is enabled to start the cycle;
- **it is steadily lit** as long as the appliance is executing a cycle or a delay phase; the door is locked;
- **it blinks** during cycle or delay pauses and when cycle ends with water into the tub (during rinse hold phase);
- **it is off** when the cycle has ended and the door has been unlocked;

● **it is off** also to indicate that the *Start/Pause* button has been disabled because the door is open (during the program setup or a delay pause) or because the knob has been turned to another position during a pause. The user must close the door and/or turn the knob back to the original position, respectively, before the appliance can be started.

7.4 Display

7.4.1 WM display



The display is a white-on-black LED module including:

● Two 7-segments digits plus degree and Cold symbols for temperature indication

● Three and a half 7-segments digits plus Rinse Hold and Silent (Night Cycle) symbols for spin speed indication

● Three 7-segments digits plus digital points where information about cycle duration, delay time duration and errors/warning are shown

● Three 7-segments digits plus digital point, MAX and kg symbols for recommended load / overload indication

● 5 bars for Time Manager level and indication of SensorWash estimation phase

● Child Lock status symbol

● Door lock status symbol

● Delay End symbol

● Extra Rinse option symbol
(currently not used since Extra Rinse button has its own LED)

● UltraMix phase symbol

● Wash Phase symbol

● Rinse Phase symbol

● Spin Phase symbol

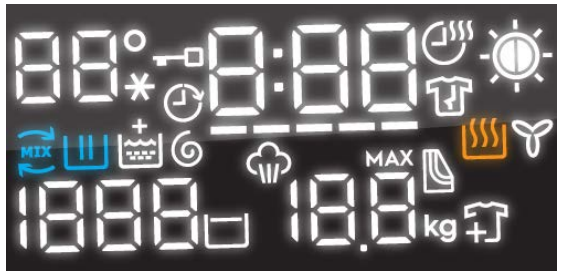
● Vapour phase symbol

● Add clothes symbol

● Anticrease phase symbol

● Rinse Hold symbol

7.4.2 WD display



The display is a white-on-black LED module including:

● Two 7-segments digits plus degree and Cold symbols for temperature indication

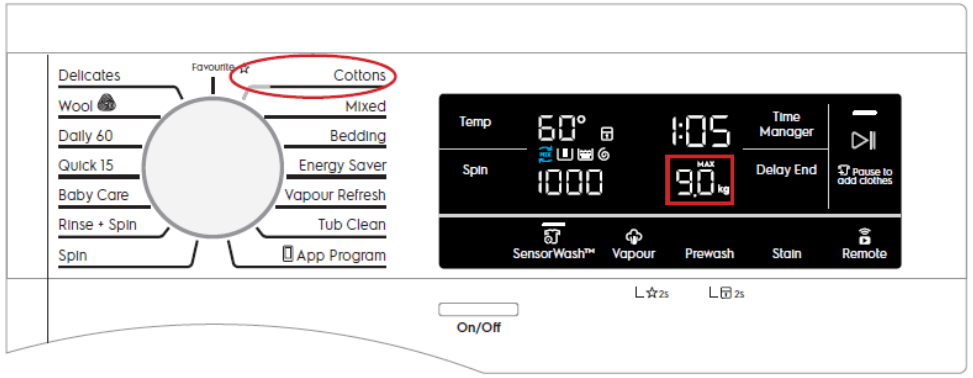
- Three and a half 7-segments digits plus Rinse Hold and Silent (Night Cycle) symbols for spin speed indication
- Three 7-segments digits plus digital points where information about cycle duration, delay time duration and errors/warning are shown
- Three 7-segments digits plus digital point, MAX and kg symbols for recommended load / overload indication
- 5 bars for Time Manager level and indication of SensorWash estimation phase
- Remote connection status symbol
- Door lock status symbol
- Delay start symbol
- Extra Rinse option symbol
  (currently not used since Extra Rinse button has its own LED)
- UltraMix phase symbol
- Wash Phase symbol
- Rinse Phase symbol
- Spin Phase symbol
- Vapour phase symbol
- Add clothes symbol
- Anticrease phase symbol
- Rinse Hold symbol
- Dryness Level symbol
- Drying phase symbol
- Cooling phase symbol

7.5 Recommended Load Advice

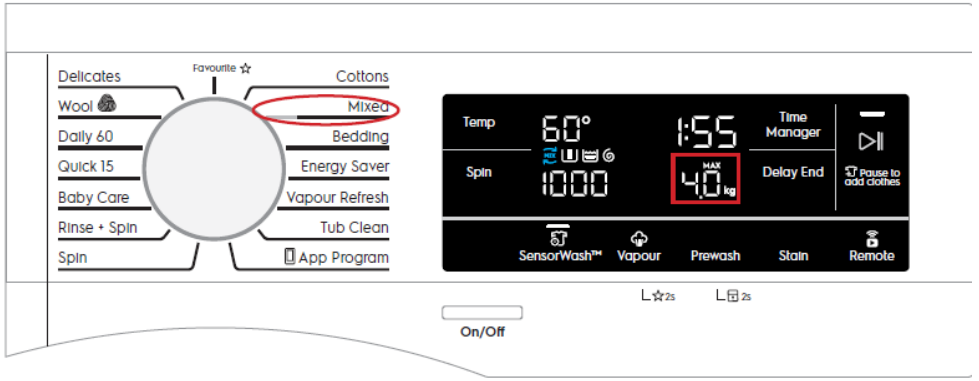
The display is able to show laundry loading advice for each program during setup. This information is shown automatically together with the program settings, as soon as a program is selected.

The information is shown regardless of whether the door is opened or closed.

Example: When Cottons is selected.



Example: When Mixed is selected



8.1 General Characteristics and Control Panel

Emerald Washing Machine

Emerald Washing & Dryer Machine

The main characteristics are:

- Absolute selector with 15 position with LED (15 programmes);
- On/Off mechanical tact-switch button always on board;
- WM 9 function buttons:
  WD 10 function buttons:
  - o Temperature button;
  - o Spin button;
  - o WM : 4 option buttons
    (SensorWash, Vapour , Prewash, Stain)
    1 associated LED each;
  - o WD : 5 option buttons
    (Mode , Vapour, Prewash, Extra Rinse , Delay start)
    1 associated LED each;
  - o WM : Delay End button;
    WD : Time Dry button;
  - o WM : Time Manager button;
    WD : Dryness Level button;
  - o Start/Pause button with 1 associated LED;
- Large-size LED module with indication of Temperature, Spin Speed, Recommended weight, Cycle time, Time Manager level and some other function indicators;
- The color of all LEDs (buttons and display) is white.

8.2 Programme selector knob

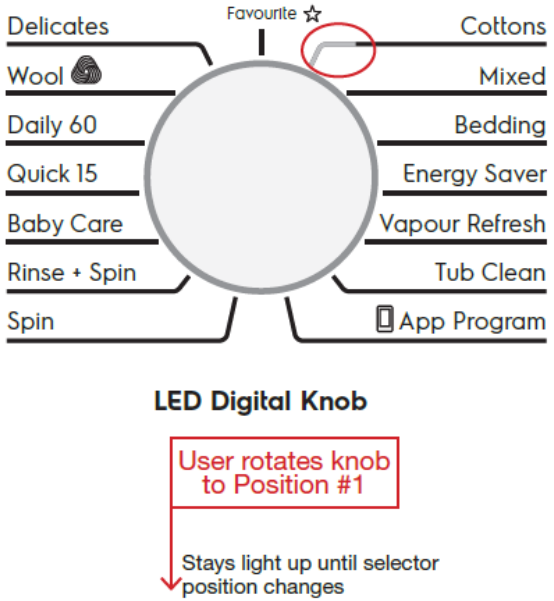
The selector knob is used to select the desired washing programme or to reset the cycle in progress; it can be moved both in clockwise and counter clockwise direction. It is of standard “absolute” type, i.e. the programme selection is done “pointing” the desired graphic with the knob index.
The total number of positions is 15 and it is not configurable.

The 12 o’clock position is reserved for the Reset function, which stops and resets any possible running programme. When the selector is in this position the time digits and, where available, temperature and spin speed digits are filled with dashes (“---”) and the Start/Pause LED remains off meaning that no program is selected and the appliance can’t be started.

Every other position recalls a program as specified in the Machine Configuration (MCF). The layout of the programmes around the main knob is configurable.

LED Digital Knob

By turning the knob, user is able to select wash program which is illuminated with a LED through the line graphic. The LED illumination also strengthen the digital impression on which are models with connectivity features. When machine is Off, the graphics around the knob will look similar to models with pointer knobs.



8.3 Push buttons

All buttons, On/Off excluded, are touch-sensitive type.

8.3.1 On/Off button

All the aesthetics levels of Elux Emerald & Diamond range have a dedicated mechanical tact-switch button for On/Off function. The Off function does not disconnect the machine from the mains supply, but puts 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 Elux Emerald & Diamond range based on EWX13 and EWX14 main board electronic platforms. The user has to unplug machine to disconnect mains power.

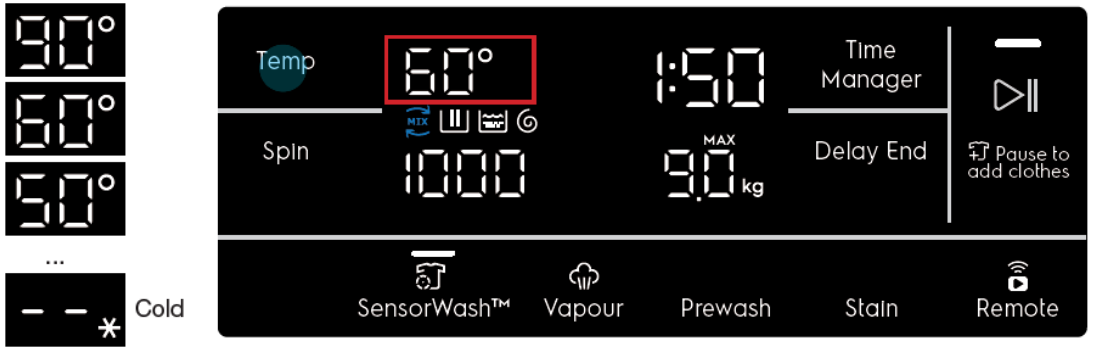
To switch on the appliance press shortly the On/Off button. The user interface plays the dedicated jingle and switches the lights and display on according to default programme.

8.3.2 Temperature button

User can tap on Temp button to adjust water temperature for the selected program.

The number of available settings depends on the configuration of selected program on different TC levels. If a certain setting is not available for the currently selected program, it will be skipped when cycling through the list of available settings.

- Temperature is displayed on the segmented digits on the LED display.
- Temperature is always adjusted downwards, to a lower temperature, and loops back to the highest temperature available if the lowest temperature is reached.

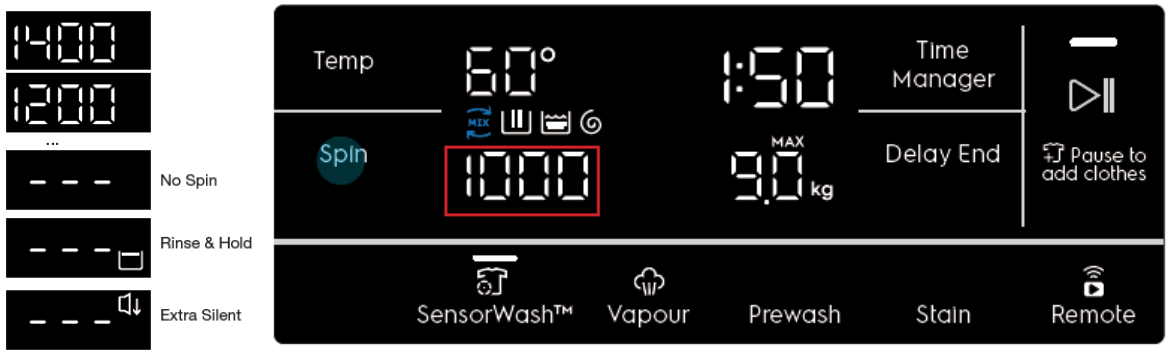


8.3.3 Spin button

The default spin speed changes depending to selected programme . When the button is pressed, the spin speed goes down. Once the lowest speed is reached, the next is Rinse Hold option, if compatible with selected programme, showed via the dedicated LED display below the display. The next selectable option is Silent/Night mode, if compatible with selected programme, showed via the dedicated LED display below the display. After that, the selection restarts from the highest speed available.

The speed values range is: 1400, 1200, 1000, 800, 600, 400, 0 (No spin), Rinse Hold, Silent.

No Spin, Rinse Hold and Silent (Night Cycle) (if selected via a push button) are shown with “---”.



8.3.4 Mode button (WD)

The Mode button available on Washer Dyer machine only.
The Mode default is “Wash” (Except WashDyer 60 program)

When the button is pressed, the Mode will change.The selection starts from the default setting.

The mode can be set among the following default setting : Wash , Dry , Wash + Dry.

8.3.5 SensorWash button (WM)

The default SensorWash™ (Turbidity and Conductivity (T&C) Sensors) temperature changes depending on selected programme. The button allows the user to toggle On and Off the Turbidity and Conductivity (T&C)sensor for a better wash and rinse performance.

8.3.6 Vapour button (WM)

Adds a Vapour phase after the drain/spin phase. The user can press the Vapour option key to toggle this feature on, provided that the selected program allows it. Vapour will increase the time of the selected cycle, and the TTE digits will update to reflect this. Pressing the Vapour option key again will toggle the function off.

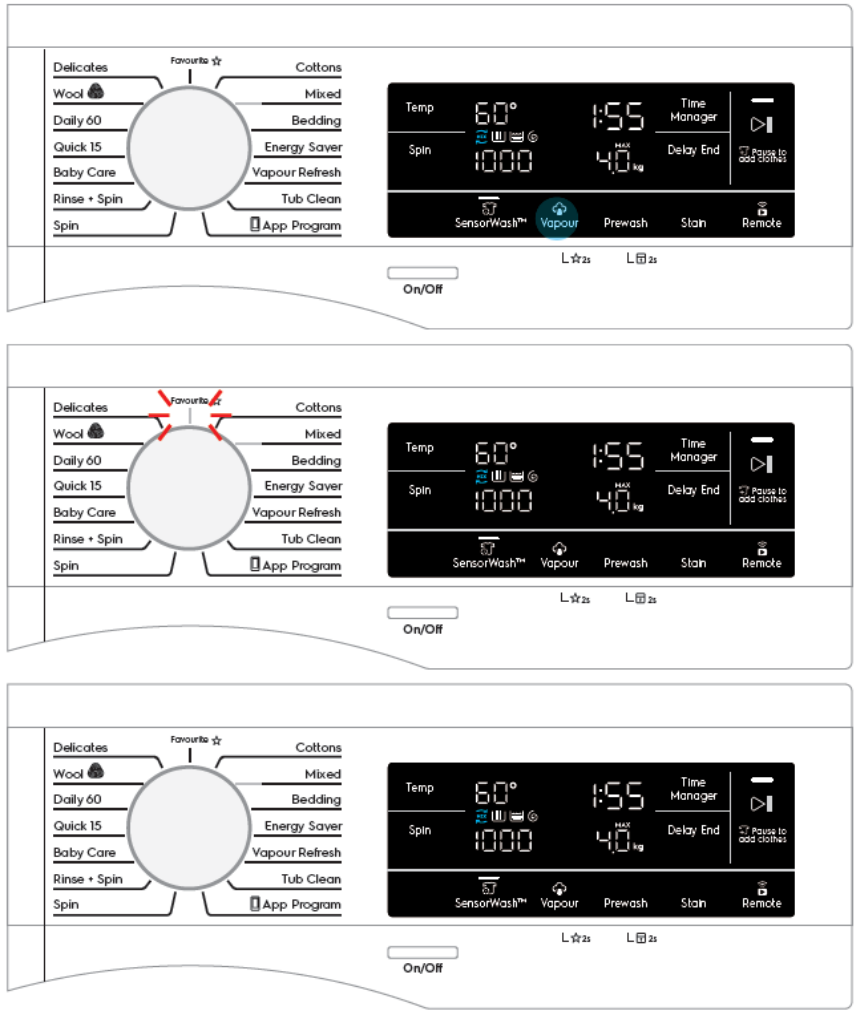
8.3.6.1 Prewash button (WD)

Pressing the button the related option is activated/de-activated. When the option is active the associated LED switches on. The options can be set only if they are available for selected program.

Keeping the finger pressed on the Vapour/Prewash button’s touch area for at least 3 seconds, it enables the secondary function related to the same button: in this case the “Save Favourite” function.

“FAV” will show in place of the wash time for 2s and changes back to show wash duration

Favourite allows user to recall only 1 favourite program. Delay End setting will not be recorded.



User taps & hold Vapour button for 2s

Favourite LED 0% to 100%, stays light up for 0.2s

Favourite LED 100% to 0%, dismisses for 0.2s

Loop and blink LED 3x

Favourite LED is dismissed while LED of selected program and settings remain lit

8.3.6.3 Recall Favourite

To recall the most recent saved program, user can rotate the rotary knob to select Favourite.

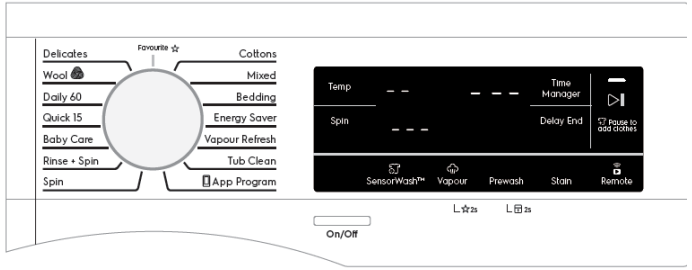
8.3.6.4 Changing options

When Favourite program is selected, other option settings can be adjusted as long as they are
available to the saved program*.
*Note 1: These new adjustments will not change the saved settings in the Favourite program.
*Note 2: If user press and hold save Favourite again at this point, the new settings will overwrite the
current saved settings.

8.3.6.5 If No Favourite Program Saved

In the event that no Favourite program was saved, when Favourite is selected, the segmented
display will show dashes in place of Temp, Spin, Time information, with all other LEDs off

All touch buttons will become inactive until another program is selected



8.3.7 Prewash button (WM)

Refer to paragraph 6.3.6.1

8.3.7.1 Extra Rinse

To adds an extra rinse phase after the regular rinsing phase. The user can press the Extra Rinse option key to toggle this feature on, provided that the selected program allows it. Extra Rinse will increase the time of the selected cycle, and the TTE digits will update to reflect this. Pressing the Extra Rinse option key again will toggle the function off, and return the TTE digits to their original time.

The Extra Rinse option is a “sticky” toggle, i.e. the setting will be remembered when changing the program (if the selected program supports it), and even when the appliance is Reset or turned off.

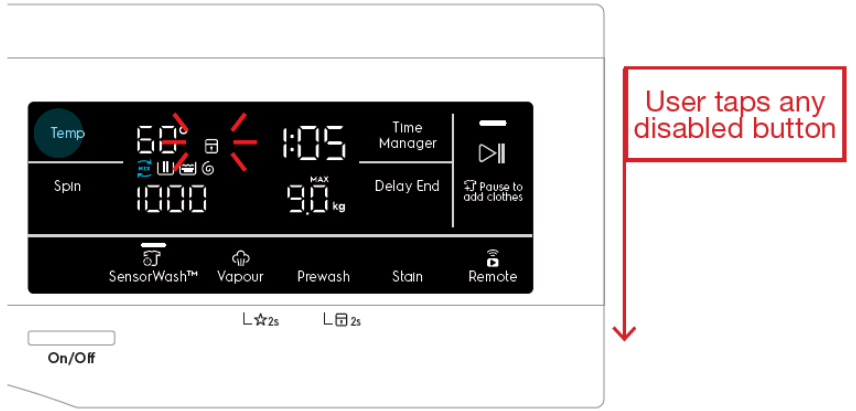
8.3.8 Child Lock button

8.3.8.1 Active Child Lock button (WM)

Keeping the finger pressed on the button’s touch area for at least 3 seconds, it enables the secondary function related to the same button: in this case the Child Lock. A double beep is played as feedback.

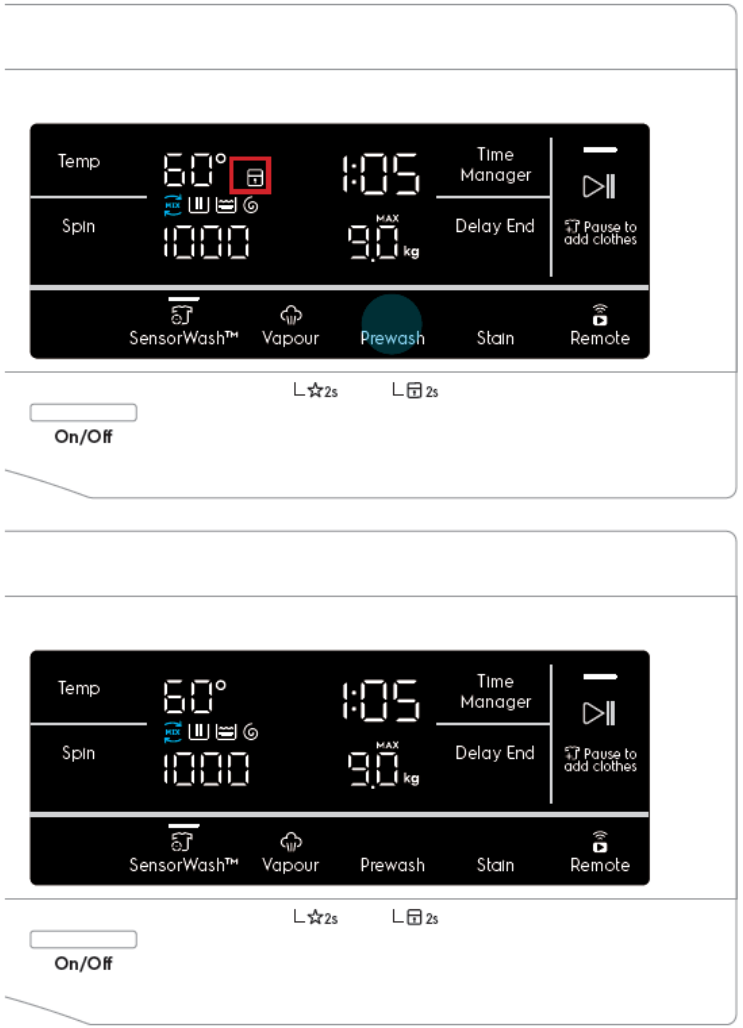
8.3.8.1.1 When Child Lock is on

When Child Lock is activated, play tone KeyInvalid tone and flash the lock icon 3 times when user presses any of the deactivated buttons, then remains static.



8.3.8.1.2 Deactivate Child Lock

In the same way, in order to disable the Child Lock mode the Prewash(WM)/Extra Rinse(WD) button must be kept pressed for at least 3 second.



User taps and hold Prewash button for 2s

Child Lock is deactivated.

8.3.8.2 Active Child Lock button (WD)

Keeping the finger pressed on the button's touch area for at least 3 seconds, it enables the secondary function related to the same button: in this case the Child Lock. A double beep is played as feedback.

"LOC" will be shown on the segmented display for 2s and goes back
to showing wash time.

When Child Lock is activated,User presses any of the deactivated buttons, then remains static.

7.3.8.2.1 When Child Lock is on (WD)

When Child Lock is activated, play tone KeyInvalid tone and flash "LOC" 3 times at a rate of 0.15s. when user presses any of the deactivated buttons, then remains static.

8.3.8.2.2 Active Child Lock button (WD)

In the same way, in order to disable the Child Lock mode the Vapour button must be kept pressed for at least 3 second.

When Child Lock is deactivated, “unL” will be shown on the segmented display for 2 sec and goes back to showing wash time.

8.3.9 Stain (WM)

Adds stain treatment to the washing phase. The user can press the Stain option key to toggle this feature on, provided that the selected program allows it. Stain will increase the time of the selected cycle, and the TTE digits will update to reflect this. Pressing the Stain option key again will toggle the function off, and return the TTE digits to their original time.

8.3.9.1 Delay Start (WD)

Tapping the Delay Start button allows user to delay the start time of the dry cycle.

The display will show the delay time set (in .mm or Xh format) and the Delay Start icon will light up together. Long tap and hold gesture activates the auto repeat function.

This option makes it possible to delay the start of the program by 30 min, 60 min or 90 min and then by every hour from 2 to 20 hours. The delay you have selected is indicated on the display. The end time will increase in order to show you the selected delay.

Note :

Must select this option after you have set the program and before you press the Start/Pause button.

The cancel the delay time at any moment, by pressing “Delay Start” touchpad repeatedly till the display shows delay time “O”, then press the Start/Pause touchpad.

8.3.10 Time manager button (WM)

Time Manager allows the user to adjust the duration of the wash if he/she wishes to do so depending on the soil level of the laundry.

Pressing the Time Manager button will then adjust the wash duration upwards (to a longer time) up to Level 5, and loops back to Level 1.

Example

(Light) (Medium) (Heavy)

Note:

Time Manager function is not available when SensorWash™ (Turbidity and Conductivity Sensors) is On. By default, Time Manager is Off. Pressing on the Time Manager button will toggle Off SensorWash™. Like-wise, toggling Off SensorWash™ will turn On Time Manager.

8.3.10.1 Dryness level button (WD)

Dryness level allows the user to choose from three different levels of automatic drying.

Extra Dry Cupboard Dry Iron Dry

8.3.11 Delay end button (WM)

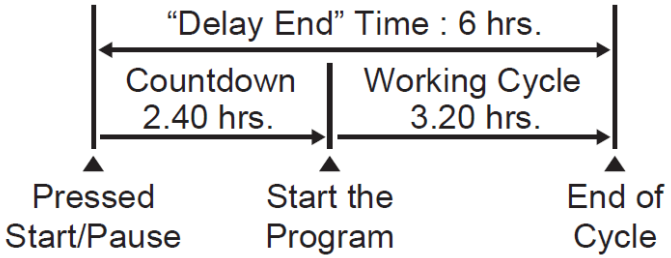
Tapping the Delay End button allows user to delay the end time of the wash cycle.

The display will show the delay time set (in :mm or Xh format) and the Delay End icon will light up together. Long tap and hold gesture activates the auto repeat function.

The delay hours should be in increments of 1 hour, with the first option rounded up to the nearest number from the total wash time of the selected program. (e.g. if the wash time is 2:08, pressing Delay End button once would delay the end time to 3h). Maximum delay time is 20h.

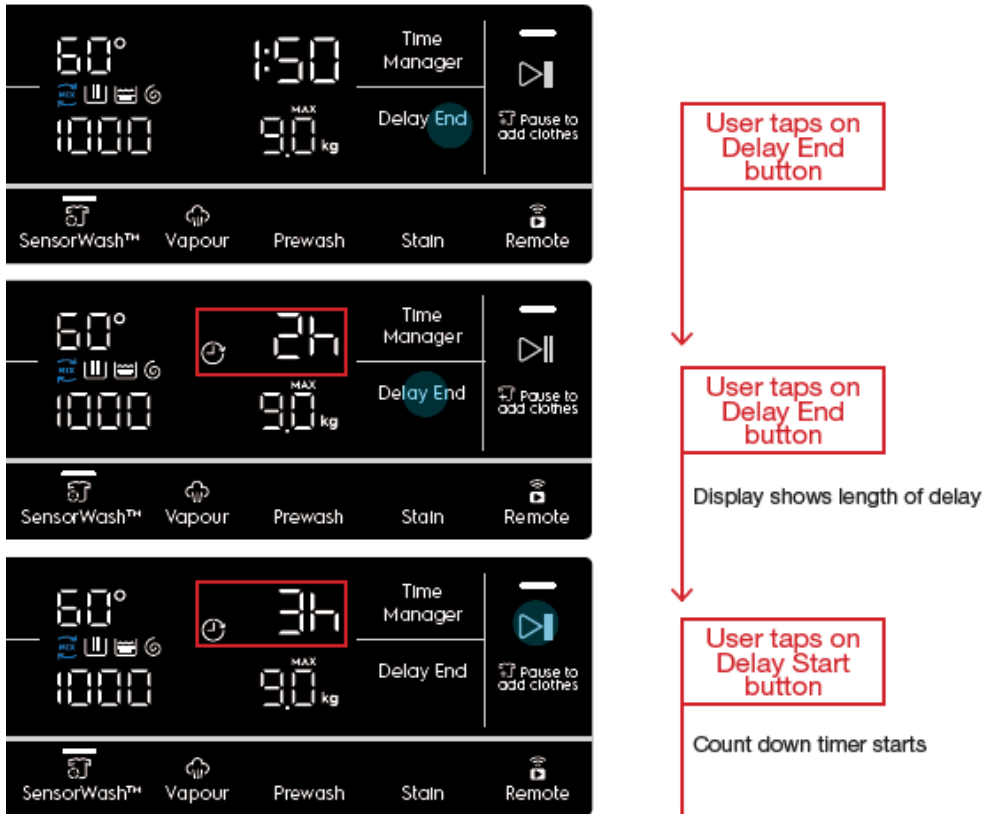
Example

if the program duration of your selected program is 3.20 hours and you define the “Delay End” time to 6 hours. This means your wash program will finish in 6 hours.



8. TC1 LEVEL

Once the user presses Start/Pause, the timer will start counting down (Delayed State). The display will show the hours until the duration of the selected program is left, at which the display will show the wash time (e.g. 4h > 3h > 2h > 1.50) and the timer will countdown as per normal.



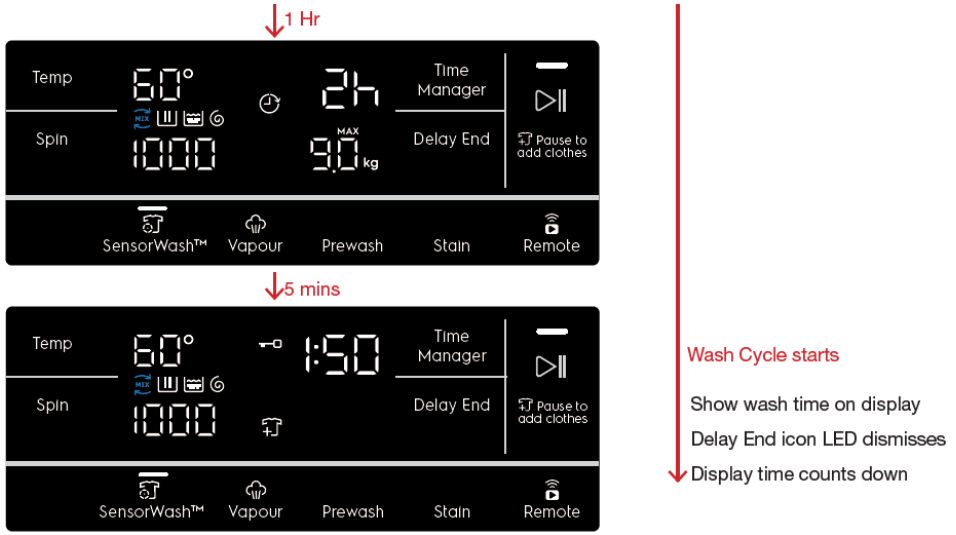
User taps on Delay End button

User taps on Delay End button

Display shows length of delay

User taps on Delay Start button

Count down timer starts



Wash Cycle starts

Show wash time on display

Delay End icon LED dismisses

Display time counts down

While in Idle State, if the user adjusts any other settings after setting Delay End, current delay timing will remain unchanged on the display. If the cycle time is changed and current delay time is no longer valid, display will update to the next valid delay time (e.g. If cycle time is 1:25 and delay set at 2h, display should automatically jump to 3h when cycle time becomes 2:05 after changing an option).

Note: Changing of program will cancel any Delay timing set and the Delay icon will be dismissed.

e.g. Cycle time is 1:10

User taps on Temp button

Display shows current delay timing

Delay Start icon still lit.

e.g. Cycle time becomes 1:50

User taps on Temp button

Display shows current delay timing

Delay Start icon still lit.

e.g. Cycle time becomes 2:10

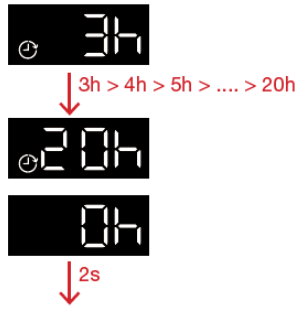
Display updates to next valid delay timing.

Delay Start icon still lit.

8.3.11.1 Cancelling Delay End

1. During setup (Idle State):To cancel Delay, press Delay End button until it cycles through the options to select 0h.

User taps on Delay End



User taps on Delay End

When display shows “0h”,

Delay End icon LED is dismissed.

Delay End is cancelled.

Display shows cycle time after 2s

2. After pressing Start (Delayed State): If the user has pressed Start/Pause button while Delay End is activated, the appliance goes into a Delayed Pause State. Pressing the Delay End button again will jump to 0h and the Delay End previously set will be cancelled.

However, if the user press Delay End button again, Delay End will be activated again starting from the first available option (e.g 2h if the cycle time is 1:05).

8.3.12 Time Dry button (WD)

Press this button to select from 10 to 250 minutes of drying.

8.3.13 Delay Start button (WD)

Tapping the Delay Start button allows user to delay the start time of the dry cycle.

The display will show the delay time set (in .mm or Xh format) and the Delay Start icon will light up together. Long tap and hold gesture activates the auto repeat function.

This option makes it possible to delay the start of the program by 30 min, 60 min or 90 min and then by every hour from 2 to 20 hours. The delay you have selected is indicated on the display. The end time will increase in order to show you the selected delay.

Note :

Must select this option after you have set the program and before you press the Start/Pause button.

The cancel the delay time at any moment, by pressing “Delay Start” touchpad repeatedly till the display shows delay time “O”, then press the Start/Pause touchpad.

8.3.14 Start/Pause button

The Start/Pause button is used to start the cycle after being conveniently set up, immediately or after the programmed delay. When the cycle/delay is already in execution, another press pauses the appliance to let the user change options and/or open the door porthole to adjust the laundry load, provided that necessary conditions of temperature and water level are met. It must be pressed again to continue the cycle/delay.

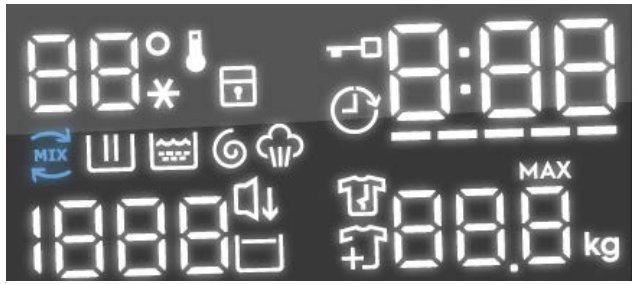
The associated LED gives an immediate feeling of the general state of the appliance:

- **it pulses with a “breathing effect”** during the programme setup with the door closed, signalling that the *Start/Pause* button is enabled to start the cycle;
- **it is steadily lit** as long as the appliance is executing a cycle or a delay phase; the door is locked;
- **it blinks** during cycle or delay pauses and when cycle ends with water into the tub (during rinse hold phase);
- **it is off** when the cycle has ended and the door has been unlocked;

● **it is off** also to indicate that the *Start/Pause* button has been disabled because the door is open (during the program setup or a delay pause) or because the knob has been turned to another position during a pause. The user must close the door and/or turn the knob back to the original position, respectively, before the appliance can be started.

8.4 Display

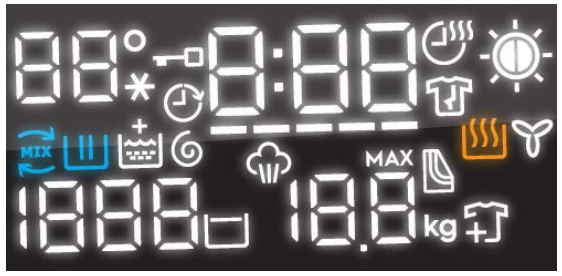
8.4.1 WM display



The display is a white-on-black LED module including:

● Two 7-segments digits plus degree and Cold symbols for temperature indication
● Three and a half 7-segments digits plus Rinse Hold and Silent (Night Cycle) symbols for spin speed indication
● Three 7-segments digits plus digital points where information about cycle duration, delay time duration and errors/warning are shown
● Three 7-segments digits plus digital point, MAX and kg symbols for recommended load / overload indication
● 5 bars for Time Manager level and indication of SensorWash estimation phase
● Child Lock status symbol
● Door lock status symbol
● Delay End symbol
● Extra Rinse option symbol
(currently not used since Extra Rinse button has its own LED)
● UltraMix phase symbol
● Wash Phase symbol
● Rinse Phase symbol
● Spin Phase symbol
● Vapour phase symbol
● Add clothes symbol
● Anticrease phase symbol
● Rinse Hold symbol

8.4.2 WD display



The display is a white-on-black LED module including:

● Two 7-segments digits plus degree and Cold symbols for temperature indication

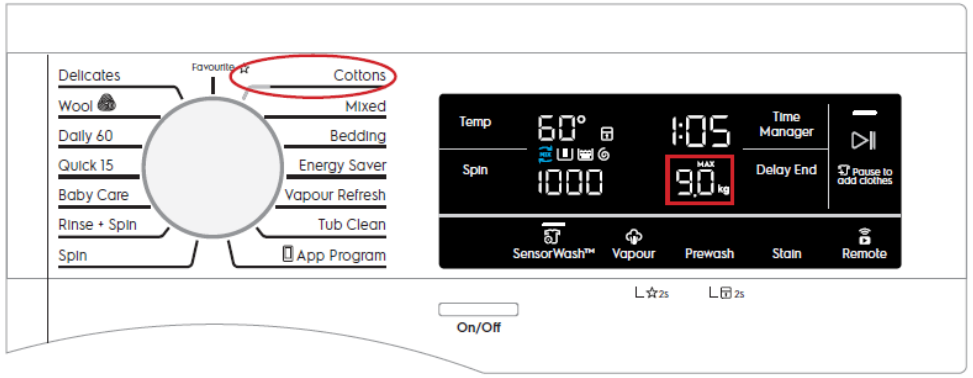
- Three and a half 7-segments digits plus Rinse Hold and Silent (Night Cycle) symbols for spin speed indication
- Three 7-segments digits plus digital points where information about cycle duration, delay time duration and errors/warning are shown
- Three 7-segments digits plus digital point, MAX and kg symbols for recommended load / overload indication
- 5 bars for Time Manager level and indication of SensorWash estimation phase
- Remote connection status symbol
- Door lock status symbol
- Delay start symbol
- Extra Rinse option symbol
  (currently not used since Extra Rinse button has its own LED)
- UltraMix phase symbol
- Wash Phase symbol
- Rinse Phase symbol
- Spin Phase symbol
- Vapour phase symbol
- Add clothes symbol
- Anticrease phase symbol
- Rinse Hold symbol
- Dryness Level symbol
- Drying phase symbol
- Cooling phase symbol

8.5 Recommended Load Advice

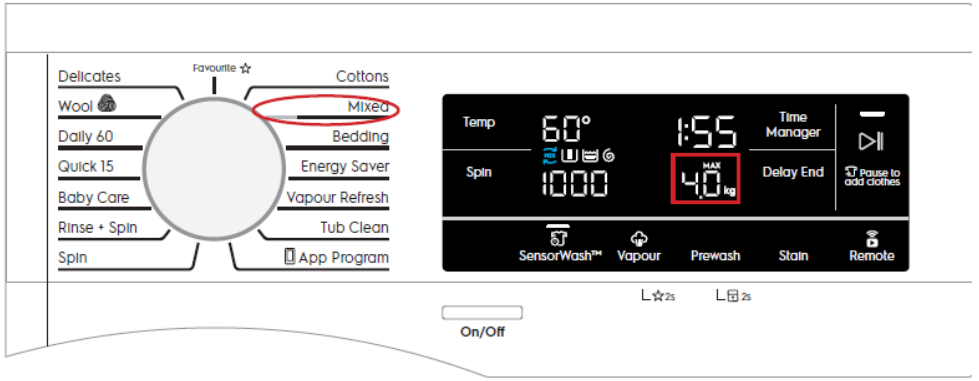
The display is able to show laundry loading advice for each program during setup. This information is shown automatically together with the program settings, as soon as a program is selected.

The information is shown regardless of whether the door is opened or closed.

Example: When Cottons is selected.



Example: When Mixed is selected



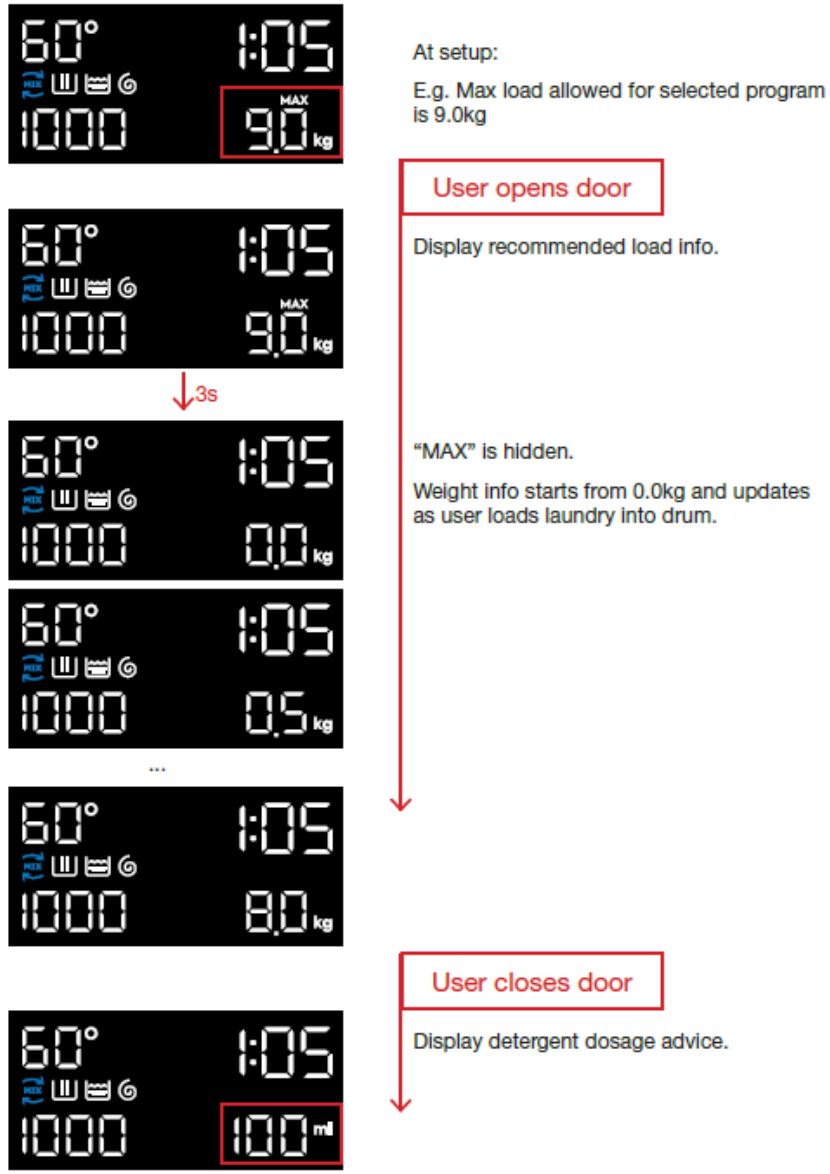
8.6 Weight Sensor

In addition to recommended load information, appliances equipped with a weight sensor may show information about the laundry currently loaded into the drum. Weight information is displayed in kilograms, with a precision of half a kilogram. When the appliance is On,

- If the door is closed, the display will show the recommended load information at setup and updates according to selected program until the door is opened.
- When door is opened, the display will show the recommended load information for 3 seconds before it goes to show the weight sensor information. If the user switches wash program midway loading the laundry, display will show the recommended load information related to the new selected program for 3 seconds before reflecting the current weight sensor information.
- When door is closed, weight sensor information then changes into detergent dosage information.

The weight sensor is always reset to 0.0kg when the appliance is powered Off and On again. If there is already laundry in the drum before this, it will not be taken into account when showing current load information.

When the cycle is started, weight and dosage information will no longer be displayed.



8.7 Detergent Dosing Advice

Appliances equipped with a weight sensor can show detergent dosing advice based on the measured load, as defined by R&D. It can be displayed as either percent (%) or milliliter (ml) if user has set a valid value in the Detergent Dosing Setting menu.

The detergent dosing advice replaces the weight sensor information when the door is closed while the appliance is powered On. When the cycle is started, weight and dosage information will no longer be displayed.

User can define a certain amount of detergent (in ml) to correspond to the percentage dosing advice. This will then be displayed instead of the percentage when the door is closed.

To go into Detergent Dosing Settings mode, tap and hold **Vapour** and **Prewash** for >3s.

User can then use the

WM : Time Manager and **Delay End** buttons

WD : Dryness Level and **Time Dry** buttons

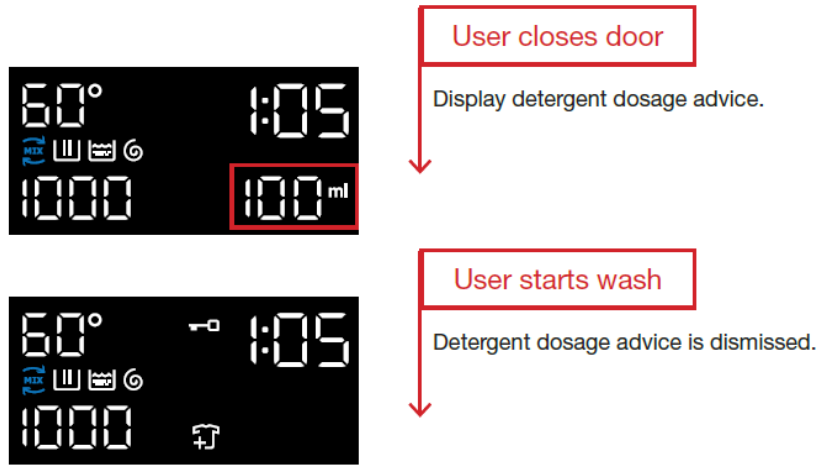
to scroll up and down the list of available detergent settings or set it as OFF (default setting). When the setting is OFF, detergent dosing advice will be shown in percent. (set 100% equivalent 0 ml to 330 ml.)

To save and exit the settings mode, tap and hold

WM : Prewash and **Stain** for >3s

WD : Prewash and **Delay Start** for >3s

or wait for 5 seconds, and the appliance will return to setup state.

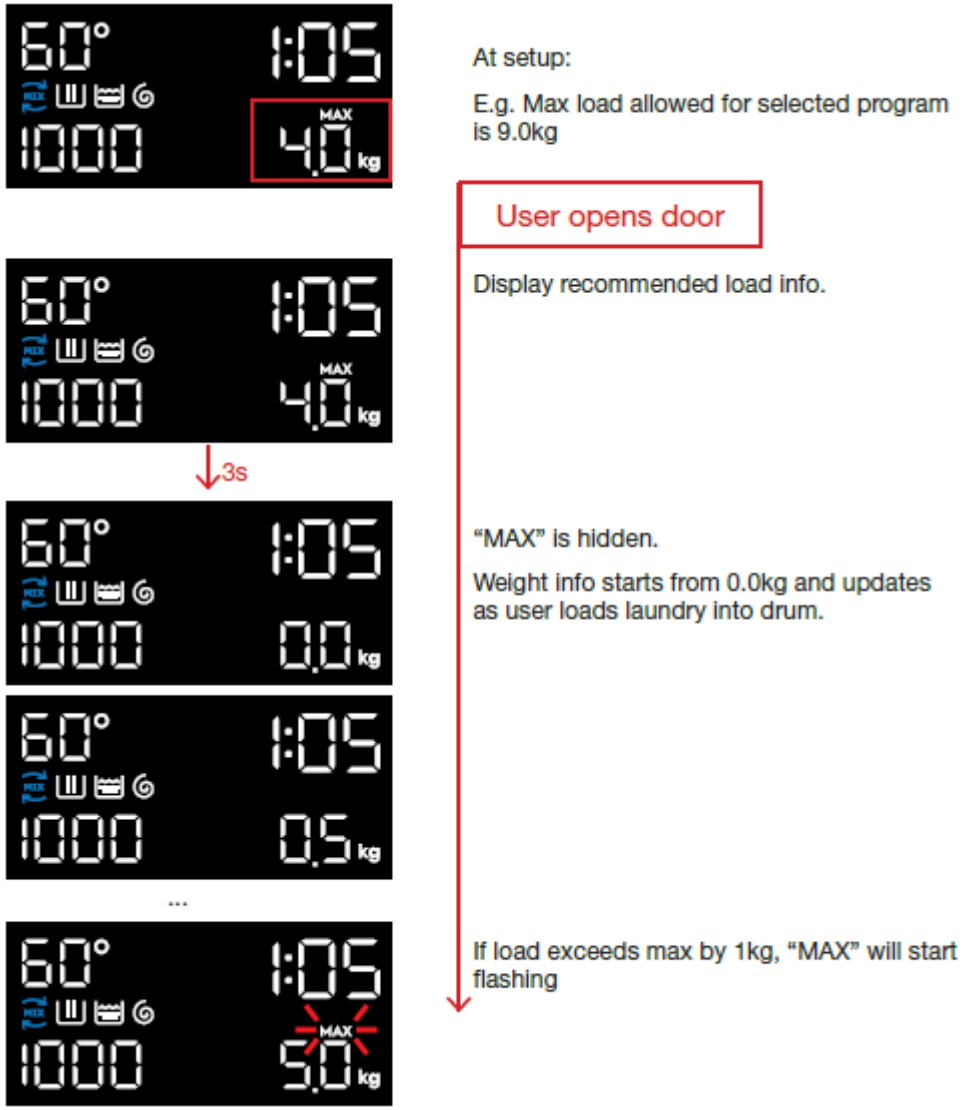


8.8 Overload Warning

If the user loads enough laundry to exceed the maximum recommended load for the selected program by at least 1kg, the appliance will show an overload warning. For example, if a user loads 9kg for a 8kg program, they will see a warning, but not if the user loads 8.5kg even if this is more than the maximum recommended load.

In this case, the display will show the maximum recommended load and the symbol “MAX” will start flashing (at a rate of 0.4s) as a warning to the user. “MAX” will flash continuously as long as the load in the drum is more than recommended load, even after the door is closed.

8. TC1 LEVEL



At setup:

E.g. Max load allowed for selected program is 9.0kg

User opens door

Display recommended load info.

"MAX" is hidden.

Weight info starts from 0.0kg and updates as user loads laundry into drum.

If load exceeds max by 1kg, "MAX" will start flashing

User can choose to unload some of the laundry in the drum until the load goes under the maximum recommended load, at which the symbol "MAX" is dismissed; or continue to start the wash (and compromise wash performance). When the cycle is started, "MAX" will be hidden.

In the case when user switches wash program mid-way loading the laundry to one that has a lower recommended load, if current load has exceeded the updated recommended maximum load, the display will show the new recommended load for 3 seconds and then change to weight sensor information with "MAX" flashing.

9. Operation

9.1 Start Cycle

After selecting the program and closing the door, pressing the Start/Pause button will lock the door and starts the wash cycle. The Start/Pause LED turns steady and display time then decreases and is updated minute by minute.

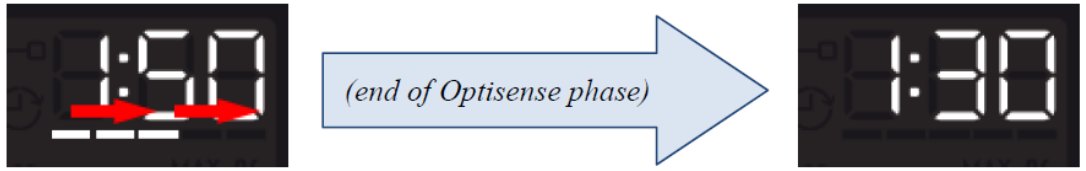
When cycle is in progress, all buttons except the Start/Pause button will be disabled. Turning the knob to other program positions will trigger an invalid feedback.

For appliances with LED digital knobs the LED of the program that is running will not change even when the user turns the knob, but "---" will still flash on the display.

9.2 Optisense Phase

OptiSense can optimise the cycle based on the load to shorten the wash cycle when possible.

the laundry load is estimated by monitoring the motor movement between the start of the cycle and the first water filling (~30seconds). During this time, the Time Manager bars play a simple animation.



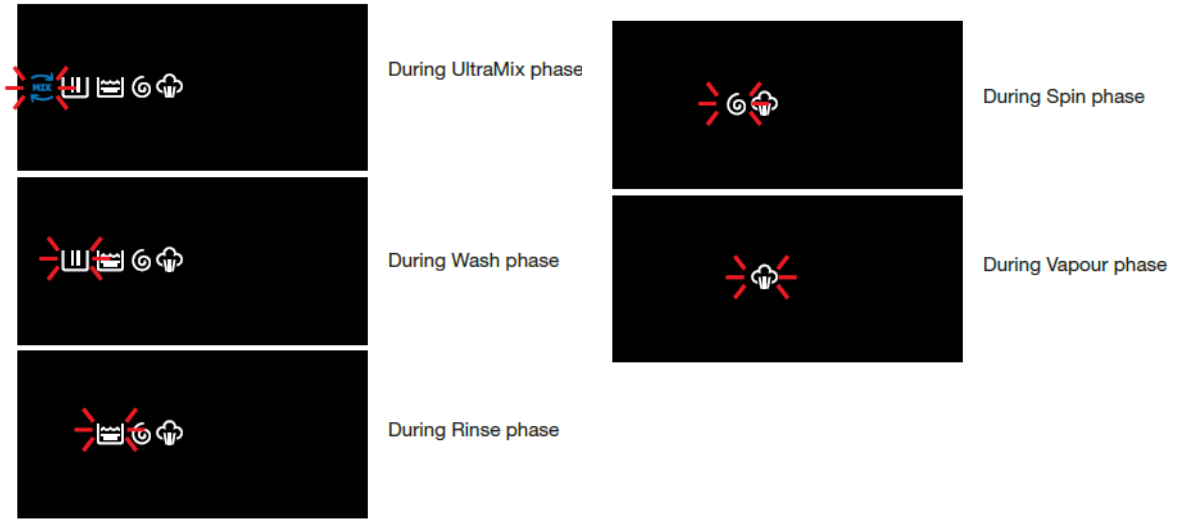
After calculation, motor stops and the cycle waits further 30 seconds before loading water and starting washing. On display, new cycle duration is updated and the Time Manager bars go off.

9.3 Phase Indication

Main wash phases (UltraMix, Main Wash, Rinse, Spin, Vapour) will be indicated by the blinking of the wash phase indicators. During setup, the wash phase icons will light up on the display if they are applicable to the selected program and settings.

When the wash cycle has started, each phase indicator will blink.

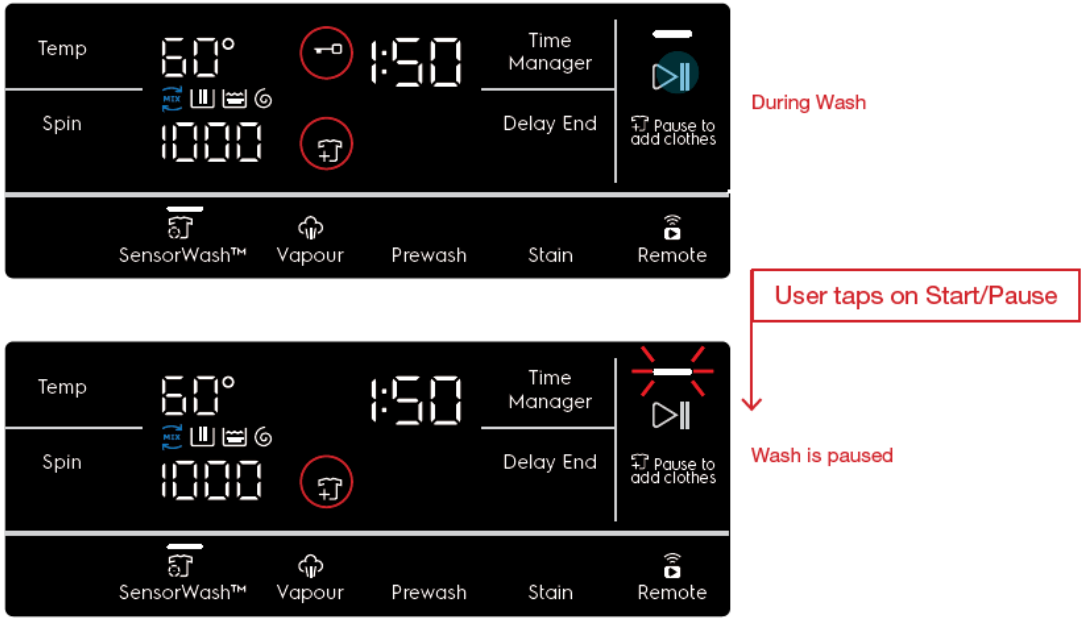
During the duration when that particular phase is active. The icons will then be dismissed one by one after the end of each phase.



9.3 Add Clothes

During the first few minutes of the wash, the Add Clothes icon LED will be lit up to indicate that the user is able to pause the appliance to add more laundry into the wash.

The door is unlocked and the Door Lock icon LED will be dismissed.



If Add Clothes is not possible, the Add Clothes icon will not show and pressing Pause will not unlock the door.

9.4 Pause Cycle

Pressing the Start/Pause during the wash will pause the appliance. During paused state, wash options may be changed but not the program.

	STATES	DISPLAY	START/PAUSE LED
1.	Idle State	 • All LEDs static	 • LED pulses
2.	Stand-Off State	• All LEDs Off	• All LEDs Off
3.	Execute State	 • Timer counts down (Main Wash phases) • Current wash phase icon LED blinks at rate of 1s	 • LED static
		 • After timer goes to "0.00" (Anticrease phase), • Shows "End" and Door Lock icon • Anticrease icon blinks at rate of 1s	 • LED static

	STATES	DISPLAY	START/PAUSE LED
4.	Paused State	 • LEDs static	 • LED blinks at a rate of 1s
5.	Delayed State	 • Shows no. of hours delayed • Delay End icon blinks at rate of 1s	 • LED static
6.	Delayed Paused State	 • Shows no. of hours delayed • LEDs static	 • LED blinks at a rate of 1s
7.	End State	 • Shows “End” • LEDs static	 • LED off

9.5 Cycle End

When the cycle is completed, the timer goes to “0:00” and the segmented digits will then show “End”. All other LEDs on the control panel, including the LEDs around the knob (on TC 1-2) and the option buttons, will be turned off.

If the buzzer is enabled, Tone CycleEnd will be played 6 times in this sequence: play CycleEnd tone

During this time, if the user touches any button on the control panel or opens the door, sound will be cut immediately. If buzzer is disabled, there will not be any sound after the cycle ends.

9.6 Anticrease Phase

At same time, anticrease phase will start and run for 1-2 minutes . The Anticrease indicator will appear and blink at a rate of 1s during the time anticrease phase is running. During this period, Start/Pause LED will still remain static and the door remains locked until the anticrease phase has ended completely and the appliance goes into End State.

User can also terminate the anticrease phase by:

- pressing On/Off button - machine goes into Stand-Off State
- pressing Start/Pause button - machine goes into End State. Door is unlocked, Door Lock and Anticrease icons are dismissed but “End” remains on the display.

• Pressing any button (except for On/Off) during End State will bring the appliance back into Idle/ Setup mode and the last wash program and settings will light up on the user interface.

However, if there is no activity during the End State, the appliance will go into Stand Off mode and all LEDs will be switched off. Upon turning it on again, it will resume the End state.

1. End of Cycle, during Anticrease phase

Display shows “End”, door remains lock and Start/Pause LED is static. All other LEDs are dismissed except:

- Anticrease icon - blinks at rate of 1s

2. End of Anticrease phase (End State)

Display shows “End”, door unlocked. All other LEDs are dismissed.

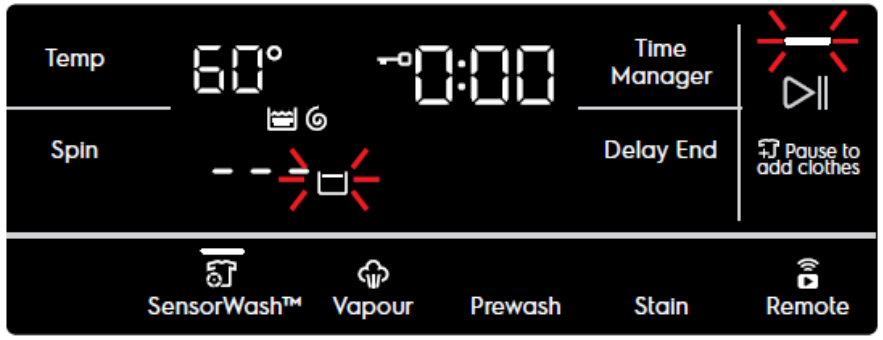
9.7 Rinse Hold

If the user has set Spin speed settings as Rinse & Hold, at the end of the cycle,

- If buzzer is enabled, it will sound.
- Segmented display will remain at “0.00”.
- Rinse & Hold icon indicator will blink at a rate of 1s
- Start/Pause LED will blink at a rate of 1s (like in Paused State).
- Selected program LED and settings remain lit.
- Door remains locked.

At this point, user may

1. Adjust spin speed settings by pressing Spin button. All other options buttons are disabled. Turning of knob will result in an invalid feedback.
2. Press Start/Pause to continue the wash with the final spin phase. The segmented display will show updated remaining time. If no spin speed is selected, the default spin setting (depending on selected program) will be selected automatically.



10. Connectivity

The Diamond Plus/Emerald range TC 1-2 levels has the NIUX module installed which allows the user to connect the appliance to the hub app and remotely control or monitor the states of the appliance.

This section describes features and UI behaviours that are applicable only to the connected models.

10.1 Connectivity States

The table shows the different connectivity readiness state of the appliance based on various conditions.

STATE	APPLIANCE WIFI	HOME NETWORK CREDENTIALS REGISTRATION STATUS ON APPLIANCE	HOME NETWORK CONNECTION	CLOUD CONNECTION	APPLIANCE WIFI INDICATOR LED
1	Off	-	-	-	Off
1.1	Starting	-	-	-	 Blinking
2	On	Not registered	-	-	
2.1	On	Timeout	-	-	
3	On	Registered	Connecting	-	
3.1	On	Registration fail	Not Connected	-	
4	On	Registered	Connected	Online	 On/Steady
5	On	Registered	Connected	Online	

10.2 Machine States (When Remote Start is Activated)

Machine states on a connected appliance when Remote is activated:

1. Idle State
   - After appliance is powered on and Remote Start activated
   - Allows user to start wash from the App
2. Stand-By State
   - Appliance goes into Stand-off state after 5 mins of inactivity when in Idle state.
   - Appliance is still connected to App
3. Stand-Off State
   - Appliance goes into Stand-off state after 5 mins of inactivity when in End state.
   - Remote Start is turned Off.
4. Execute State
   - Wash cycle starts.
   - Buzzer will sound after wash cycle ends, at the start of anticrease phase
5. Paused State

   4a. Paused State (Triggered on machine) - Wash cycle paused by pressing Start/Pause

   4b. Paused State (Triggered on App) - Wash cycle paused by pressing Pause on the App
6. Delayed State
   - Delay End is activated before starting wash cycle.

7. Delayed Pause State

6a. Delayed Pause State (Triggered on machine) - When user pauses appliance after Delay End is activated by pressing Start/Pause

6b. Delayed Pause State (Triggered on App) - When user pauses appliance on the App after Delay End is activated

8. End State

- Wash cycle & Anitcrease phase completed
- Appliance is still connected to App
- After 5mins of inactivity, goes to Stand-Off State

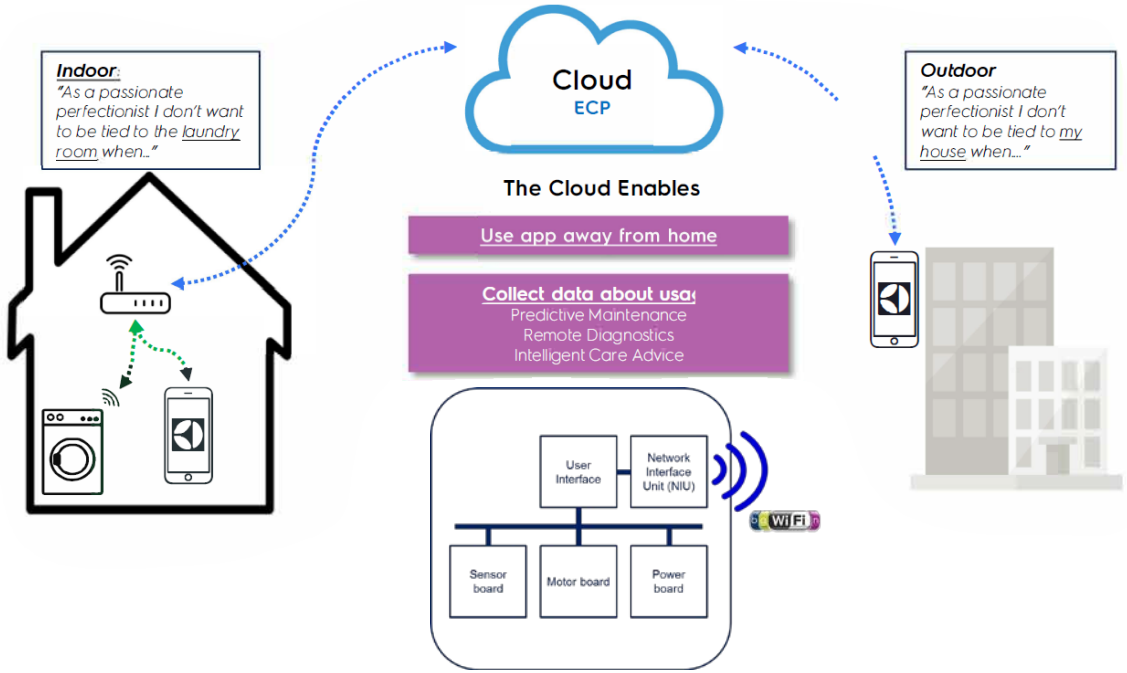
The table below shows how the Remote Start indicator on the display and Start/Pause pilot LED behave in each state after the Remote Start is triggered:

	STATES	DISPLAY	REMOTE START BUTTON	START/PAUSE LED
1.	Idle State	 • All LEDs static • Remote Start icon On & blinks at rate of 1.2s	 • All LEDs static	 • LED pulses (fade 0% > 100% in 0.6s, stay lit for 0.4s, fade out 100% > 0% in 0.6s, stay dismissed for 0.4s)
2.	Stand-By State	 • Wi-Fi icon remains lit • Remote Start continues blinking at rate of 1s • Door is locked.	• All LEDs Off	• All LEDs Off

	STATES	DISPLAY	REMOTE START BUTTON	START/PAUSE LED
3.	Execute State	 • Timer counts down (Main wash phases) • Current wash phase icon LED blinks at rate of 1s • Remote Start icon static	 • LED static	 • LED static
		 • After timer goes to “0.00” (Anticrease phase), • Shows “End” and Door Lock icon • Anticrease icon blinks at rate of 1s	 • LED static	 • LED static
4a.	Paused State (Triggered on machine)	 • LEDs static • Door icon dismiss (if possible to unlock) • Remote Start icon dismissed (Remote Start is deactivated)	 • LED off	 • LED blinks at a rate of 1s
4b.	Paused State (Triggered on App)	 • LEDs static • Door icon stays (door will not unlock)	 • LED blinks at a rate of 1s	 • LED blinks at a rate of 1s

	STATES	DISPLAY	REMOTE START BUTTON	START/PAUSE LED
5.	Delayed State	 • Shows no. of hours delayed • Delay End icon blinks at rate of 1s	 • LED static	 • LED static
6a.	Delayed Pause State (Triggered on machine)	 • Shows no. of hours delayed • LEDs static • Door icon dismiss • Remote Start icon dismissed (Remote Start is deactivated)	 • LED off	 • LED blinks at a rate of 1s
6b.	Delayed Pause State (Triggered on App)	 • Shows no. of hours delayed • LEDs static • Door icon stays (door will not unlock)	 • LED blinks at a rate of 1s	 • LED blinks at a rate of 1s
7.	End State	 • Shows “End”, Wi-Fi & Remote Start icon, LEDs static • Door icon stays (door will not unlock)	 • LED blinks at a rate of 1s	• All LEDs Off

10.3 Wi-Fi

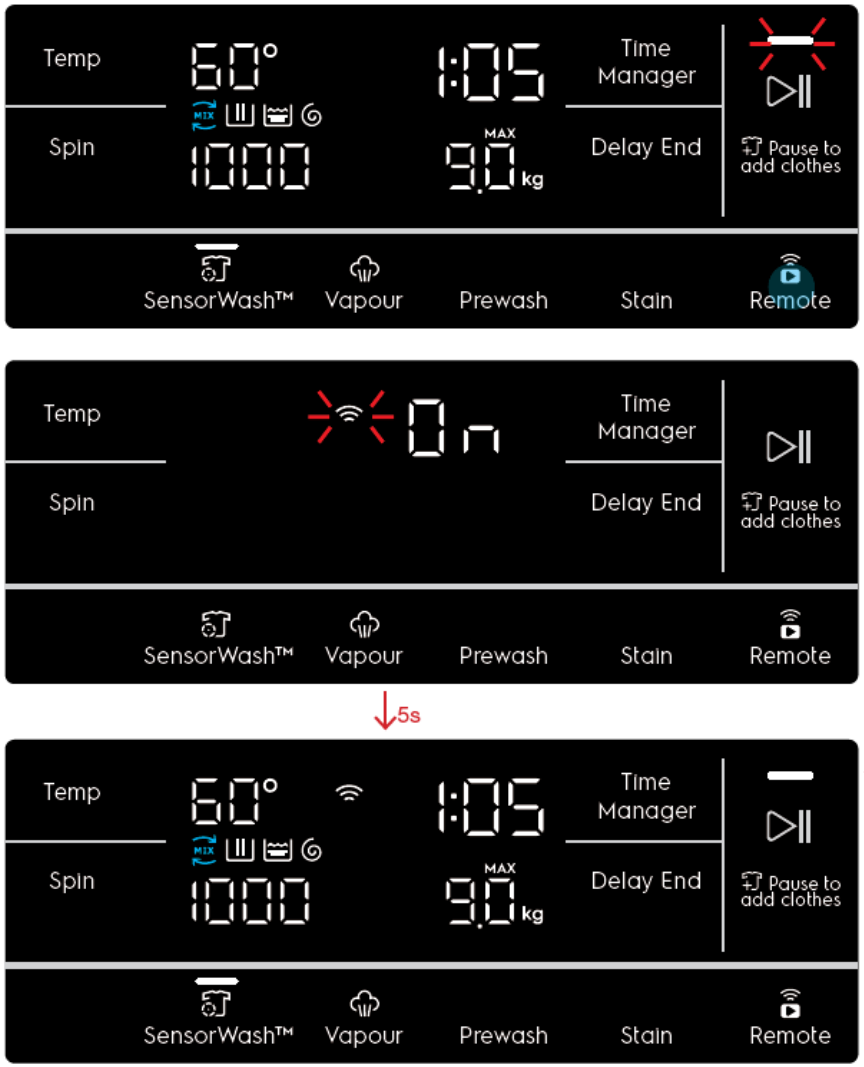


10.3.1 Turning Wi-Fi On / Off

By factory default, the Wi-Fi feature is Off. The user can toggle the Wi-Fi ON by pressing and holding “**Remote Start”** button for 3 seconds.

- The TTE digits show the text “On” (stays for 5 seconds)
- The Wi-Fi icon will start blinking to indicate that the appliance is starting up the connection. The Wi-Fi icon continues to blink until it is connected to the home network.

If it is the first time the Wi-Fi is enabled, the Onboarding process will start automatically.



User press and hold Remote Start button for 3s

- KeyAccept Tone

Upon long press (t=3s),

- KeyConfirm Tone

Turn On Wi-Fi

- LED Segments "On"
- Wi-Fi icon blinks
- All other LEDs are Off

Connection to Wi-Fi Successful

- Wi-Fi icon static

Note: Wi-Fi will always be On even if the machine is powered Off and back On again, until the user turns it Off.

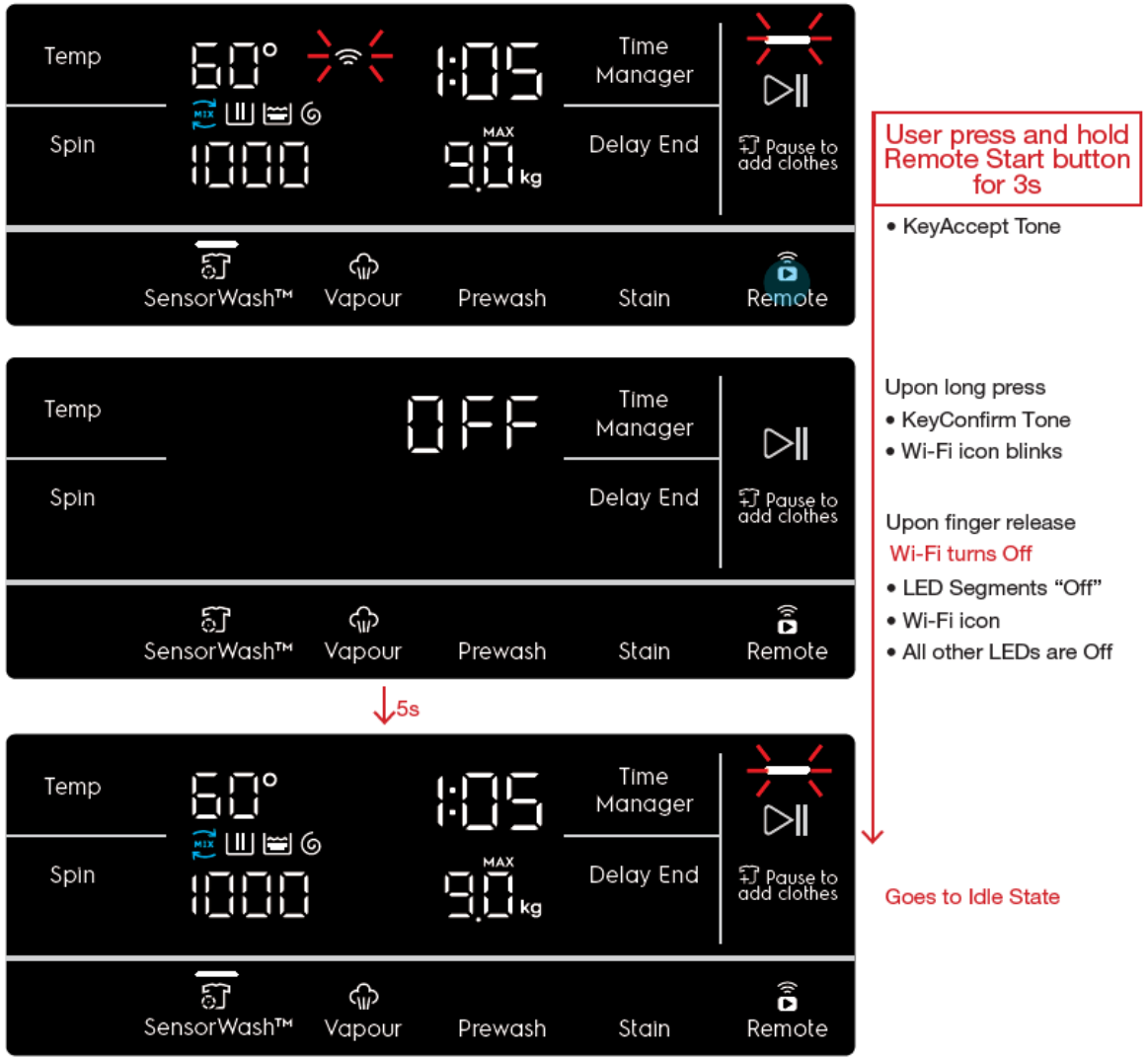
Inactivity During Idle State Goes to Stand-By State

Inactivity for 5 minutes will switch the appliance to Stand-By State. All LEDs will go Off, only Wi-Fi icon and Remote Start icon remain on the display, indicating that Remote Start is active and machine is waiting for an action from the App. At this time, any activity on the control panel (i.e. on knob/ touch buttons) or on the App (i.e. changing of settings) will change the appliance to Idle State, showing the last status. Pressing on the touch buttons will only "wake up" the UI, but not trigger any action.

Note: There is no time out for Stand-By State. Remote Start will always be On until user powers Off the appliance.

Turning Off Wi-Fi

To toggle Off Wi-Fi, press and hold Remote Start button for 3 seconds. Upon tap of Remote Start button, KeyAccept tone will play. After 3 seconds, when Wi-Fi Off is triggered, KeyConfirm tone will play, the Wi-Fi icon will be dismissed and the TTE digits show the text "OFF" for 5 seconds. After which, the display goes back to Idle State.



10.3.2 First Time Wi-Fi Setup (Onboarding)

The onboarding process will automatically start when it is the first time the Wi-Fi is enabled, or after the network credentials are reset. Upon turning on Wi-Fi,

- KeyConfirm tone will play.
- The display hides all other settings and icons, showing only "On" and Wi-Fi icon. All LEDs on Knob, Option buttons and Start/Pause button will also be Off.
- Wi-Fi icon starts blinking, and keeps blinking throughout the entire Onboarding process, until the appliance is connected to the home network. Until the access point is open, only the blinking Wi-Fi icon is visible in the display.
- When the access point is open, the TTE digits show "AP" (and the Wi-Fi icon keeps blinking).
- When the credentials have been saved, the appliance will return to Idle State, and try to connect to the home network.
- Once connection is successful, play KeyConfirm tone (only for Onboarding). Wi-Fi icon will stop blinking and stay lit steadily.

10. Connectivity

User press and hold Remote Start button for 3s

Upon tap
- KeyAccept Tone

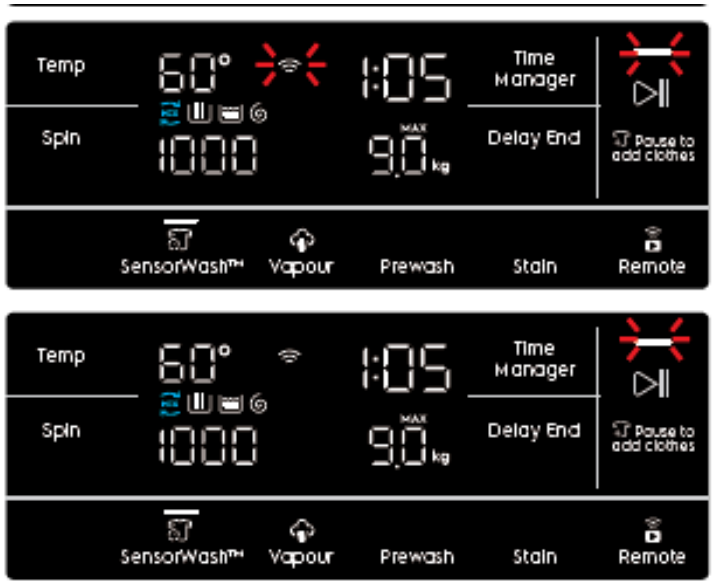
Upon long press
- KeyConfirm Tone

Turn On Wi-Fi
- LED Segments "On"
- Wi-Fi icon blinks
- All other LEDs are Off

5s

- Wi-Fi icon continues blinking

Access Point open
- LED Segments "AP"
- Wi-Fi icon continues blinking



Credentials accepted and saved
- Goes back to Idle State
- Wi-Fi icon continues blinking

Connecting to Home Network...

Connection to Wi-Fi Successful
- Wi-Fi icon 100% static

Note: During the time when Wi-Fi and access point is turning On (until just before it goes to Idle State), all touch buttons are disabled. Pressing any of the invalid buttons will play the KeyInvalid tone, but without showing "---" on the TTE digits.

Access Point Time Out

For safety reasons, the access point will only stay open for a limited time (3 minutes). If the appliance has received no credentials, it will time out, turn the access point (and Wi-Fi) OFF and return to setup.

Failure to Connect

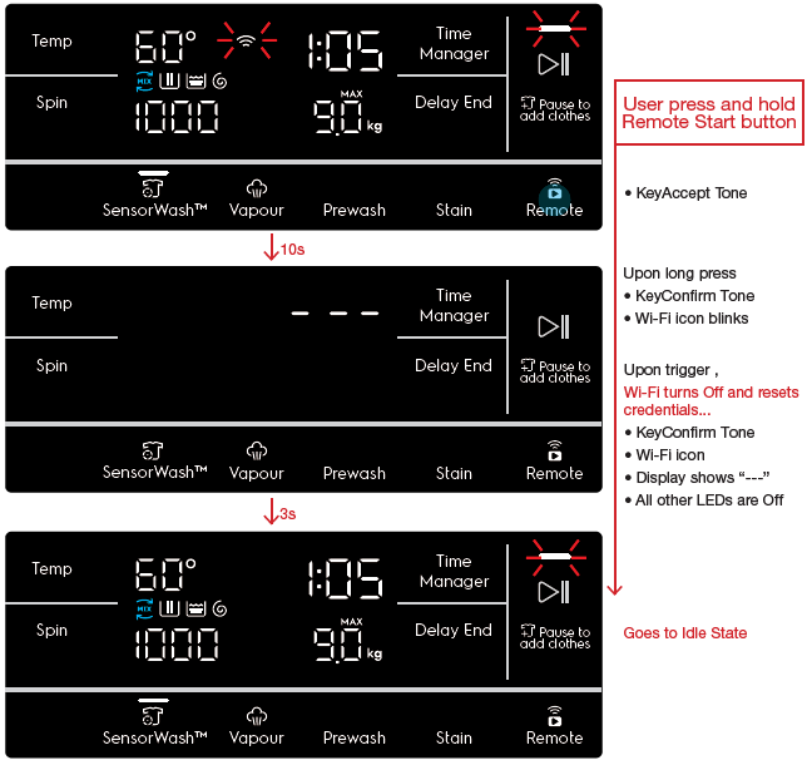
As long as the appliance is ON , it will keep trying to connect with the saved credentials until the user turns Wi-Fi OFF or resets the credentials, no matter if the connection is successful or not. In this case, Wi-Fi icon will keep blinking.

10.3.3 Resetting Credentials

The user can reset the network credentials by pressing and holding Remote button for 10 seconds.

This will also turn the Wi-Fi Off. Upon long press of Remote Start button, the Wi-Fi icon will start blinking. When Network Reset is triggered, KeyConfirm tone will play, all LEDs on the control panel will be dismissed and the TTE digits show the text “---” for 3 seconds before returning to Idle State.

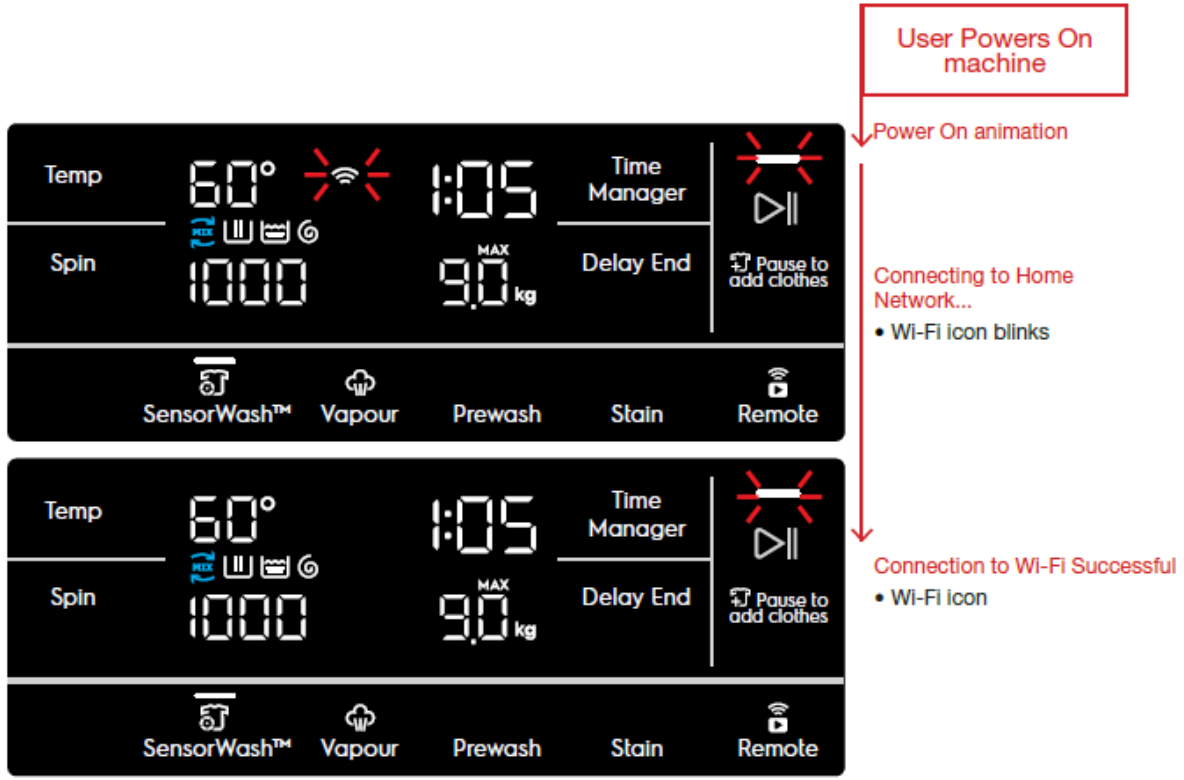
After resetting the network credentials, the next time the user turns the Wi-Fi ON, the Onboarding process will start automatically



10.3.4 Auto Connection to Registered Network

Once the appliance has been successfully set-up and registered to the home network, every time it is powered On, it will try to connect to the network automatically.

Note: Unlike during Onboarding, there will not be any sound when Wi-Fi connection is successful.



10.4 Remote Start

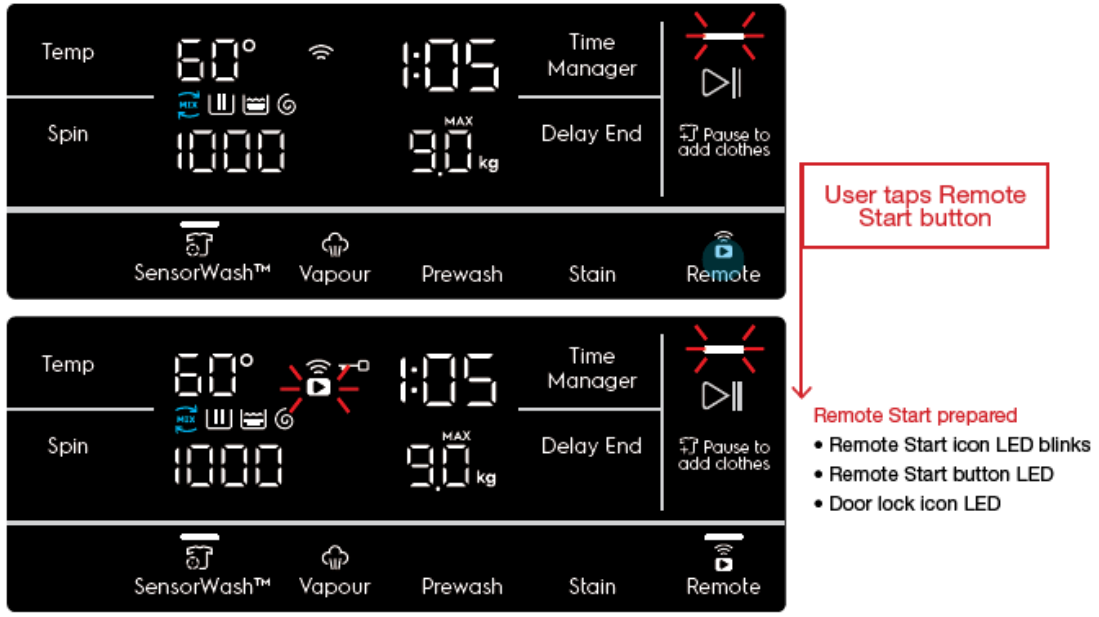
Remote Start is required to be activated to enable starting/pausing of the appliance remotely.

10.4.1 Activate Remote Start

Once the appliance is connected to a Wi-Fi network, Remote Start can be triggered by tapping on the Remote Start button to toggle on remote control function.

When a cycle is started locally, with or without Delay End activated, remote control function is also activated immediately.

Turning Remote Start On locks the appliance door and prepares it to be remotely started via the Electrolux App. User will still be able to edit settings on the control panel and the App would mirror the settings accordingly.



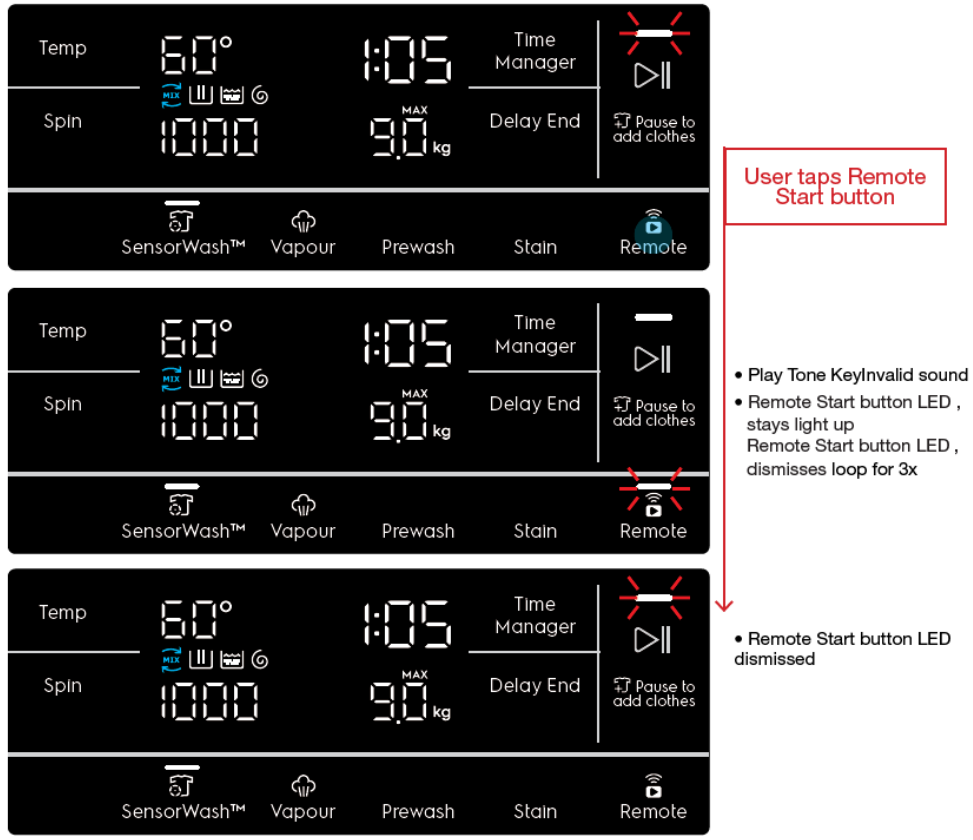
Note:

- When the door is open, remote functions are disabled.
- Remote Start is Off every time machine is powered Off and On.

Only connection to the Wi-Fi network is automatic.

If Wi-Fi is not On

The Remote Start button can only be enabled if Wi-Fi is turned On. Tapping on Remote Start button will give a Tone KeyInvalid feedback and the Remote Start button LED will flash 3 times.



10.4.2 Deactivate Remote Start

To deactivate Remote Start, user can tap on Remote Start button (before cycle has started). When Remote Start is deactivated, the appliance door will unlock.

10.4.3 Starting or Pausing a Cycle

With Remote Start On, user can start or pause a wash cycle from the App.

There are 2 scenarios when pausing a cycle:

1. If the user pauses the wash cycle via the App, the wash is paused but the door remains locked.To unlock the door (if possible), he would need to press Remote Start button at the machine.Pressing Start/Pause button will resume wash.
2. If the user pauses the wash cycle locally on the machine, Remote Start is deactivated and remote control function is disabled. At this time, user cannot continue the cycle from the App.

The appliance then goes to a Paused State with Remote Start Off. The next press on the Start/Pause would lock the door, activate Remote Start and continue the wash cycle.

10.4.4 End Cycle

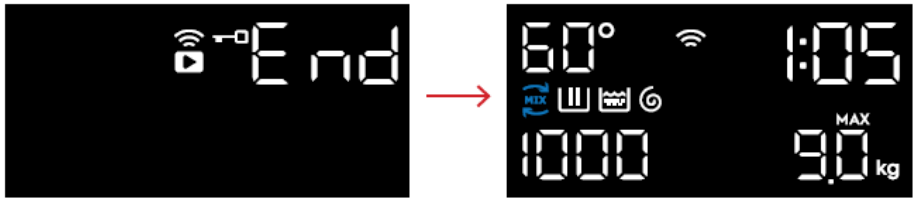
The appliance goes into an End State after the anticrease phase is complete. Door remains locked and Remote Start is still On for 15 minutes if there is no activity.

End State going into Stand-Off State

After 15 minutes of inactivity, it then goes into a Stand-Off state automatically. At this moment, Remote Start is turned Off and the door is unlocked.

End State going into Idle State

Before it goes into Stand-Off state, any activity on the control panel (i.e. on knob/touch buttons) or on the App will change the appliance state from End State to Idle State with the Remote Start turned Off.



Example: When user presses any button during End State

10.5 App-Only Programs

The connected appliances, there are additional programs that users can select which are not listed in the programs on the rotary knob but made available on the App.

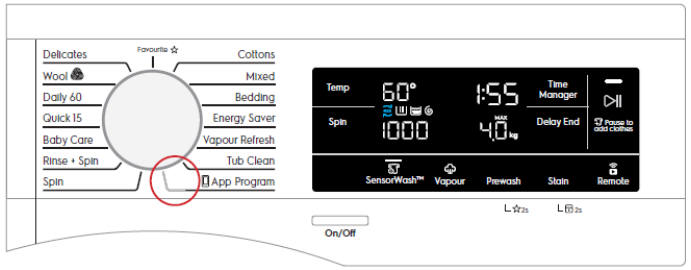
the following programs are identified as App-only programs:

- Outdoor (factory default)
- Anti Allergy
- Towels
- Curtains
- Soft toys
- Working Clothes
- ✸Store on Appliance

Note: App Program cycle cannot be saved as a Favourite on the appliance.

10.5.1 Running App Program from appliance

To run an App-only cycle locally on the appliance, user can turn the knob to select App Program on the bottom right position. This would select the last set App program that the user has “sent” from the App and the display would update the cycle duration and settings accordingly. By factory default, the Outdoor program will be selected if the knob position is turned to App Program.



10.5.2 Running App Program from APP.

User can choose to run any App-only program from the App, regardless of what program is set as App Program on the appliance.

The behaviour is the same as when any program is selected on the App. When an App Program cycle is selected on the App, the App Program LED indicator on the knob will light up and the display will update to the new cycle duration and setting.

10.5.3 Replacing App Program on appliance

User is also able to replace the default Outdoors program with another App-only program on the on the machine, so that he can run the program without turning On Remote Start. This can be done through the APP.

For example, if the user has selected another App program (e.g. Anti Allergy) and chose to “Store on Appliance” push from the App, the appliance will recall the Anti Allergy program and its settings the next time user selects App Program on the machine.

10.6 OTA (over the air) Updates

Firmware updates for the NIUX can be applied over the air. Before downloading and applying the update, the user needs to authorize it. This is done in the APP.

- The user is prompted (in the APP) to initialize the update.
- If a cycle is running, the user gets a notification (in the APP) that the update will be applied when the cycle is finished.
- When the update is installing, the UI on the appliance is not accessible. The display will show only the Wi-Fi symbol and “UPd”.
- There is no notification on the appliance if the update is successful.
- If the update fails, there is an error notification on the appliance (display will show “Err”, but no further action may be performed by the user on the appliance itself. Pressing any key or turning the knob returns the appliance to the Idle State.
- Feedback from the OTA update process is only ever displayed in the EOC state, never during setup.

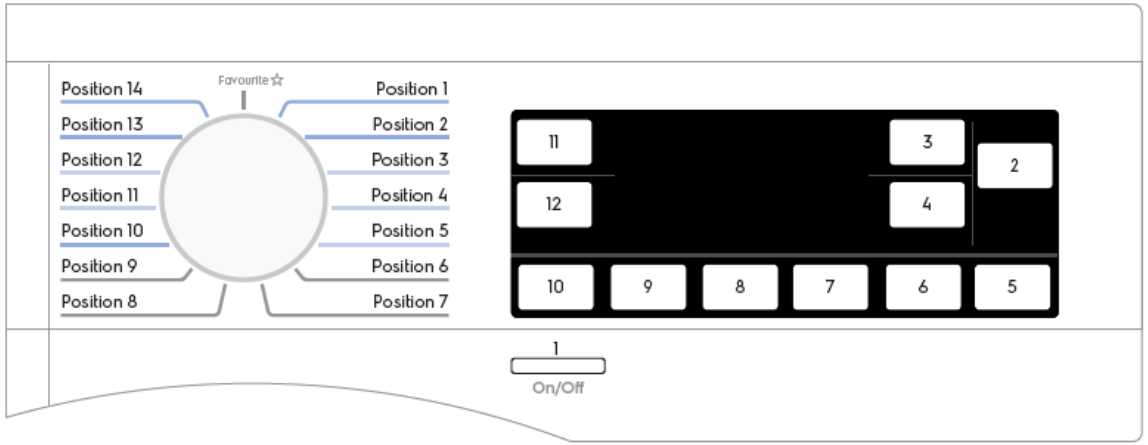
During installation

If an update fails

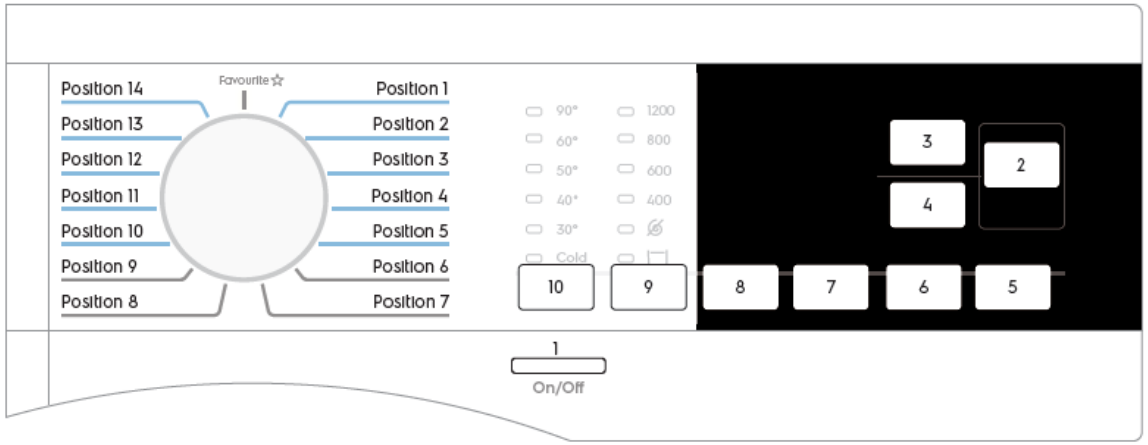
11. Hidden Functions

The following key combinations are available in UI.

TC 1-3



TC 4



FUNCTION	KNOB POSITION	1ST BUTTON	2ND BUTTON	ACTION
Enable/ Disable Buzzer sound	-	9	8	Tap and hold for >3s
Demo Mode	3	4	2	Tap and hold for >5s
Diagnostic Mode	1	4	2	Tap and hold for >5s
Enable/ Disable UltraMix (TC1-3)	-	11	12	Tap and hold for >3s
Enable/ Disable UltraMix (TC4)	-	10	9	Tap and hold for >3s
Detergent Dosing Settings (TC 1 only)	-	8	7	Tap and hold for >3s
Turn On/Off WiFi (TC 1-2 only)	-	5	-	Tap and hold for >3s
Resetting Network credentials (TC 1-2 only)	-	5	-	Tap and hold for >10s

11.1 Enable/ Disable Buzzer Sound

The buzzer sound can be disabled by the user (except for event of appliance malfunction).

To disable or enable buzzer sound,

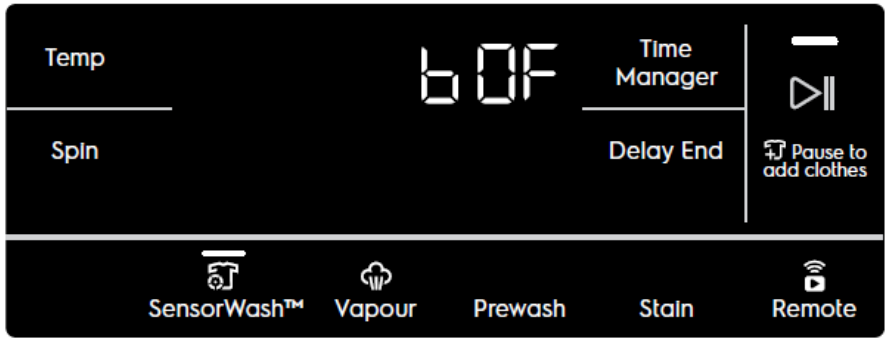
TC1-3 : tap and hold Button “8” and “9” for >3 seconds.

TC4 : tap and hold Button “9” and “10” for >3 seconds.

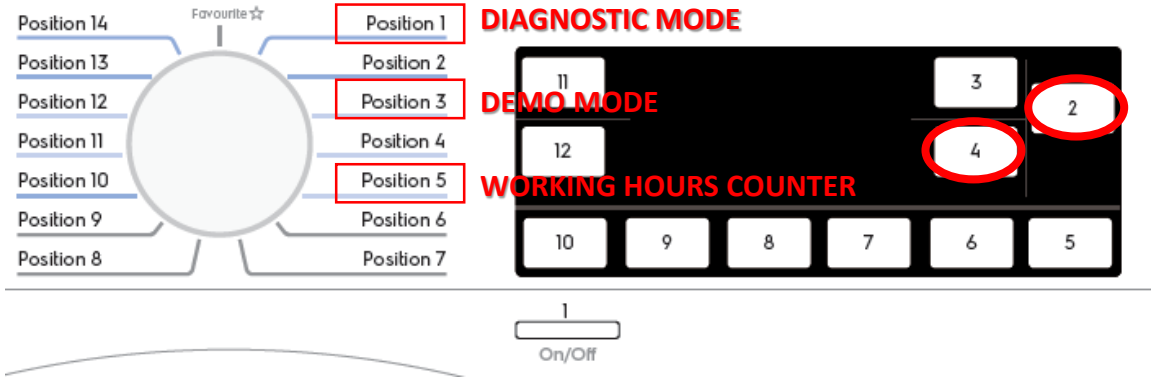
- play Tone KeyConfirm and display “bOF” (when buzzer is disabled) for 2s.
- play Tone KeyAccept and display “bOn” (when buzzer is enabled) for 2s.

11. Hidden Functions

When buzzer is disabled, pressing On and Off to power up or off the appliance will not play the PowerUp and PowerOff sound. Tone KeyAccept is played instead. After a wash cycle is completed, Tone CycleEnd will not be played as well.



11.2 DIAGNOSTIC MODE/DEMO MODE/WORKING HOURS COUNTER



Note : Time to set from machine switching on 10 sec.

Position 1 : DIAGNOSTIC MODE

DIAGNOSTIC MODE is selected by default at machine switching on, hence to enter in Diagnostic mode just press the diagnostic buttons combination.

Position 3 : DEMO MODE

To enter Demo mode: turn the selector knob to the 3rd position

Position 5 : WORKING HOURS COUNTER

To enter WORKING HOURS COUNTER : turn the selector knob to the 5th position

11.2.1 WORKING HOURS COUNTER

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

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

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

11. Hidden Functions

This time is displayed with a sequence of two digits at a time: the first two digits indicate thousands and hundreds, the second two digits indicate tens and units. For example, if the operating time is 6,550 hours, the display will show the following sequence:

	Phase 1	Phase 2	Phase 3
Display			
	For 2 sec it displays Hr	For 2 sec the following digits are displayed: • Thousands - 6 • Hundreds - 5	For the next 2 sec the following digits are displayed: • Ten - 5 • Unit - 0

At the end of phase three (after the tens and units are displayed), the cycle is repeated.

To return to normal mode, either: switch the appliance off or press a button or turn the selector knob.

11.2.2 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 of the user mode one.
- During cycle execution all times are shorter.
- No water load/drain is executed: it means that if it's necessary to show machine running with water inside the drum, it's loaded by hand and never drained (no spin phases are executed in this case). All the user interface functionality is shown as in the normal condition (time to end ...).

11.2.2.1 ENTERING DEMO MODE

As described before, to enter in this mode the procedure is the following:

● Switch on the machine via On/Off button if present or turn program selector knob out of Off position and do not press any other button;

● Turn the selector in the 3rd position CW;

in case of Hi-Fi type selector, the 3rd upper light of right side program LEDs switches on;

● Press and hold for some seconds the defined key combination (START/PAUSE and the closest one);

● Within about 3 seconds the acknowledge of the operation is given by:

- the text “dEM” blinking 3 times on cycle time digits

● In no acknowledge, switch machine off and repeat sequence from the beginning.

11.2.2.2 Exit DEMO MODE

The machine has to be unplugged from mains net.

11.2.3 DIAGNOSTIC 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.

11.2.3.1 ENTERING DIAGNOSTIC MODE

As described before, to enter in this mode the procedure is the following:

● Switch on the machine via On/Off button if present or turn program selector knob out of Off position, and do not press any other button;

● Turn the selector in the 1st position CW;

in case of Hi-Fi type selector, the 1st upper light of right side program LEDs switches on;

● Press and hold for about 3 seconds the defined key combination (START/PAUSE and the closest one);

Within about 3 seconds the UI shall enter the diagnostic mode; the acknowledge of the operation is given by all LEDs and groups of display icons switching on sequentially; otherwise, switch machine off and repeat sequence from the beginning.

11.2.3.2 DIAGNOSTIC PROGRAM DEFINITION

In the 1st selector the User Interface test is performed; all LEDs or LCD symbols are lighted on sequentially to allow checking the outputs. For each LCD display a specific sequence of screens is performed in order to test all icons and backlight LEDs.

11. Hidden Functions

Pressing any button the associated LEDs and display icons are lighted on and the related position number is shown on cycle time (TTE) digits if present, till button is released; besides, the buzzer plays a single “beep” sound (mechanical switch) or “click” sound (touch sensor).

When the selector knob is moved the TTE digits show the “C” letter followed by the knob position code for about 2 seconds

Note : Enter “last alarm display” or “electric test”
After the diagnostic mode was entered, the same combination has the following functions:

- In “last alarm display” selector position (the 11th counting clockwise) the last alarms are cleared.
- In all other positions it sets the “electric test” mode at the next machine switching-on.

FOR ANY POSITION THERE IS A DIFFERENT TEST:			
POSITION	VERSION		DESCRIPTION
1	EWX13	EWX14	User Interface Test
2	EWX13	EWX14	Water load from wash compartment
3	EWX13	EWX14	Water load from prewash compartment
4	EWX13	EWX14	Water load from softener compartment
5	EWX13	EWX14	Water load from third electro valve
6	EWX13	EWX14	Concentrated Wash pump activation (if present)
7	EWX13	EWX14	Wash heater activation and weight sensor test (if present)
8	EWX13	EWX14	Spin phase at 250 rpm with water in the tub (leakage test)
9	EWX13	EWX14	Drain, level sensor calibration and spin phase at maximum spin speed
10	EWX13	EWX14	DRYING TEST (for WD only)
11	EWX13	EWX14	Last alarm display and possible 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, the components activated and the conditions under that the test is performed

Note:

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.
- Pressing another valid key combination (the ones configured for Child Lock, Extra Rinse...) during one of the diagnostic cycles (from position 2 to 10) the factory default settings are restored, that is:

o disable permanent modes/options such as Child Lock, Extra Rinse, Buzzer;

11. Hidden Functions

C01 USER INTERFACE TEST	
Selector-test	Position 1 in clockwise direction
Purpose of test:	To test the functionality of all lights, switches and buzzer.
Activated	All LEDs, LCD display (if present) and buzzer
UI behaviour with display:	All LEDs in sequence, pushing a button correspondent LED is lighted on, the key number is showed on LCD and the buzzer sound. All LCD icons blink together
UI behaviour without display	All led in sequence, pushing a button correspondent led is lighted on and the buzzer sound.
Working conditions:	There isn't any control to run the test (always active).

C02 WASH COMPARTMENT TEST	
Selector-test	Position 2 in clockwise direction
Purpose of test:	To test the water loading from WASH compartment.
Activated	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 washing group.
Working conditions:	Door locked, water level lower then overload level, for max. 5 minutes.

C03 PREWASH COMPARTMENT TEST	
Selector-test	Position 3 in clockwise direction
Purpose of test:	To test the water loading from PREWASH compartment.
Activated	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 washing group.
Working conditions:	Door locked, water level lower then overload level, for max. 5 minutes.

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

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

C06	CONCENTRATED WASH PUMP TEST
Selector-test	Position 6 in clockwise direction
Purpose of test:	To test the concentrated wash pump (if present)
Activated	Door lock device, concentrated wash pump (if present).
UI behaviour with display:	The clock digits report the actual water level (in mm) in the washing group.
Working conditions:	Door locked, water level lower then overload level, for max. 5 minutes.

C07	WASH HEATER TEST
Selector-test	Position 7 in clockwise direction
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), recirculation pump (if present). If the weight sensor is present an additional water load of 1 liter 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 washing group as measured by the NTC.
Working conditions:	Door locked, water level greater then virtual AB level, for max. 10 minutes or up to 90°C water temperature.

C08	TUB LEAKAGE TEST
Selector-test	Position 8 in clockwise direction
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 then 1st 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 greater then 1st virtual level, up to 250 rpm.

C09	DRAIN AND SPIN TEST
Selector-test	Position 9 in clockwise direction
Purpose of test:	To verify the machine during spin phase, the drain pump functionality, and pressure switch calibration procedure
Activated	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 then antifoam level (correspondent to anti-boil level), up to maximum speed.

C10	DRYING TEST (for WD only)
Selector-test	Position 10 in clockwise direction
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 digits (in °C). Toggle between upper and lower NTC temperature for traditional WD machines.
Working conditions:	Door locked, water level lower than antiboiler level, up to 150°C measured on input NTC for max. 10 minutes.

C06	CONCENTRATED WASH PUMP TEST
Selector-test	Position 6 in clockwise direction
Purpose of test:	To test the concentrated wash pump (if present)
Activated	Door lock device, concentrated wash pump (if present).
UI behaviour with display:	The clock digits report the actual water level (in mm) in the washing group.
Working conditions:	Door locked, water level lower then overload level, for max. 5 minutes.

C07	WASH HEATER TEST
Selector-test	Position 7 in clockwise direction
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), recirculation pump (if present). If the weight sensor is present an additional water load of 1 liter 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 washing group as measured by the NTC.
Working conditions:	Door locked, water level greater then virtual AB level, for max. 10 minutes or up to 90°C water temperature.

C08	TUB LEAKAGE TEST
Selector-test	Position 8 in clockwise direction
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 then 1st 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 greater then 1st virtual level, up to 250 rpm.

C09	DRAIN AND SPIN TEST
Selector-test	Position 9 in clockwise direction
Purpose of test:	To verify the machine during spin phase, the drain pump functionality, and pressure switch calibration procedure
Activated	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 then antifoam level (correspondent to anti-boil level), up to maximum speed.

C10	DRYING TEST (for WD only)
Selector-test	Position 10 in clockwise direction
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 digits (in °C). Toggle between upper and lower NTC temperature for traditional WD machines.
Working conditions:	Door locked, water level lower than antiboiler level, up to 150°C measured on input NTC for max. 10 minutes.

11. Hidden Functions

d10	CONDUCTIVITY & TURBIDITY SENSOR
Selector-test	Position 10 in clockwise direction + "start/pause" button
Purpose of test:	To verify the CONDUCTIVITY & TURBIDITY SENSOR
Activated	CONDUCTIVITY & TURBIDITY SENSOR active
UI behaviour with display:	Water temperature on digits (in °C) : C xxx Toggle between Water CONDUCTIVITY on digits (in S) : S xxx
Working conditions:	There isn't any control to run the test (always active).

C11	LAST ALARM DISPLAY AND POSSIBLE RESET
Selector-test	Position 11 in clockwise direction
Purpose of test:	Display three latest alarms, starting from the most recent. last alarm and possible reset.
Activated	
UI behaviour with	Alarm complete code is showed in the format Exx (E 4 2)
Working conditions:	

12. WARNINGS

In normal functioning mode, to final user are shown only those warnings that he is able to manage without the attendance of after sales service personnel.

These warnings are not considered permanent machine faults, but normally **temporary faults due to carelessness of the user.** 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 stop machine and cannot be managed by the final user**, that are requested to be shown as warnings:

- EF0(*) - water leakage (managed by Aqua Control System)
- EH0 - low mains voltage/irregular mains frequency
- 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, unbalanced laundry load.

All the other warnings are not showed 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.

12. WARNINGS

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

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.

DIGITS DISPLAY

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 showed anymore, buzzer stops sequence and cycle restarts.

Standard warnings codes that can be showed 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.

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

13. 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 ...

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 then 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.

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, so for instance “Eb3” is shown like “EH3”.

13.1 LAST ALARM READING AND RESET

The alarm indication is also used when the user interface (UI) enters LAST ALARM mode, that is when the user pushes the button “2” and “3” combination while the board is in normal mode or when the main 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 in diagnostic mode, it’s possible to read the code of the three latest alarms, starting from the most recent.

● Each time the leftmost key in the pushes the button “2” and “3” combination is pressed, the UI starts displaying the following alarm code among those stored in memory. So, if this button is pressed once while the last alarm was being displayed, the last but one alarm is displayed instead; after the key is pressed again, the last but two alarm code is shown.

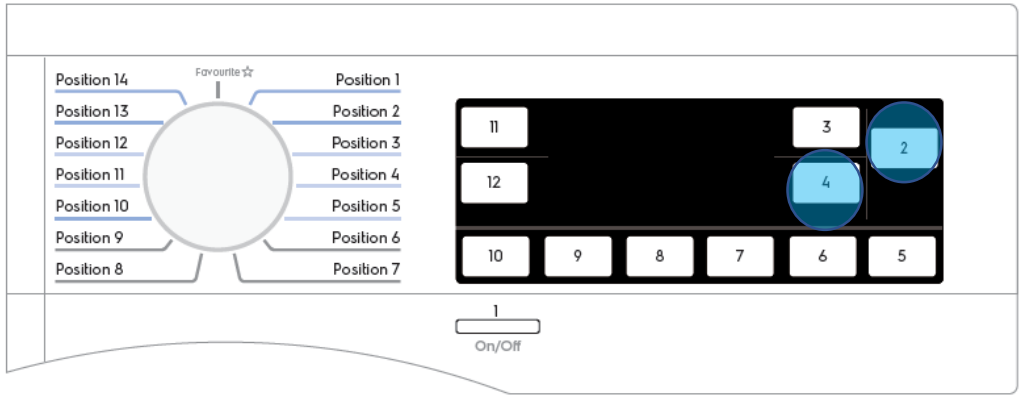
● Pressing at any time the rightmost key START/PAUSE button in the pushes the button “2” and “3” combination the displayed sequence comes back at once to the latest alarm.

● If the mode is entered by pressing the pushes the button “2” and “3” while the board is in normal mode, the UI displays only the last alarm. The mode exits if any of the keys from pushes the button “2” and “3” combination is pressed.

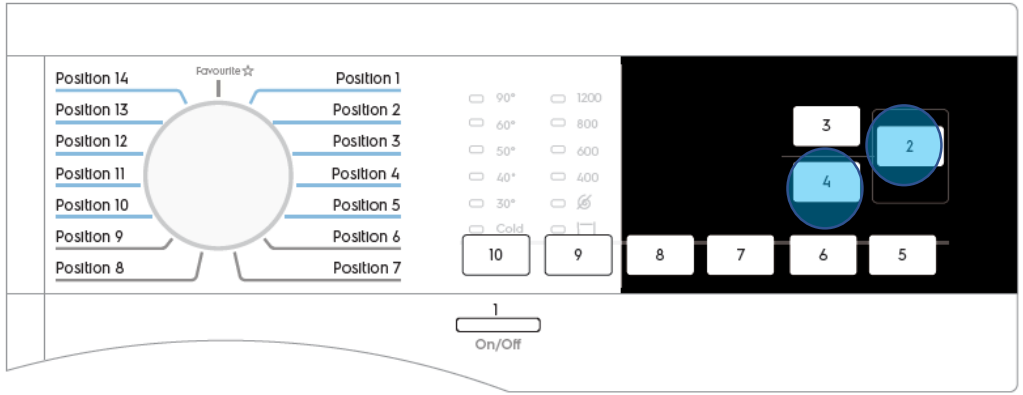
13. ALARMS

It's possible to reset Last alarm pressing the defined key combination (START/PAUSE and the closest one for every UI) when in Diagnostic mode with selector in 11th position..

TC 1-3



TC 4



14. 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 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 forced a cycle pause, keeping the door closed.
This alarm can be reset pressing Start/pause button or resetting the current cycle.
It is 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.
It is 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.
It is not reset after a power fail.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

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 configurable threshold the alarm will be set.
For this new management we can configure the threshold and also the timeout.

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 also pressing Start/pause button or resetting the current cycle
EWX13:
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 configurable threshold the alarm will be set.
For this new management we can configure the threshold and also the timeout.

E20

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.

EWX13:

The situation can happen in two ways:

- the triac is driven by the microprocessor while the sensing reads a lower value.

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 on the negative half wave of the signal.

It can happen when the triac is short circuited.

EWX14:

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, resetting the current cycle or switching off the machine.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

E24 – DRAIN PUMP TRIAC SENSING FAILURE

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

EWX13:

With the new sensing circuit is not possible read continuously a signal fixed at 5 Volt (EWX13) / a signal less 3.5 Volt (EWX14).

In fact when the pump is switched off on the negative half wave we have to read a signal closed to 0 Volts (EWX13) / 5 Volts (EWX14).

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

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

E30

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 resetting the current cycle or 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 and is called "ee_wc_lev_lscal_tout".

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 switching off the machine or pressing Start/Pause button.

To clear the alarm is necessary reset the current cycle.

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

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

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 al 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 switching off the machine or pressing Start/Pause button.
To clear the alarm is necessary reset the current cycle.

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 pressing Start/pause button or resetting the current cycle.
This alarm cannot be reset 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.

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 pressing Start/pause button or resetting the current cycle.
This alarm cannot be reset 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 switching off the machine or pressing Start/Pause button.
To clear the alarm is necessary reset the current cycle.

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 than 3 seconds (EWX13) / 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 is necessary reset the current cycle or pressing Start/Pause button at the end of the 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.

EWX13:
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).

EWX14:
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 the alarm is necessary reset the current cycle or pressing Start/Pause button at the end of the safety drain (EWX13).

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 EWX13:

This alarm can be set in two different ways according to motor status: running or stopped (motor triac switched off).

- First condition: Motor Running.
  No signal coming from tachometer during motor driving.
  The machine goes in alarm condition when the motor is driven for a configurable time and the microprocessor is not able to detect any tachometer signal. The timeout is different depending on the step of the drum movement and configurable in the range 1800÷3000 ms.
- Second condition: Motor stopped (motor triac not driven)

Thanks to the introduction of a new electronic circuit the tachometer generator can be tested before the starting of each movement phase. The circuit verifies if the tachometer is connected and not damaged (opened). It this way can be avoided any dangerous motor starting without speed feedback that can cause cabinet hits, jumps, etc.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

EWX14:
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 (EWX13, EWX14) or reset the current cycle (EWX14).

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 is necessary reset the current cycle.

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 is necessary reset the current cycle or 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 is necessary switch off the machine or reset the current cycle.

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 is necessary switch off the machine or reset the current cycle.

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 memorized, the machine is stopped with the door locked.
To clear this alarm is necessary switch off the machine or reset the current cycle.

E5

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 is necessary switch off the machine or reset the current cycle.

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 is necessary switch off the machine or reset the current cycle.

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 is necessary switch off the machine or reset the current cycle

E5E – FCV- MOTHERBOARD COMMUNICATION FAILURE

There are communication problems in between FCV control board and Motherboard.
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 switching off the machine or pressing Start/Pause button.
To clear this alarm is necessary reset the current cycle or switch off the machine.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

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 is necessary reset the current cycle or switching off the machine.

E60

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.

This alarm cannot be reset switching off the machine.

To clear this alarm is necessary reset the current cycle or pressing Start/Pause button.

E66 – HEATING ELEMENT RELAY FAILURE.

EWX13, EWX14:

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 fault can be detected checking the congruence between the relay status and two different sensing (one for the washing and one for the drying heating element).(EWX13) / the heater relay sensing (EWX14).

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 component 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 is necessary switch off the machine or reset the current cycle.

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.

EWX13, EWX14:

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

EWX13

This alarm stops the machine; perform a safety water load in order to cover the heating element and force the door opening

To clear the alarm is necessary reset the current cycle or pressing Start/pause button or switch off the machine.

EWX14

This alarm stops the machine and maintains the door opened.

To clear the alarm is necessary reset the current cycle or switch 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".

EWX13, EWX14:

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.

EWX13, EWX14:

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.

EWX13:

Note: during diagnostic cycles an "E69 alarm" can happen if the machine has a current leakage from ~ 560 KΩ to ~ 120 KΩ versus Neutral. In this case is necessary to check firstly the heating element and then the entire machine to identify the source of the current leakage.

E6

E6A – HEATER RELAY SENSING FAILURE

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

- greater than 10 A/D steps on the negative half wave (sensing floating) (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-off state as the other relay alarms
This alarm cannot be reset pressing the Start/Pause button.
To clear the alarm is necessary reset the current cycle or switch off the machine.

E6B – HEATING WD RELAY FAILURE

EWX13:

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.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

When the fault condition is recognized the machine was stopped and the door was opened.
To clear this alarm is necessary switch off the machine or reset the current cycle or press a key at the end of safety cycle execution.

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 be maintained closed.
To clear the alarm is necessary reset the current cycle by selector or pressing start/pause button at the end of cycle.
This alarm is not active in set-up phase.
This alarm cannot be reset switching off the machine.

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 the alarm is necessary reset the current cycle or pressing start/pause button at the end of cycle.
This alarm cannot be reset 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 the alarm is necessary reset the current cycle or pressing start/pause button at the end of cycle.
This alarm cannot be reset 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 the alarm is necessary reset the current cycle or pressing start/pause button at the end of cycle.
This alarm cannot be reset switching off the machine.

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.(EWX14).
In fact when the pump is switched off on the negative half wave we have to read a signal closed to 0 (EWX13) / 5 (EWX14) Volts.
This alarm management performs the safety drain cycle and forces the door opening.
This alarm can be reset pressing Start/pause button, resetting the current cycle or switching off the machine..

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

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.

EWX13:

The situation can happen in two ways:

- the triac is driven by the microprocessor while the sensing reads a lower value.
  It can happen in several ways :
  - the load 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 on the negative half wave of the signal.

It can happen when the triac is in short circuit.

EWX14:

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, resetting the current cycle or 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 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.

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 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.

E90

E91 – COMMUNICATION ERROR BETWEEN UI AND MOTHERBOARD

There are communication problems in between User Interface and Motherboard.
Problems could be due to Hardware (problems on connectors for example disconnection of user interface or of the motherboard) 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 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.

E92 – USER INTERFACE MOTHER BOARD PROTOCOL INCONGRUENCE

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

The alarm is displayed on the display.
To clear the alarm is necessary to switch 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 display.

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

E98 – FCV AND MB PROTOCOL INCONGRUENCE

The communication protocol between FCV and motherboard is not aligned.
This could be due to incompatible configuration between FCV and motherboard.
This alarm is checked at the power-ON of FCV and the machine is stopped.
To clear the alarm is necessary switch off the machine or reset the current cycle.
This alarm cannot be reset pressing the start/pause button.

E9

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 SYSTEM FAILURE

EWX13:
This alarm is set when we read no impulses coming from DSP and the motor is running at e speed lower than 35 rpm.
If during the movement we don't detect a change of DSP status, we change the motor direction.
If also in this conditions no impulses coming from the DSP after the second trial we stop the machine and set the alarm.
The fault condition usually can happen at the beginning of cycle when user has forgotten to close the door lid.
In this condition when motor starts to run causes belt exit, so after the third trial the alarm will be set.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

EWX14:

Each time the lid was closed, at the cycle start, the PB performs a particular movement in order to check if the drum doors are 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 lid. In this condition when motor starts to run causes the belt exit.

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

EAA – NIUX SSH SERIALIZATION ALARM

Missing/not correct Niux serialization data informations. Production process failed due to some reasons:

- Missing or not properly saved PNC/ELC/S_N
- NIU SSH protocol session not properly closed.

The alarm is showed on the display and the communication through the Niux board is disabled.

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.

EAB/ EAH – NIUX COMMUNICATION ALARM

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

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

In this case the user is not able to communicate to the appliance by App.

The alarm is not showed on the display.

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.

EAC – NIUX ALWAYS ON ALARM

The user interface is not powering the Niux board but is still receiving "Macs" messages from this. The faulty condition usually can happen when a specific component used to control the power status of the board is damaged.

The alarm is not showed on the display.

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.

EAD – SERIALIZATION MISMATCH ALARM

Serialization data not aligned between boards.

The faulty condition usually, can happen when boards were replaced between same appliance models without assigning properly the serialization information.

This warning is not displayed on the user interface and the user is not able to communicate to the appliance by App.

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

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 can be auto reset if the power supply period returns at 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 can be auto reset if the power supplies voltage return at 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 can be auto reset if the power supplies voltage return at normal values.

EBD/EHD – HEATER WD RELAY SENSING FAILURE.

EWX13:
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-off state as the other relay alarms
This alarm cannot be reset pressing the Start/Pause button.
To clear the alarm is necessary reset the current cycle or switch off the machine.
EWX14:
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-off state as the other relay alarms
This alarm cannot be reset pressing the Start/Pause button.
To clear the alarm is necessary reset the current cycle or switch off the machine.

EBE/EHE – FCV RELAY FAILURE

There is an incongruent situation between the sensing of the relay and the driving circuit state.
EWX14:
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 the alarm is necessary reset the current cycle or switch 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 the alarm is necessary reset the current cycle or switch off the machine.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

EC2 – WEIGHT SENSOR COMMUNICATION ERROR

There are communication problems in between Weight Sensor and Motherboard.
Problems could be due to Hardware (problems on connectors for example disconnection of Weight sensor or of the motherboard) 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 or resetting the current cycle will clear the 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 or resetting the current cycle will clear the 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 the alarm is necessary reset the current cycle or switch 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.
This alarm can be reset pressing Start/pause button, resetting the current cycle or 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 the alarm is necessary reset the current cycle.

ECA – DETERGENT DISPENSER WATER SOFTENER BOARD COMMUNICATION ALARM

There are communication problems in between DDWS satellite board and Motherboard.
Problems could be due to hardware (faulty components, wiring, etc.) or due to disturbs (burst on wiring) on the motherboard.
The alarm appears after 25 seconds during which the board performs continuous retries to restore the communication.
To clear this alarm is necessary switch off the machine or reset the current cycle.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

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 pressing Start/Pause button.

To clear this alarm is necessary reset the current cycle or 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 pressing Start/Pause button.

To clear this alarm is necessary reset the current cycle or 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 pressing Start/Pause button.

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

ED

ED1 – WDM BOARD COMMUNICATION ALARM.

There are communication problems in between WDM satellite board and Motherboard. Problems could be due to hardware (faulty components, wiring, etc.) or due to disturbs (burst on wiring) on the motherboard.

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

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

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 is necessary switch off the machine, reset the current cycle or pressing 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 is necessary switch off the machine, reset the current cycle or pressing 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 is necessary switch off the machine, reset the current cycle or pressing the Start/Pause button.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

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 is necessary switch off the machine, reset the current cycle or pressing 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, reset the current cycle or pressing the Start/Pause button.

ED7 – WDM THERMOSTAT OPENED.

EWX13

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.
When the alarm is set not action is executed. The cycle continues normally.
To clear this alarm is necessary switch off the machine, reset the current cycle or pressing the Start/Pause button.

EWX14:

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

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

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

EDH/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 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.

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 Line3

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 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.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

EDE – Conductivity & Turbidity Sensor CIRCUIT FAILURE.

There is an incongruent situation between the "Conductivity & Turbidity Sensor" signal and the output given by the microprocessor.

When the alarm is set the machine is disenable Conductivity & Turbidity Sensor function. Then Switch to MAXIMUM rinse time

To clear this alarm by replace Conductivity & Turbidity Sensor.

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 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.

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.

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.

EE3 – FAN OVERLOAD ALARM

This alarm is not managed (it cannot be set).

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 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.

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 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.

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 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.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

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 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.

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.
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.

EE9 – FAN CONFIGURATION NOT READY ALARM

This alarm is not managed (it cannot be set).

EEA – FAN POWER MODULE FAILURE

This alarm is not managed (it cannot be set).

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 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.

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 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.

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 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.

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 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.

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 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.

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.
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.

EE9 – FAN CONFIGURATION NOT READY ALARM

This alarm is not managed (it cannot be set).

EEA – FAN POWER MODULE FAILURE

This alarm is not managed (it cannot be set).

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 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.

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 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.

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.

14. ALARMS SOFTWARE MANAGEMENT DESCRIPTION

EF3 – ACQUA CONTROL WARNING.

EWX13:

This warning is set for washing machine with Aqua Control system. This warning is displayed only in this situation:

The triac isn't driven by the microcontroller but DRAIN_TY_S reads a low value. So two situations could be possible:

- The triac is in short circuit.
  This alarm management performs the safety drain cycle and forces the door opening.
- The Aqua Control is active (DRAIN_TY_S is floating and a "low" value is read by the micro).

It is not possible, with this kind of configuration, to distinguish the one from the other.

In this case the Aqua Control warning is displayed. When the alarm is set the machine is blocked.

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

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

EWX14:

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 pressing the Start/Pause button.

15. ALARMS TABLE

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

ALARM CODEDE	ALARM DESCRIPTION	ENABLED		FAULT CONDITION	POSSIBLE FAULT	MACHINE ACTION/STATUS	RESET KEY
		EWX13	EWX14				
E11	Difficulties in water fill for washing	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	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	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	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	Cycle Paused (after 2 attempts)	START ON/OFF RESET
E22	Water drain problems during drying cycle	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	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	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle Cycle stops with door unlocked	RESET
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	Frequency of electronic pressure switch out of limits	Pressure sensor defective Wiring or main Board defective	Cycle blocked with door locked	RESET

15. ALARMS TABLE

ALARM CODEDE	ALARM DESCRIPTION	ENABLED		FAULT CONDITION	POSSIBLE FAULT	MACHINE ACTION/STATUS	RESET KEY
		EWX13	EWX14				
E32	Electronic pressure switch calibration problems	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	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	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	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	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	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	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle activation Cycle blocked	RESET
E45	Door triac sensing failure	YES	YES	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle activation Cycle blocked	RESET
E51	Motor triac short circuit	YE S	-	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	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
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	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

15. ALARMS TABLE

ALARM CODEDE	ALARM DESCRIPTION	ENABLED		FAULT CONDITION	POSSIBLE FAULT	MACHINE ACTION/STATUS	RESET KEY
		EWX13	EWX14				
E58	FCV Over current	-	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	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	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	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	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	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	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	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	-	-	Washing heating timeout expired	Washing NTC defective Washing heater element defective Wiring or main board defective	Heating phases skipped	START RESET
E62	Overheating during washing cycle	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	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

15. ALARMS TABLE

ALARM CODEDE	ALARM DESCRIPTION	EWX13	EWX14	FAULT CONDITION	POSSIBLE FAULT	MACHINE ACTION/STATUS	RESET KEY
E68	Ground current leakage	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	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	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	-	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	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	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	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	The washing temperature does not increase	Washing NTC sensor badly positioned NTC sensor faulty Wiring or main board defective	Heating phases skipped	RESET
E75	Drying Capillary NTC failure	-	-	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	-	-	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	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

15. ALARMS TABLE

ALARM CODEDE	ALARM DESCRIPTION	EWX13	EWX14	FAULT CONDITION	POSSIBLE FAULT	MACHINE ACTION/STATUS	RESET KEY
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	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	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	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	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	Incorrect configuration of appliance	Incorrect configuration data Main board defective	Cycle blocked	OFF/ON
E94	Cycle Configuration error	YES	YES	Incorrect configuration of washing cycles	Incorrect configuration data Main board defective	Cycle blocked	OFF/ON
E97	Incongruence between selector and cycles configuration	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	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	Configuration wrongly or not received	Display Board	No actions	ON/OFF START RESET
E9E	UI touch fault	YES	YES	Touch display not working	Display Board	No actions	OFF/ON
EA1	DSP system failure	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	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

15. ALARMS TABLE

ALARM CODEDE	ALARM DESCRIPTION	EWX13	EWX14	FAULT CONDITION	POSSIBLE FAULT	MACHINE ACTION/STATUS	RESET KEY
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	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	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
EH3 (EB3)	Power supply voltage too low	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	-	Zero Watt relay not working and machine still switched on	Main board defective	No actions	OFF/ON RESET
EHC (EBC)	Line WD relay alarm	-	-	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	Wrong input signal to microprocessor	Main board defective	Cycle blocked with door locked	RESET
EHE (EBE)	FCV Relay failure	-	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	-	-	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	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	Communication problem between Weight sensor and MB	Wiring defective Weight Sensor defective MB defective	No actions	START RESET
EC3	Weight sensor fault	-	YES	Signal coming from sensor out of limits	Weight sensor defective Main board defective Wiring	No actions	START RESET

15. ALARMS TABLE

ALARM CODEDE	ALARM DESCRIPTION	ENABLED		FAULT CONDITION	POSSIBLE FAULT	MACHINE ACTION/STATUS	RESET KEY
		EWX13	EWX14				
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
ECA	Detergent Dispenser Water Softener board communication alarm	-	YES	No communication between motherboard 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
ED1	WD board communication alarm	YES	YES	No communication between motherboard 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	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	Signal out of the limits	WD board defective	Skip drying phase	START ON/OFF RESET
ED4	WD heating element2 relay failure	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

15. ALARMS TABLE

ALARM CODEDE	ALARM DESCRIPTION	ENABLED		FAULT CONDITION	POSSIBLE FAULT	MACHINE ACTION/STATUS	RESET KEY
		EWX13	EWX14				
ED5	WD heating element2 sensing relay failure	YES	YES	Signal out of the limits	WD board defective	Skip drying phase	START ON/OFF RESET
ED6	WD thermostat sensing failure	YES	YES	Signal of thermostat sensing out of limits	WD board defective	No actions	START ON/OFF RESET
ED7	WD thermostat failure	YES	YES	EWX11, EWX13: Incongruence between WD heating 1 and 2 relay sensing or thermostat sensing out of limits EWX14: With satellite board: Incongruence between WD heating 1 and 2 relay sensing or thermostat sensing out of limits. Without satellite: Incongruence between heater and drying relay sensing.	EWX13: Manual or automatic thermostat opened Wiring, WD board defective EWX11, EWX14: 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	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	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	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	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	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	-	-	Line WD sensing out of nominal working thresholds	Current leakage between drying heater element and earth	Drying phases skipped.	START ON/OFF RESET
EDE	Conductivity & Turbidity Sensor CIRCUIT FAILURE.	-	YES	Replace Conductivity & Turbidity Sensor.	Conductivity & Turbidity Sensor defect	disenable Conductivity & Turbidity Sensor function. Then Switch to MAXIMUM rinse time	START ON/OFF RESET

15. ALARMS TABLE

ALARM CODEDE	ALARM DESCRIPTION	ENABLED		FAULT CONDITION	POSSIBLE FAULT	MACHINE ACTION/STATUS	RESET KEY
		EWX13	EWX14				
EE1	Fan current trip failure	-	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	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	This alarm is not managed (it cannot be set)	-	-	-
EE4	Fan not following alarm	-	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	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	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	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	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	This alarm is not managed (it cannot be set).	-	-	-
EEA	Fan power module failure	-	YES	This alarm is not managed (it cannot be set).	-	-	-
EEB	Cooler Fan failure	-	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

15. ALARMS TABLE

ALARM CODEDE	ALARM DESCRIPTION	ENABLED		FAULT CONDITION	POSSIBLE FAULT	MACHINE ACTION/STATUS	RESET KEY
		EWX13	EWX14				
EEC	Compressor failure	-	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	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	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	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	START ON/OFF RESET
EF4	Water load low pressure	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	Final spin phase skipped due to a high unbalance load	Load unbalanced	No actions	START RESET
EF6	Safety reset	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	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

16. Electrolux Life Mobile Application

16.1 Abbreviations and Definitions

ECP : Electrolux Connectivity Platform
SDK : Software Development Kit
SSID : Service Set Identifier

16.2 Supported

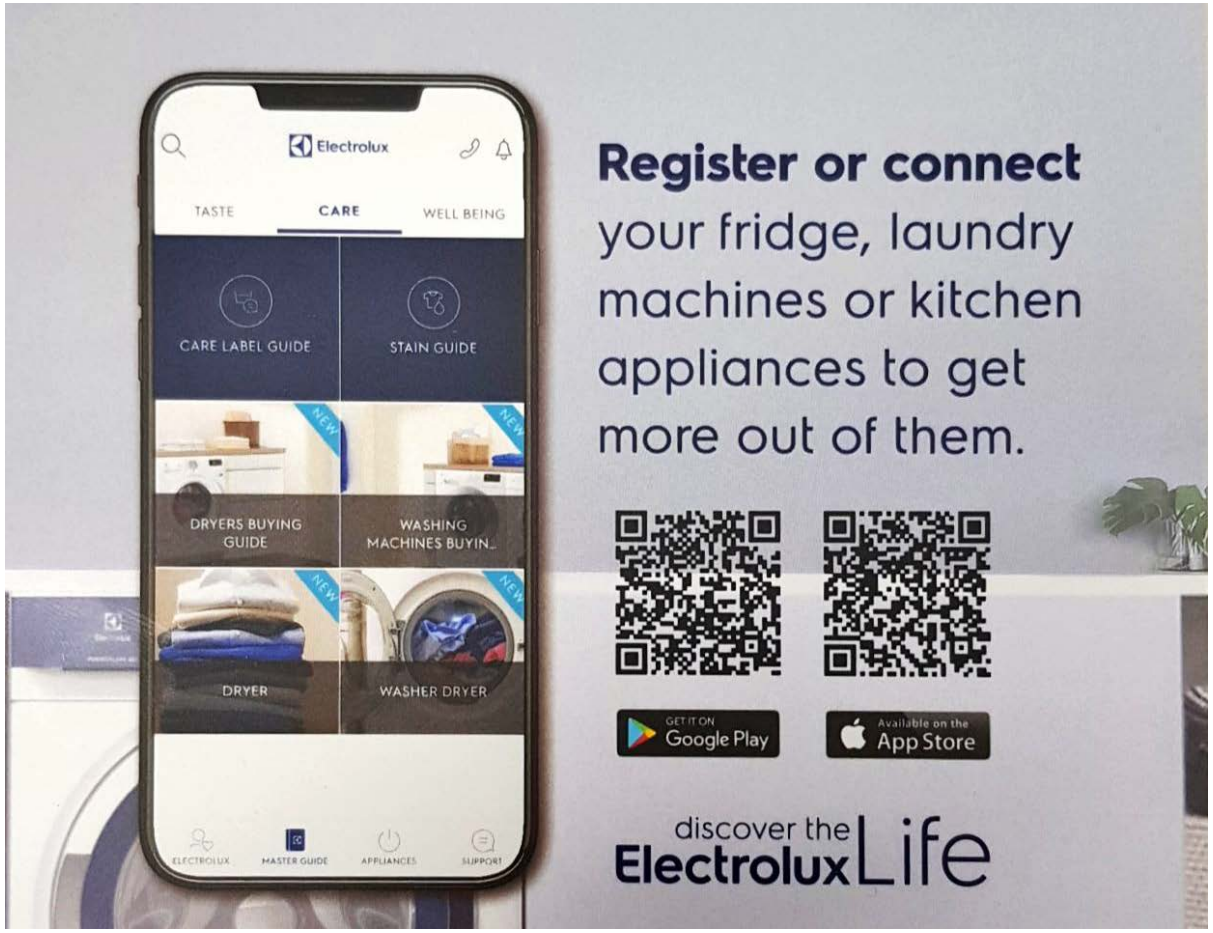
16.2.1 App Version Supported

IOS : 9.3 , 10.3.2. , 10.3.3 , 11.4 , 11.X and above
Android : Android 5.1 and above
We do not support iPad and Android Tablets

16.2.2 Set up Process vs Network Performance

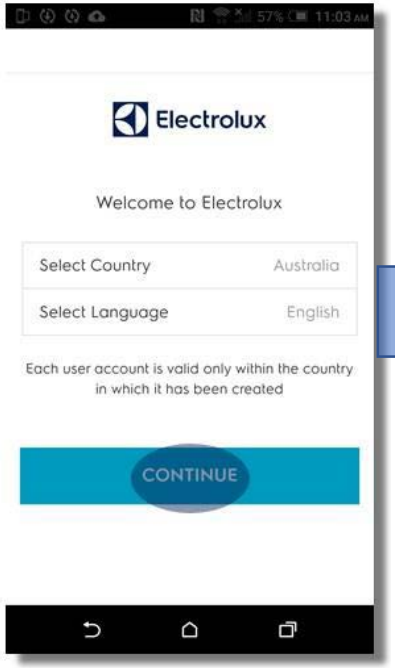
RSSI	Link Speed	Set up duration	Comment
x > -30dBm	72 - 99	3.11 mins	Observed that the onboarding is successful in short time.
-70 < x < -60dBm	1 -71	4.10 mins	Observed that the onboarding process took longer - Wi-Fi signal strength is weak.
-90 < x < -80dBm	1 -71	-	Observed that the device is able to connect to the appliance but the appliance can't find the router. Onboarding process failed at step 3/4.
x < -90	-1	-	No network.

16.3 Download Electrolux Life App

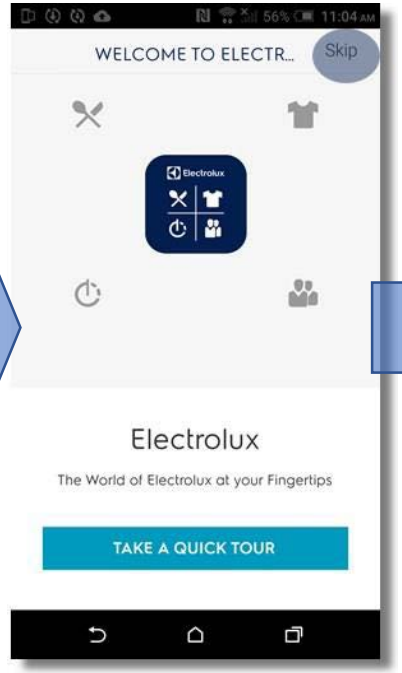


16.3 Getting started with Electrolux Life

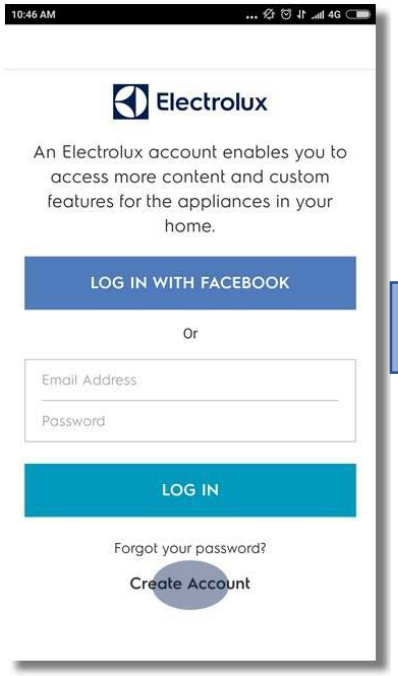
16.3.1 Android : Create account



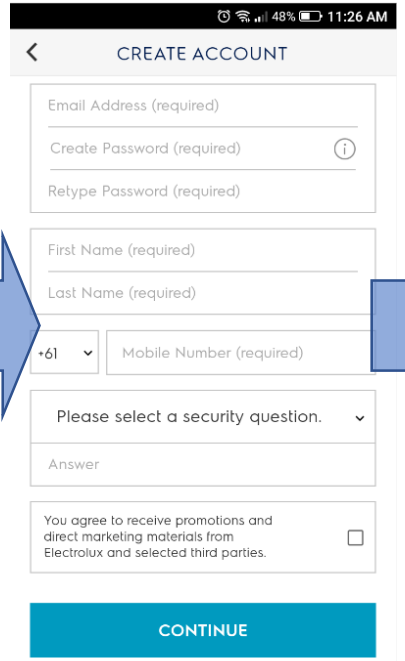
1) Select country and region and tap Continue.



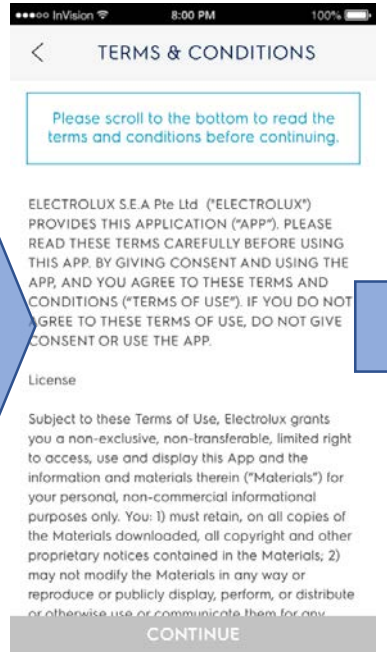
2) If you want to go through a quick tutorial tap "Take a quick tour". Tap Skip to go directly to sign in page.



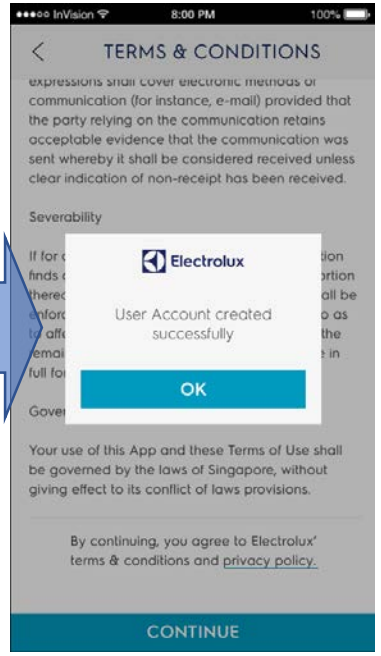
Tap on Create Account.



Fill in your details, choose a security question then tap Continue.



Scroll down through the terms and conditions, and tap Accept and Continue.

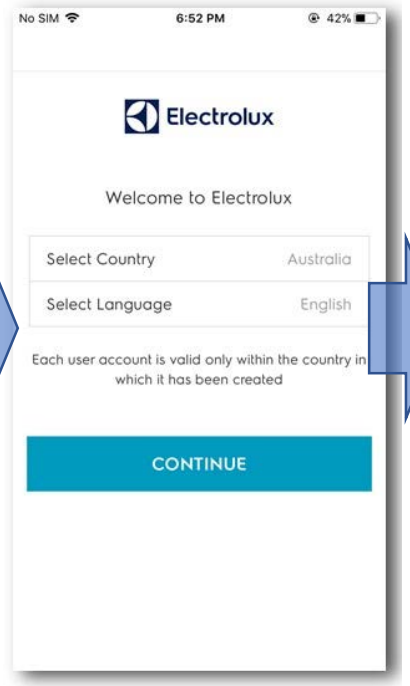


User Account Registered.

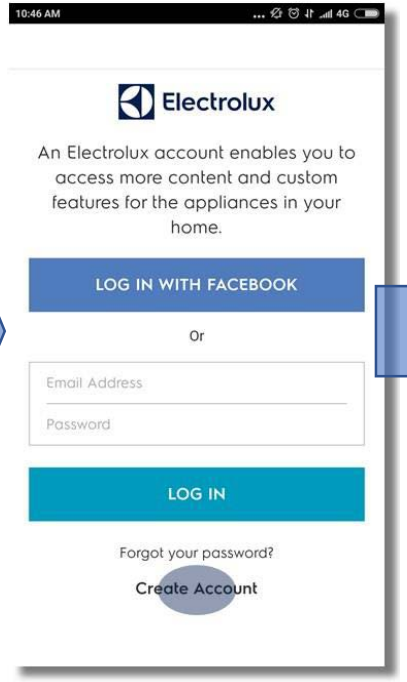
16.3 Getting started with Electrolux Life

16.3.2 IOS : Create account

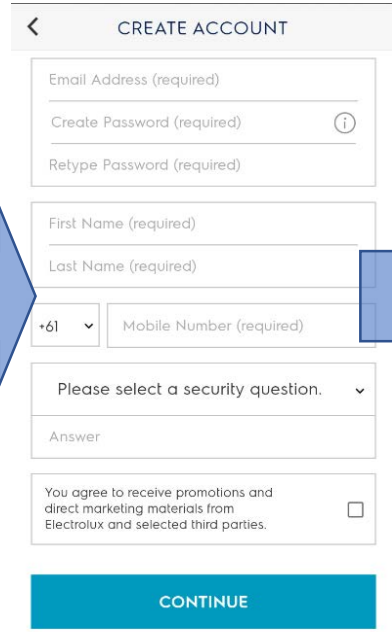
1) The app will ask for permissions to send notifications.. Tap Allow.



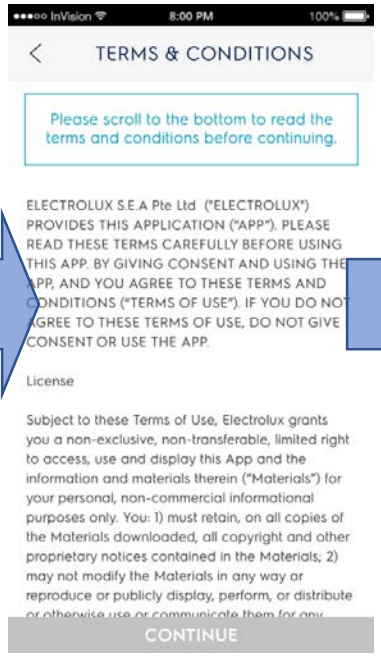
2) Select country and region and tap continue.



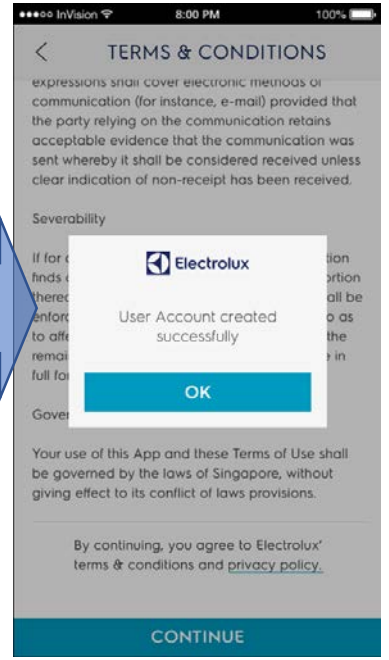
Tap on Create Account.



Fill in your details, choose a security question then tap Continue.

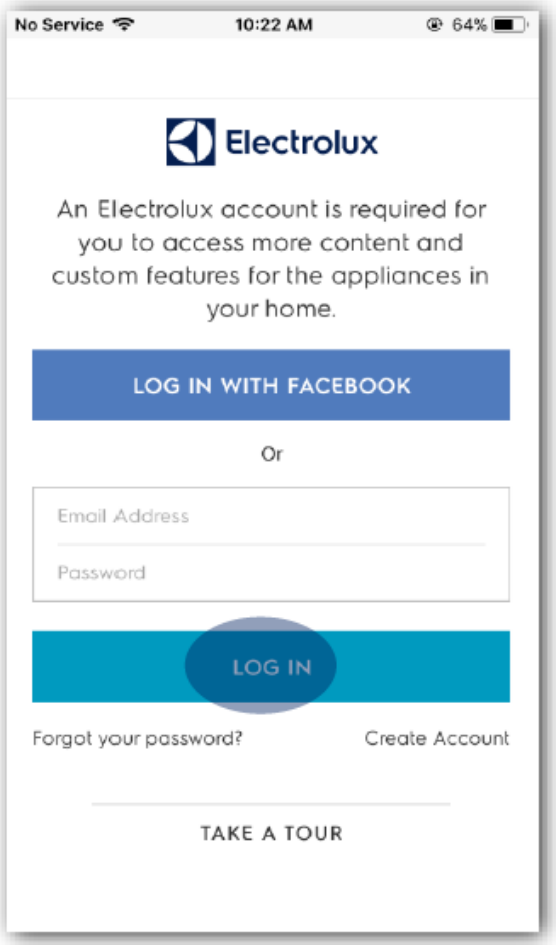


Scroll down through the terms and conditions, and tap Accept and Continue.



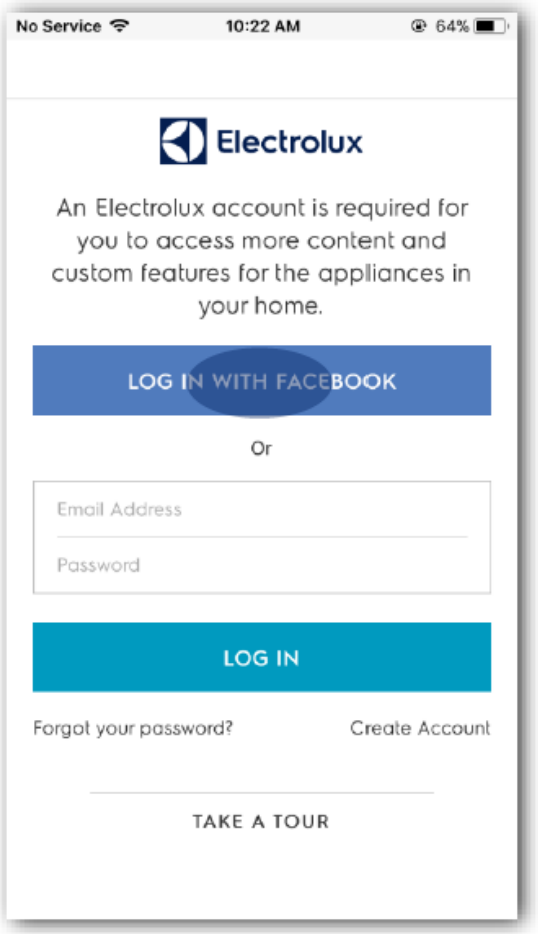
Your account is now successfully created

16.3.3 Log in with existing account



1) Enter your account credentials.
2) Tap log in

16.3.4 Log in with existing account



1) Tap Log in with Facebook
2) Enter your Facebook credentials.

16.3.5 Account Troubleshooting

1) Scenario: User doesn't have a Facebook Account

User wants to log in to the application, but they don't have a Facebook Account.

Solution

User can create an Electrolux Life account directly without Facebook details, following the steps in Create Account.

2) Scenario: User unable to log in via Facebook

- Facebook Bans Electrolux Facebook App.
- Facebook credentials provided by the consumer are incorrect.

Solution

- Make sure user is connected to internet.
- Request the consumer to try again with a good Wi-Fi signal or data connection.
- Confirm with Consumer if his Facebook account is working normally.
- Request consumer to contact Facebook for log in issue.
- Request consumer to create an account with Electrolux Life with the same email address.

3) Scenario: User does not have the required information to create an account

- User does not have an email address.
- User does not have a phone number.
- User does not want accept terms & conditions.
- User does not provide all details and clicks on Continue (and ignores the errors).

Solution

It is mandatory for Consumers to provide the required details and accept the Terms & Conditions to use the services provided in Electrolux Life app. Please educate the consumer on the list of services and benefits of using the app.

4) Scenario: User Account Exit

- User account (Email address) already exists but user never created one.

Solution

- Ask user to create an account with a new email address.
- If the user claims that his email address is being used by someone else - please log a ticket with IT Team. IT team will investigate.
- User account already exists but user still clicked on Create Account- Ask user to try to set new password.

5) Scenario: Scenario: User forgot password

• User might have forgotten the password provided while creating the account.

• While recovering password using the "forgot password" option, user forgot the answer to the "Secret Question" that they set while creating account.

Solution

• User may set a new password using the Forgot Password option.

• User may be able to login using their Facebook account.

• User may create a new account using another email address.

6) User selects a country in Welcome Page, but app changes to a different country's content

• User selected a specific country in Welcome page and is shown a different country in App settings.

Solution

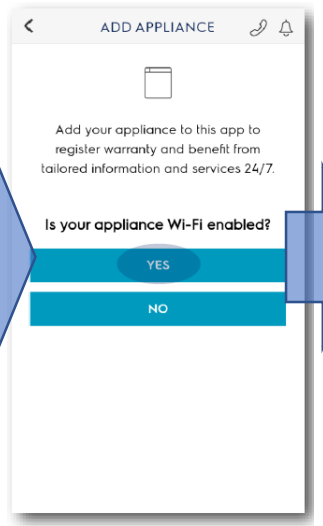
• When creating account user has registered in country A, if user goes to welcome page and selects country B, user will still be in country A.

• User need to go to Support->Settings->App Settings to change their country

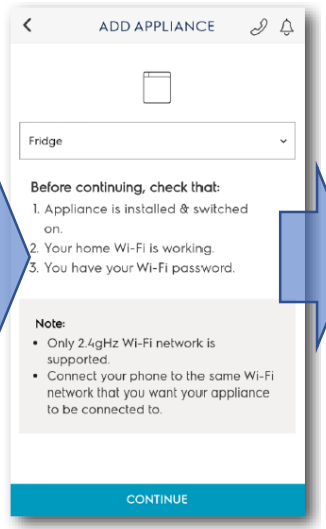
16.4 Add Appliance

16.4.1 Android (Note : One appliance can only be on boarded by one account. One account can be shared with multiple user.)

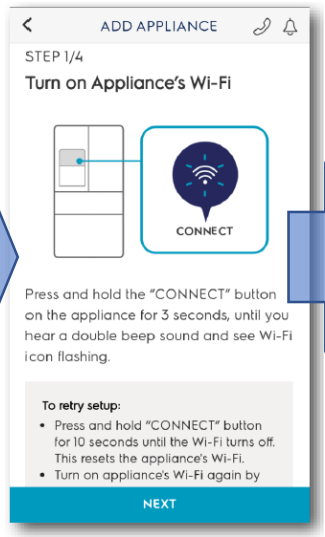
1 To start registering an Appliance, go to Appliance tab - Tap Add Appliance.



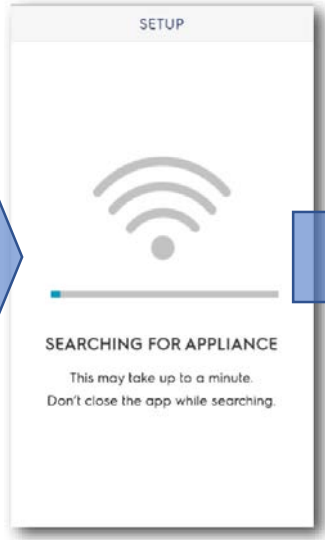
2 Tap Yes.



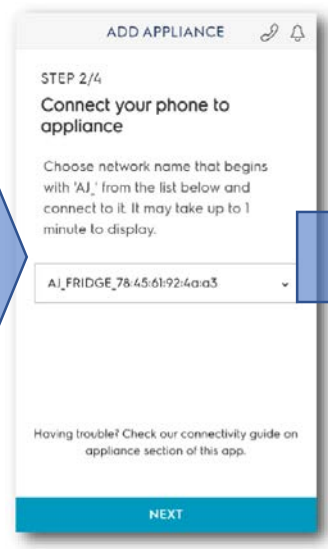
3 Choose your Wi-Fi enabled appliance. Tap continue.



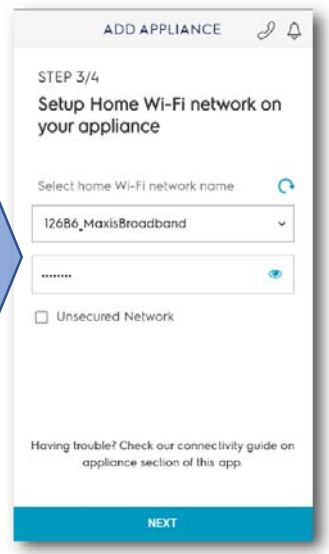
4 Turn on appliance's Wi-Fi by pressing connect button for 3 seconds until you hear a beep sound. Wait few seconds then tap Next.



5 Finding the appliance may take a minute.



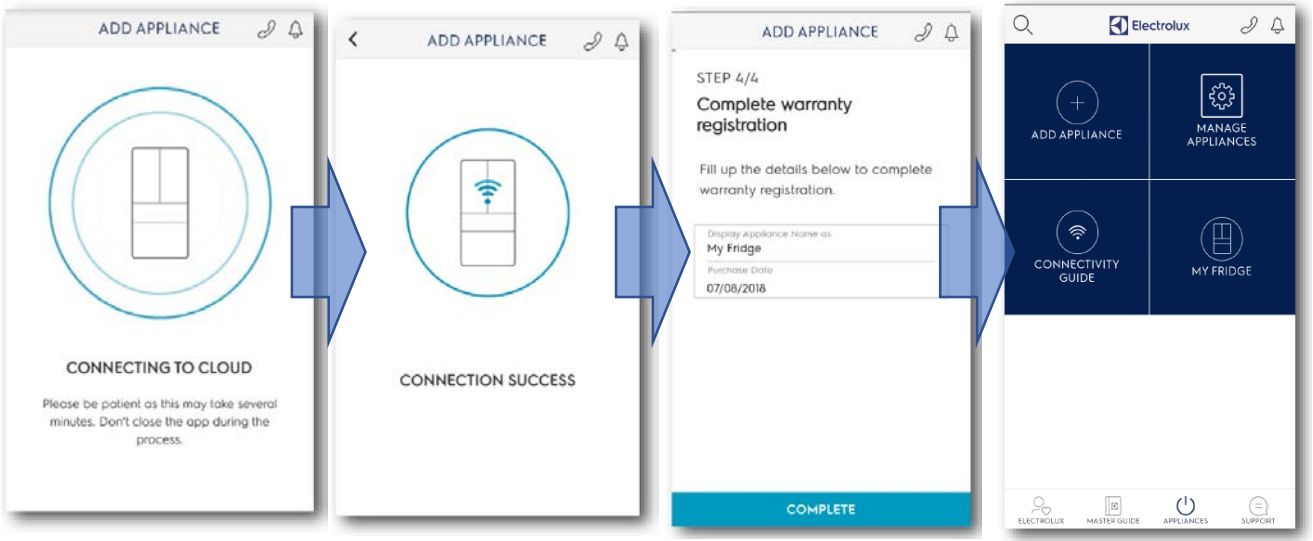
6 Select the appliance when it shows up (starts with "AJ_...") and then enter the credentials for the Wi-Fi



7 Enter your Wi-Fi credentials.

16.4 Add Appliance

16.4.1 Android (Note : One appliance can only be on boarded by one account. One account can be shared with multiple user.)



8 Don't close the app, setting up the Wi-Fi may take few minutes.

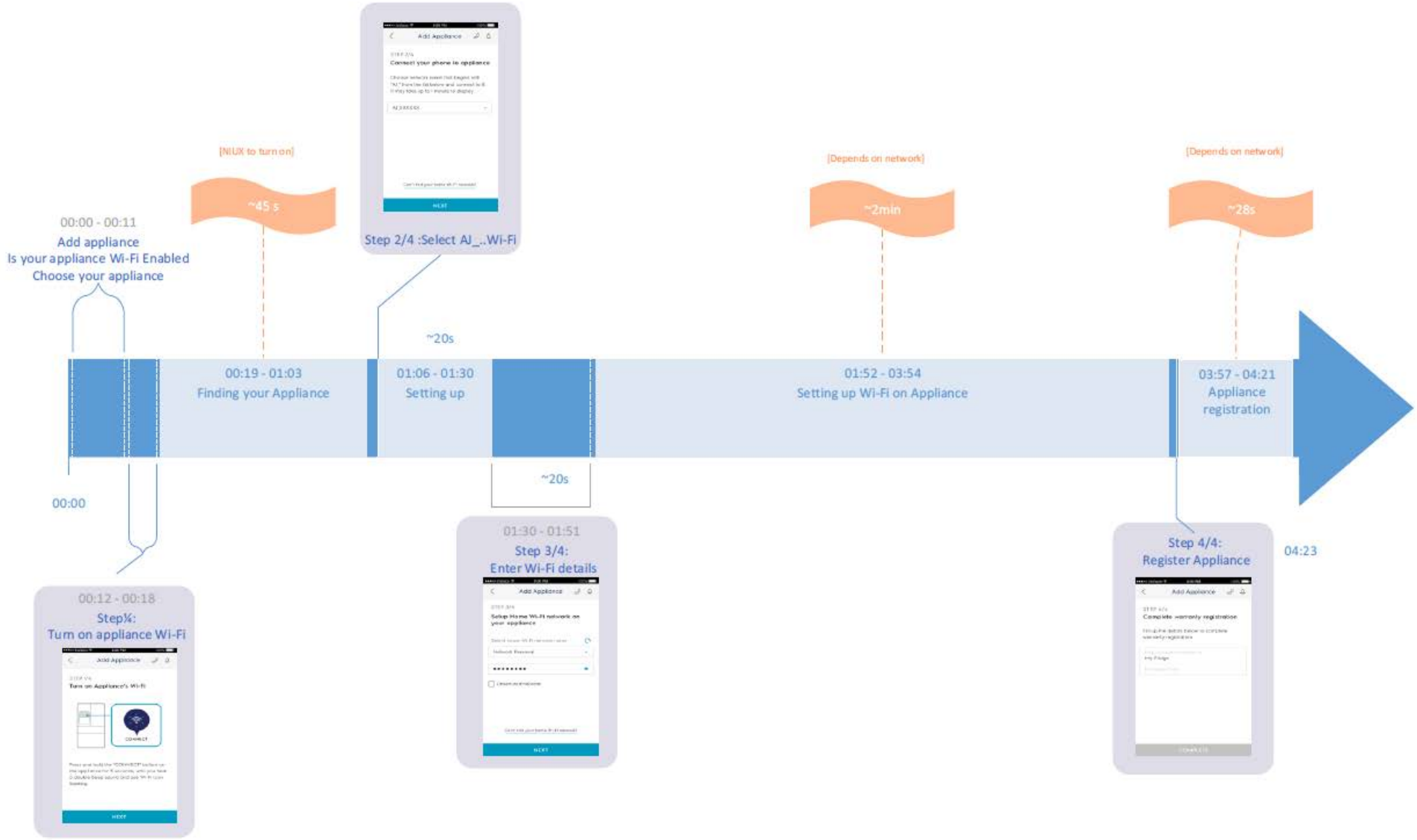
9 The connection success screen should appear.

10 Enter Details of the Appliance (Name and Date of Purchase).
Tap Complete

11 When your appliance is successfully registered, you will be able to see your appliance in appliances tab.

16.4 Add Appliance

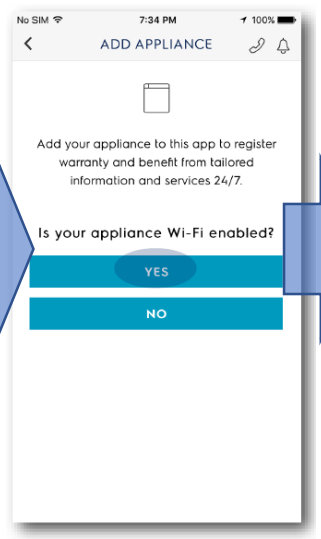
16.4.1 Android (Note : One appliance can only be on boarded by one account. One account can be shared with multiple user.)



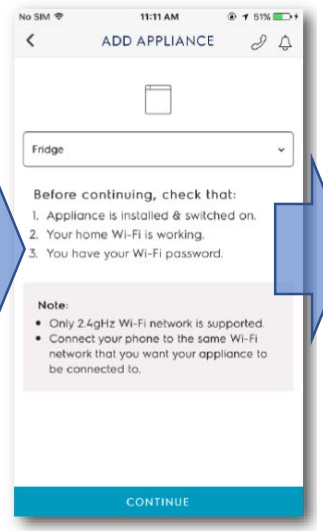
16.4 Add Appliance

16.4.2 IOS (Note : One appliance can only be on boarded by one account. One account can be shared with multiple user.)

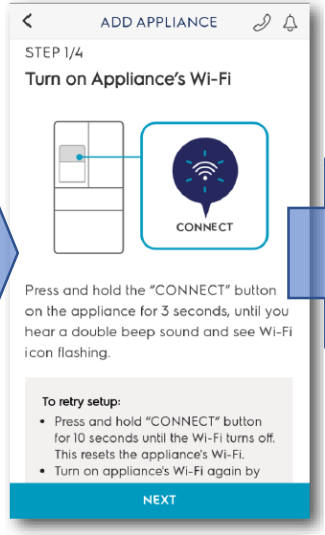
1 To start registering an Appliance, go to Appliance Tab



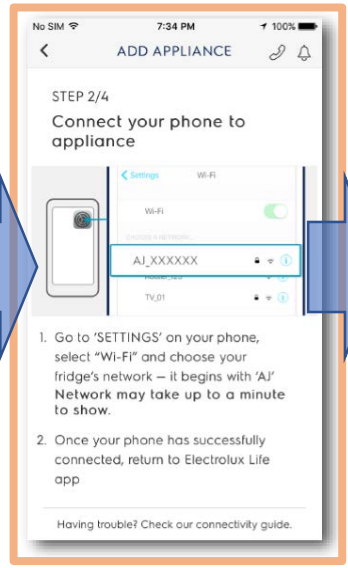
2 Tap Yes.



3 Choose your Wi-Fi enabled appliance. Tap continue.



4 Turn on appliance's Wi-Fi by pressing connect button for 3 seconds until you hear a beep sound. Wait few seconds then tap Next.



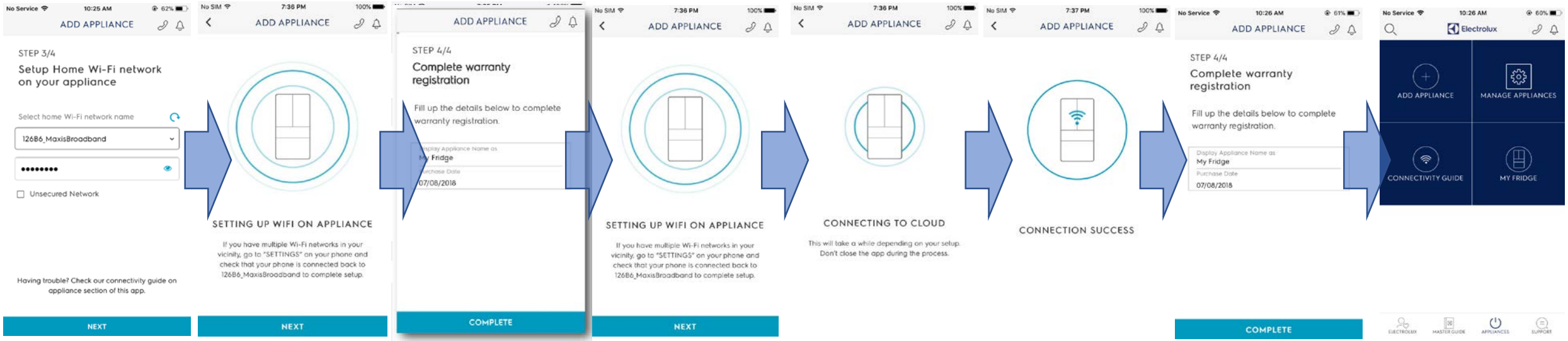
5 Go to your phone's Wifi settings

6 Select the appliance Wifi, it should start with "AJ_...". It might take a minute for the Wifi to show up..

7 Go back to the app Wait (Around 40s) until the "Next" button turns blue.

16.4 Add Appliance

16.4.2 IOS (Note : One appliance can only be on boarded by one account. One account can be shared with multiple user.)



9 Select home Wi-Fi network, and enter credentials.

10 Wait while the appliance is connecting. Do not close the app. In this step, you will have to connect to the network you selected in step 9.

11 Go back to settings, connect the network you selected in step 9

12 Now go back to the app and tap Next.

13 Wait while the app is connecting.

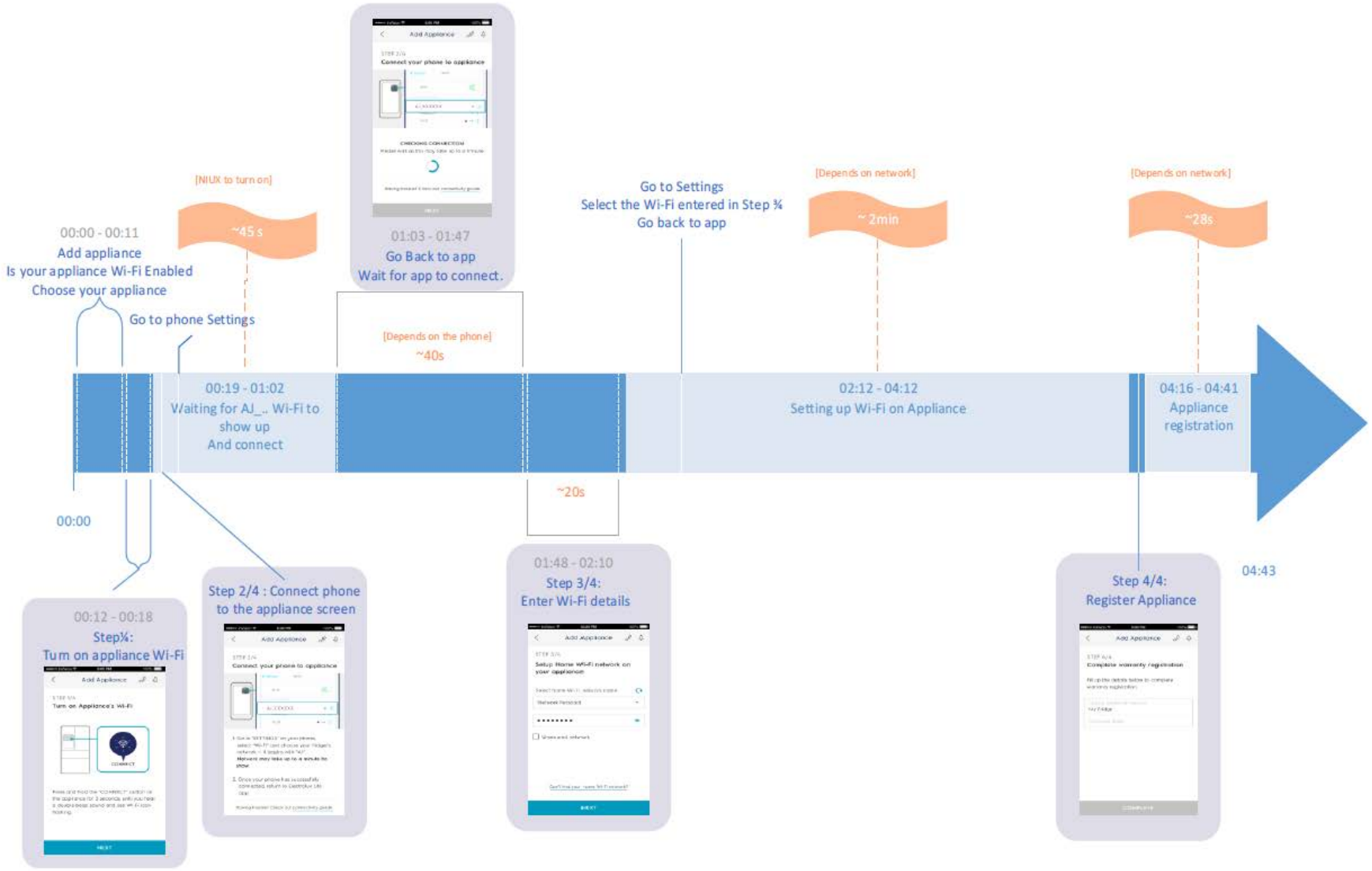
The connection is successful.

14 Enter Details of the Appliance (Name and Date of Purchase).

When your appliance is successfully registered, you will be able to see your appliance in appliances tab.

16.4 Add Appliance

16.4.2 IOS (Note : One appliance can only be on boarded by one account. One account can be shared with multiple user.)



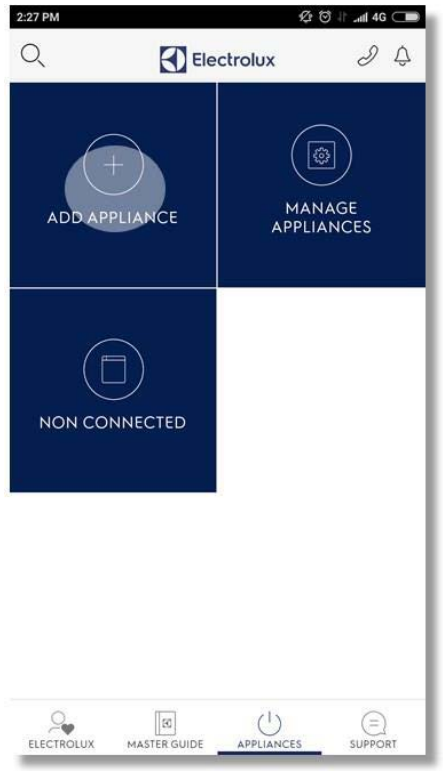
16.5 Troubleshooting

1) Scenario: User can’t find the Appliance Section

User is unable to find the relevant section where he can add appliances.

Solution

Confirm with consumer if he /she can see the four navigation items in the bottom. Ask Consumer to Click on Appliances and then on tab called "Add Appliance".



2) Scenario: ’Add Appliance’ function fails

User gets an error when he taps on Add Appliance.

Solution

Please correct **Customer information**

- **Customer phone model**
- **Customer phone system (IOS or Android version)**
- **Customer account E-mail (Minimum request)**
- **APP. version(Minimum request)**

Then send information to service supervisor for raise a ticket with the IT Team.

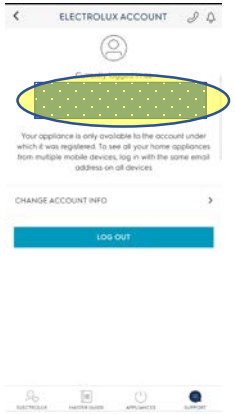
How to check Create account E-mail

1) Tab “Support”

2) Tab “SETTINGS”

3) Tab “Electrolux Account”

4) Record E-Mail.



16. Electrolux Life Mobile Application

How to check Electrolux Life version

1) Tab “Support” 2) Tab “SETTINGS” 3) Tab “APP SETTINGS” 4) Record “APP Version”

3) Scenario: User unable to identify the appliance type

• User needs to select between an IOT appliance and a normal appliance, and does not know if the appliance is connected or not.
• User selects the wrong appliance type and gets the incorrect instructions.

Solution

Run through the on-boarding instructions with the user. Ask Consumer if he / she can identify a "Connect” or "Remote Control" Icon on their appliance.

4) Scenario: User unable to go on with the on-boarding [ERROR-67 ERROR-68]

• Continue button becomes unresponsive, does not perform any action and fails to navigate to other screens.
• Consumer is stuck after selecting appliance type. App crashes or exits
• User is stuck on repeated pop-ups requesting him to turn on their WIFI settings and their location services
• Connect button on the appliance fails and gives error on the app.

Solution

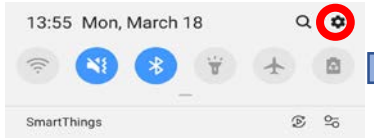
• Request user to turn on their WIFI Setting on their phone.
• Ensure user has also turned on their location services and the app has permissions to access the location services.
• Make sure the user has allowed the app to access location, and media when they are prompt for the permission.
• If all fails, request user to uninstall and re-install the app, and go through Registering connected appliance with them.

The settings can be changed by going into the Device Settings.

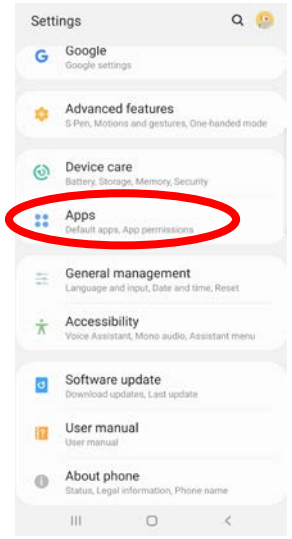
16. Electrolux Life Mobile Application

ANDROID

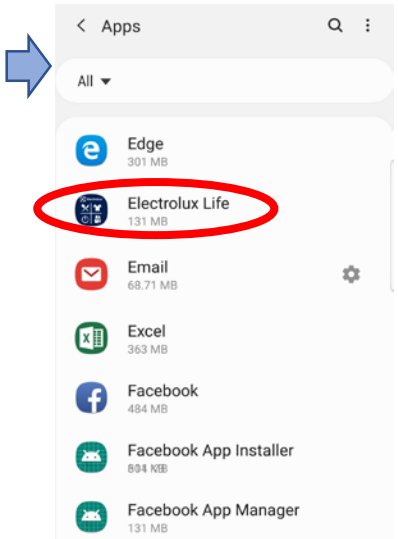
1) Head to the Settings menu. This can be done by tapping the Gear/Cog icon in your notification shade.



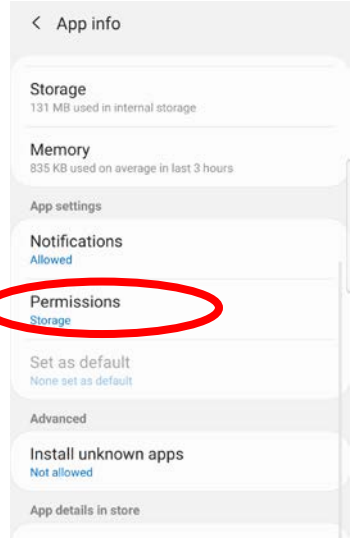
2) Find Apps (or Applications, depending on your device) in the menu,



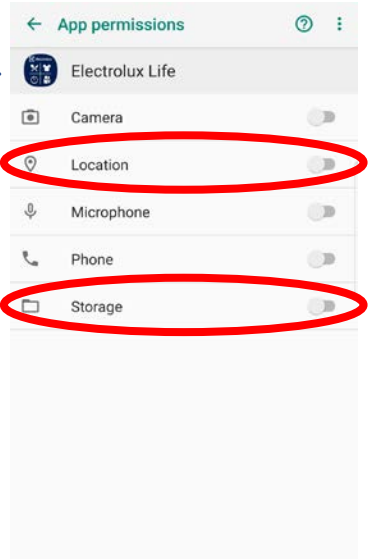
3) Find Electrolux Lift App



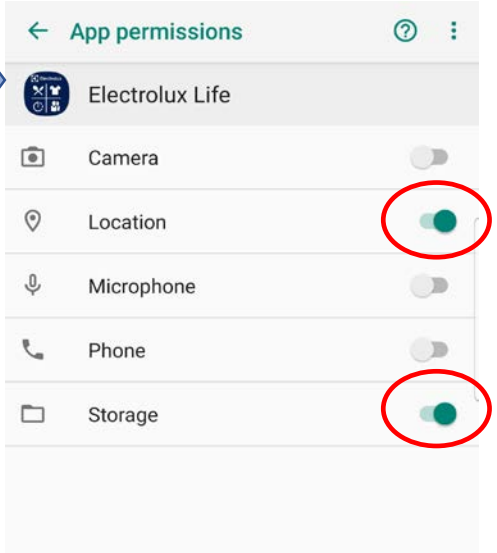
4) Tab "Permissions"



5) To check "Location" and "Storage" should "permission"



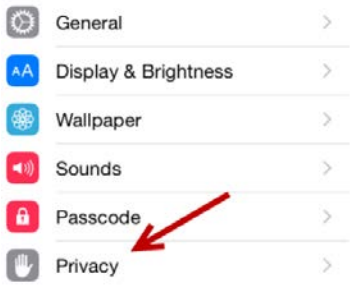
6) Tab for allowed "Location" and "Storage"



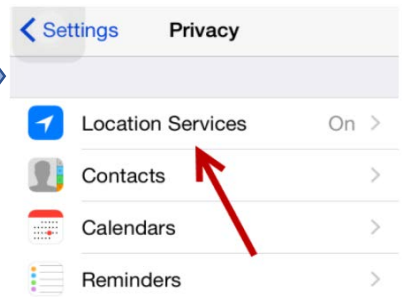
16. Electrolux Life Mobile Application

IOS

1 Go to the home screen, find the **Settings app**, and tap on it.

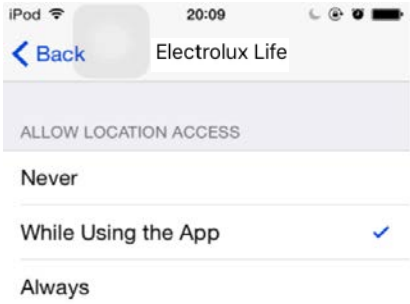


2. In the Settings list, choose the Privacy option.



3. Next, tap the Location Services option at the very top of the list. If the feature is currently off , you will need to turn it on before you can configure location settings for an individual app

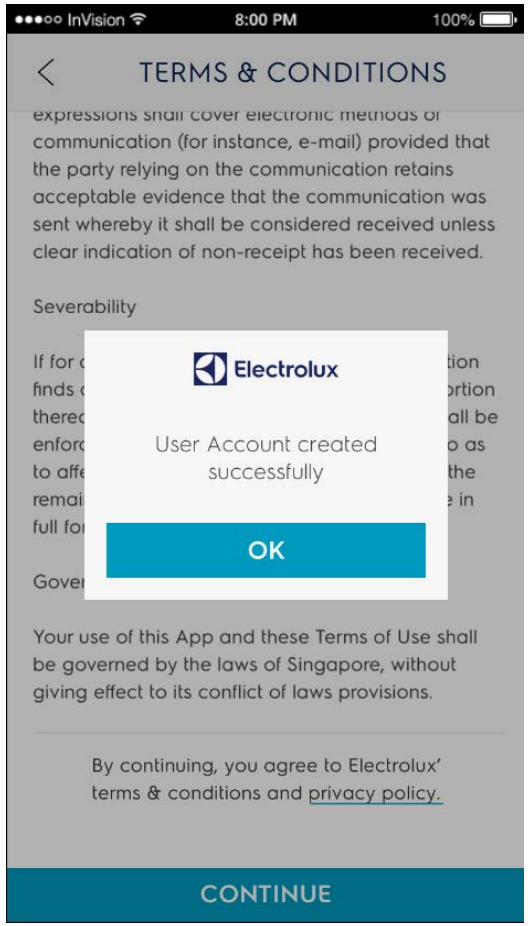
4. This section contains settings for all installed apps that have access to the phone's location feature. Tapping on an app name will take you to the settings page for that app.



5. Depending on the app, you will see all or some of the following options: never, while using the app, and always. Setting the configuration to While Using the App is recommended if you only want the app to access location information when you are using it.

5) Scenario: User does not accept Terms & Conditions

It is mandatory for Consumers to accept the Terms & Conditions to use the services provided in Electrolux Life app. Please educate the user on the list of services and benefits of using the app.



6) Scenario: Appliance is not discoverable [ERROR-54]

- Appliance not in discoverable mode as 3 sec press not done.
- Error Message: Failed to Find Network.
- Appliance is not discoverable after 10 sec long press done.

Solution

- Confirm with user that when he /she taps the "Connect" button on the appliance for more than 10 seconds and then again for 3 seconds, they're able to see a blinking Wi-Fi icon on the appliance.
- Run through the steps of registering connected appliance with the user.
- Consumer might need to RESET his appliance Press the CONNECT button for more than 10 seconds.
- Request consumer to try again, walk through each on-boarding step on the phone.

If issue persists, Please correct **Customer information**

- **Customer phone model**
- **Customer phone system (IOS or Android version)**
- **Customer account E-mail (Minimum request)**
- **APP. version(Minimum request)**

Then send information to service supervisor for raise a ticket with the IT Team.

It is highly possible that Consumer Wi-Fi router or our appliance has a problem.

This issue might require a service visit if it does not get fixed in two tries.

7) Scenario: User can't connect to the home Wi-Fi [ERROR-49]

- User is unable to continue with on-boarding because Wi-Fi Network is missing.
- Wi-Fi configuration does not accept the password provided by user.
- SSID or Hotspot not powered on.

Solution

- Confirm with user that they're using 2.4 GHz Wi-Fi at their house.
- Confirm with user that the Wi-Fi setting on the phone is turned on.
- Confirm with consumer if he's using a hidden hotspot, if yes, the consumer needs to add the hotspot name / SSID name manually.
- Confirm with Consumer if his home router is turned on and other devices are working fine.

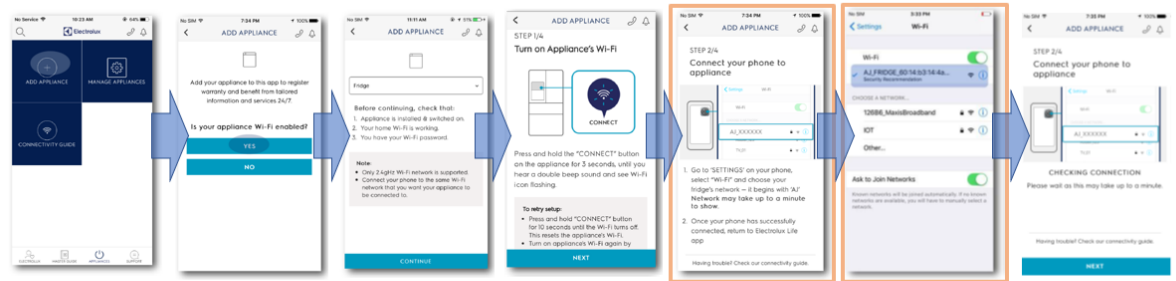
Tap on the "Can't find your home Wi-Fi Network?" link.

8) Scenario: Incorrect Wi-Fi network error -IOS

Solution

On iOS, user should go to Settings and manually change the Wi-Fi network to the one he entered in the previous step. Please walk the consumer through IOS set up steps.

16.4.2 IOS (Note : One appliance can only be on boarded by one account. One account can be shared with multiple user.)



1 To start registering an Appliance, go to Appliance Tab

2 Tap Yes.

3 Choose your Wi-Fi enabled appliance. Tap continue.

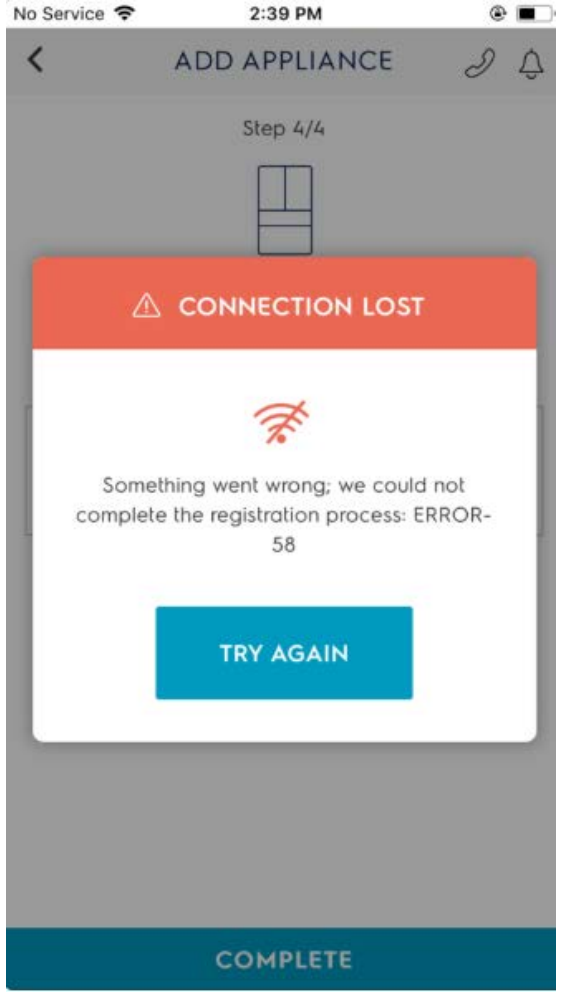
4 Turn on appliance's Wi-Fi by pressing connect button for 3 seconds until you hear a beep sound. Wait few seconds then tap Next.

5 Go to your phone's Wifi settings

6 Select the appliance Wifi, it should start with "AJ_...". It might take a minute for the Wifi to show up..

7 Go back to the app Wait (Around 40s) until the "Next" button turns blue.

9) Scenario: User Failed to register appliance [ERROR-30 ERROR-58]



9) Scenario: User Failed to register appliance [ERROR-30 ERROR-58]

• The setup process fails before completion.
• On Register appliance screen consumer faces an issue due to Network issue.

Solution

• Make sure user is connected to the same network as that of the Appliance (indoor/home network).
• Confirm with user that they're using 2.4 GHz Wi-Fi at their house.
• Confirm with user that the Wi-Fi setting on the phone is turned on, and that the connection is working properly. You may ask them to go to Google and search for a newspaper page and check if the page is correctly loaded.
• Request consumer to erase data and try again, walk through each on-boarding step on the phone. It is highly possible that Consumer Wi-Fi router or the appliance has a problem, go through Wi-Fi troubleshooting with them.

If issue persists, Please correct **Customer information**

- **Customer phone model**
- **Customer phone system (IOS or Android version)**
- **Customer account E-mail (Minimum request)**
- **APP. version(Minimum request)**

Then send information to service supervisor for raise a ticket with the IT Team.

10) Scenario: Purchase date not accepted

Consumer enters an incorrect purchase date or forward dated purchase date that does not match with back end data and throws error.

Solution

Inform consumer that the purchase date is the not the delivery date, it is the date on which the order was placed.

11) Scenario: Incorrect information about user's appliance

• Information provided does not match with the appliance.
• Information provided is partial and does not displays/scrolls the complete information.

Solution

Something could have went wrong - apologies to consumer and request him to log on to the website for more information.

13) Scenario: The appliance registered is missing

User can't find his appliance after a successful On-boarding.

14) Scenario: Appliance does not respond to remote control commands

• In spite of successful on boarding, any action sent via App is not acknowledge by the appliance and user is notable to remote control the appliance.
• Instructions sent from the app perform undesired actions on the appliance.
• User does not receive any notifications or alerts.

Solution

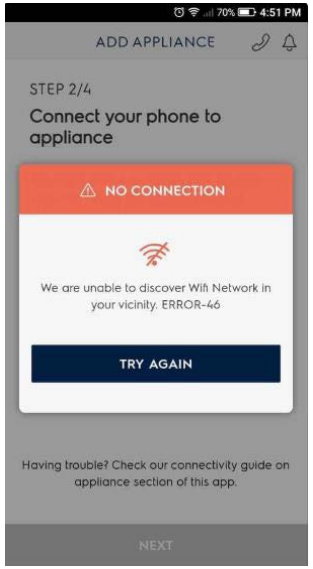
• Request consumer to restart his mobile app and network router.
• Confirm with consumer if the WIFI network and data are working as expected.– if the issue is still not resolved – request consumer to set up the appliance again.

If issue persists, Please correct Customer information

- Customer phone model
- Customer phone system (IOS or Android version)
- Customer account E-mail (Minimum request)
- APP. version(Minimum request)

Then send information to service supervisor for raise a ticket with the IT Team.

15) Scenario: User can't connect their phone to the appliance. [ERROR-46]



Solution

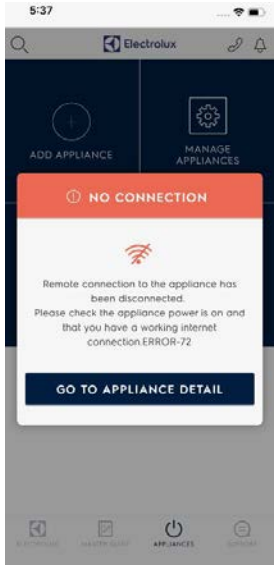
- User needs to restart the app and try again.
- Make sure user have working Wi-Fi connection
- Make sure Appliance Wi-Fi is on and blinking.
- If the error persists, log a ticket with IT

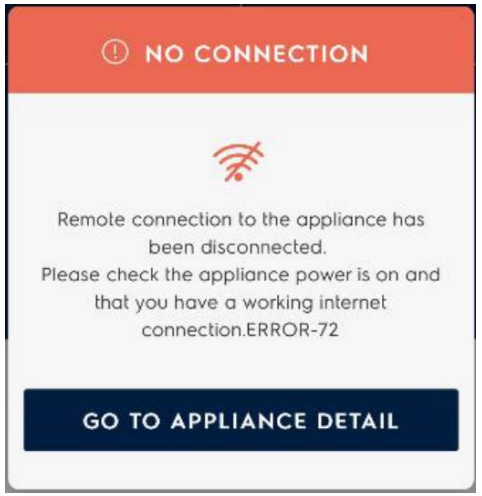
If issue persists, Please correct Customer information

- Customer phone model
- Customer phone system (IOS or Android version)
- Customer account E-mail (Minimum request)
- APP. version(Minimum request)

Then send information to service supervisor for raise a ticket with the IT Team.

16) Scenario: Remote connection to the appliance has been disconnected [ERROR-70, ERROR-72]



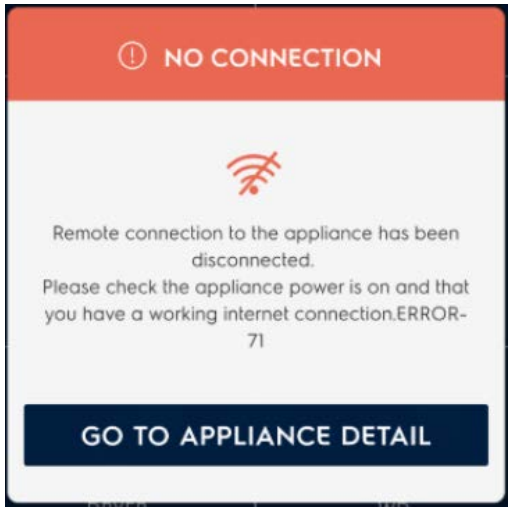


Solution

- Request consumer to restart his mobile app and network router.
- Confirm with consumer if the WIFI network and data are working as expected.– if the issue is still not resolved – request consumer to set up the appliance again–
- If issue persists, Please correct Customer information
  - Customer phone model
  - Customer phone system (IOS or Android version)
  - Customer account E-mail (Minimum request)
  - APP. version(Minimum request)

Then send information to service supervisor for raise a ticket with the IT Team.

17) Scenario: Remote connection to the appliance has been disconnected [ERROR-71]



• Appliance is showing Connecting and consumer presses on it.

Solution

• Consumer needs to wait few seconds until the appliance is connected before pressing the tile after restarting the app.
• Request consumer to restart his mobile app and network router.
• Confirm with consumer if the WIFI network and data are working as expected.–

• If issue persists, Please correct Customer information
  - Customer phone model
  - Customer phone system (IOS or Android version)
  - Customer account E-mail (Minimum request)
  - APP. version(Minimum request)

Then send information to service supervisor for raise a ticket with the IT Team.

18) Scenario: Wi-Fi troubleshooting

• The Onboarding has to be performed in front of the appliance.
• During the Onboarding the Wi-Fi network that is chosen during the procedure must be the same as the one where the device was connected before the beginning of the process.
• If there are more Wi-Fi networks already used with the device around the user during the Onboarding, it would be better to disassociate them all and keep only the selected one.

Low signal, how to discover it

• Empirical way: with the chosen device stand in front of the appliance and try to visualize a video on YouTube using only Wi-Fi connection. Disable data connection or enable Flight mode (you can double-check the activation, checking the presence of the Wi-Fi icon. No exclamation marks or attention icons).
Check that the router is turned on. User can turn it off and on again in order to reset it.

• Wi-Fi diagnosis App:
-For Android: Wi-Fi Analyzer
https://play.google.com/store/apps/details?id=com.farproc.wifi.analyzer
-For iOS "Ar signal master".

 Verify that no one is using the Wi-Fi connection intensively (watching movies, updating devices, online gaming, peer to peer file sharing...), when trying to connect to the appliance.

Most common issues and how to solve them
• ADSL service not synchronized or network not available: Usually the status lights indicating that POWER or INTERNET are on, blink or off: only in the first case, the status is ok. Restarting the router is always a good way to solve network's issues.
• Verify that PIN code of your SIM is not enabled.
• Verify that the SIM card is correctly configured.
• Make sure that all cables are securely attached: Ethernet, power and ADSL wires.
• Verify device's temperature: keep it away from radiators or heat and do not put it inside drawers.
• Relocate the router: obstacles and radio interference might affect the connection quality.
• Reset your device: Use a sharp object like a pen to press the reset button and go back to factory settings.
• Change router's Wi-Fi channel: in the control panel, accessible from the address written in the manual, it is possible to change communication's radio frequency.
• Ping: advanced users can check connection's status of their Internet service provider through online tools or from their PC through code strings.
• Make sure that the anti-virus or security software on your computer is up to date.
• Run a full anti-virus scan on your computer. Computer virus and other malicious software you may have downloaded unknowingly can cause browsing issues.

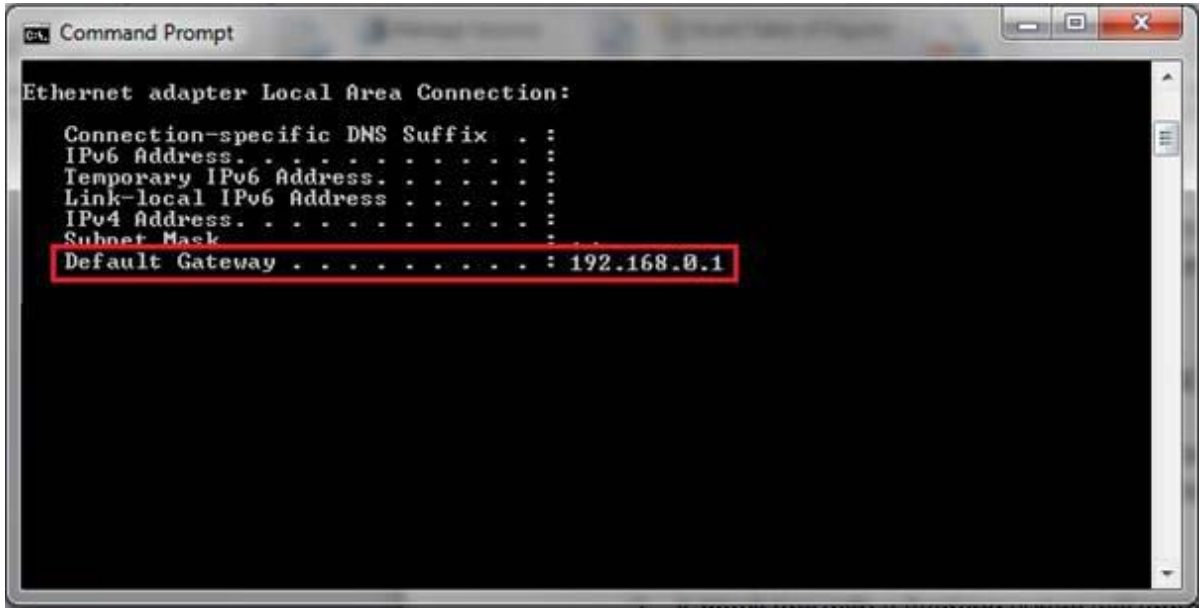
• As a last resort, disable your anti-virus and firewall software temporarily. Some anti-virus and firewall software can cause your Internet connection to behave abnormally.

Find out Home Wi-Fi Frequency

To access your settings on a computer or tablet connected to your Wi-Fi home network, open a web browser and enter 192.168.0.1 Choose “Wi-Fi” or Wireless Settings.

Your home Wi-Fi information will be displayed. (Including Wi-Fi frequency).

If the address 192.168.0.1 doesn’t work, user can find out their Default Gateway Address by typing ipconfig in the Command Prompt. Next to Default Gateway, the address will be listed



Notes

• All Wi-Fi routers have a 2.4 GHz band.

• Newer routers are often dual-band router, with 2.4 GHz and 5 GHz bands.

• If both of 2.4 GHz and 5 GHz Wi-Fi bands have the same name (SSID) and password, user can connect to any of them.

• Most home wireless routers will automatically switch to 2.4 GHz band as the Wi-Fi connected device moves further away from the gateway. This is because 2.4 GHz works better than 5 Ghz over distance and if there are walls between Wi-Fi device and gateway.

16.6 Error Massage

16.6.1 Network error messages

If the user has a 2G or 3G connection, the app will display a pop-up.

Remote Control commands and Monitor events may not be properly updated during such a state.

Network Type	RSSI Range	Message
No network	Irrespective of network rang/strength	No internet connection
2G	Irrespective of network rang/strength	Experiencing poor internet connection.
3G	Irrespective of network rang/strength	Experiencing poor internet connection.
4G/LTE	Depending on the range	Experiencing poor internet connection.
WIFI	Depending on the range	No message here yet

16.6.2 Foundational Errors

For the below ERROR CODES please open a ticket to IT.

Error Code	Description	Message
-	Failed to contact server - General Error	An error has occurred please try again later.
ERROR-01	Cannot Connect to the MFP Server	Unable to Connect to the Server. Please try again later. Error-01
ERROR-02	Authentication Failed with MFP server/MFP Certificate Mismatch	Unable to Connect to the Server. Please try again later. Error-02
ERROR-03	User Login Failure (User ID and Password match failure)	Authentication Failed. Please enter correct credentials
ERROR-04	Password Reset Failure	
ERROR-05	Generic Service (Common Error Handling)	Something went wrong; we could not complete the requested operation. Error-05
ERROR-06	Cloudant Failures(Shopping List, Favorites, Appliance Detail)	Something went wrong; we could not complete the requested operation. Try again. Error-06
ERROR-07	User Already Exists	
ERROR-08	InstaEdge API Validations	Appliance already exists. Enter correct information Append -Error-08
ERROR-09	InstaEdge API not reachable / not working	Unable to Connect to the Server. Please try again later. Error-09
ERROR-10	Watson Content Hub content not available.	Unable to Connect to the Server. Please try again later. Error-10
ERROR-11	Facebook Authentication Failed	
ERROR-12	Facebook Email used for Password Reset	This email address is linked to a Facebook account. Please login via Facebook to continue. Password reset is not applicable. ERROR-12
ERROR-25	registerUserAsync SDK error	We are having an issue retrieving your profile; Please restart the app and try again later. Error-25
ERROR-26	registerUserAsync Email id already registered, but not synced to Cloudant	We are having an issue retrieving your profile; Please restart the app and try again later. Error-26

Error Code	Description	Message
ERROR-27	sessionKey Failure error	We are having an issue retrieving your profile; Please restart the app and try again later. Error-27
ERROR-28	onBoarding response Cloudant sync error	We are having an issue retrieving your profile; Please restart the app and try again later. Error-28
ERROR-29	Register Appliance cloudant sync error	We are having an issue retrieving your profile; Please restart the app and try again later. Error-29

Solution

Please correct **Customer information**

- **Customer phone model**
- **Customer phone system (IOS or Android version)**
- **Customer account E-mail (Minimum request)**
- **APP. version(Minimum request)**

Then send information to service supervisor for raise a ticket with the IT Team.

16.6.3 Industry Standard Error Codes for Backend issues

Error Code	Description	Message
Error-400	400 - Bad request structure. The error can indicate an error with the request URL, path or headers.	We are unable to process your action. Try again later. Error-400
Error-401	401 - Unauthorized. The item requested was not available using the supplied authorization, or authorization was not supplied.	You are not authorized to access. Error-401
Error-403	403 - Forbidden. The requested item or operation is forbidden.	You are not authorized to access. Error-403
Error-404	404 - Not Found. The requested resource could not be found. The content includes further information as a JSON object, if available. The structure contains two keys, error and reason	We are unable to process your action. Try again later.Error-404
Error-405	405 - Resource Not Allowed. A request was made using an invalid HTTP request type for the URL requested. For example, you have requested a PUT when a POST is required. Errors of this type can also be triggered by invalid URL strings.	We are unable to process your action. Try again later. Error-405
Error-406	406 - Not Acceptable. The requested content type is not supported by the server.	We were not able to process your request. Error-406
Error-413	413 - Request Entity Too Large. The maximum request body size for an API request sent to Cloudant NoSQL DB on IBM Bluemix is 1 MB. We were not able to process your action or request.	Try again later. Error-413

Error Code	Description	Message
Error-415	415 - Bad Content Type. The content types supported, and the content type of the information being requested or submitted indicate that the content type is not supported.	We were not able to process your request. Error-415
Error-429	429 - Too Many Requests. The user has sent too many requests in a given amount of time.	We are a little busy right now. Try again later. Error-429
Error-500	500 - Internal Server Error. The request was invalid, either because the supplied JSON was invalid, or invalid information was supplied as part of the request. Alternatively, a replication was canceled while in progress.	We were not able to process your request. Error-500
Error-503	503 - Service Unavailable. The request could not be processed.	Something went wrong. This service is not available at the moment. Try again later. 503

Solution

Please correct **Customer information**

- **Customer phone model**
- **Customer phone system (IOS or Android version)**
- **Customer account E-mail (Minimum request)**
- **APP. version(Minimum request)**

Then send information to service supervisor for raise a ticket with the IT Team.

16.6.4 Error Codes/Messages and resolution

ERROR CODE	DESCRIPTION	RESOLUTION
ERROR-30	Create User Operation in ECP Fails " We are having an issue retrieving your profile ; Please restart the app and try again later. Error-30"	- User needs to restart the app, and reset connecting the appliance by pressing the Remote button on UI for 15 seconds and restart the on-boarding again. If the error persists, log a ticket with IT
ERROR-46	Consumer cannot discover the WIFI network **"We are unable to discover Wi-Fi Network in your vicinity. ERROR-46"** **Scenario: User can't connect their phone to the appliance**	User needs to restart the app and try again. Make sure user have working Wi-Fi connection. Make sure Appliance Wi-Fi is on and blinking. If the error persists, log a ticket with IT
ERROR-49	Unable to find network during On-boarding "We are unable to find the Wi-Fi network. ERROR49" Scenario: User can't connect to the home Wi-Fi	Try Again User is redirected to "Step 1/4" Screen **Scenario: User can't connect to the home Wi-Fi**
ERROR-54	Failed to find appliance pop-up alert "Failed to Find Appliance. ERROR-54" **Scenario : Appliance is not discoverable**	User is redirected to "Step 1/4" Screen User needs to restart the app and try again. **This issue might require a service visit if it does not get fixed in two tries.**
ERROR-57	Enrollment Failed or Timed Out "We could not complete the device enrollment process: ERROR-57"	- User is redirected to "Step 1/4" Screen Ask consumer to off-board (reset) the appliance by pressing the connect butt for15 seconds and restart the on-boarding again If the error persists, log a ticket with IT
ERROR-58	Register Appliance fails " We could not complete the registration process: ERROR-58" Scenario: User Failed to register appliance. **Scenario: User Failed to register appliance**	- User is redirected to "Step 1/4" Screen Ask consumer to off-board (reset) the appliance by pressing the connect butt for15 seconds and restart the on-boarding again If the error persists, log a ticket with IT

ERROR CODE	DESCRIPTION	RESOLUTION
ERROR-67	Appliance discovery failure when Wi-Fi is off " The WI-FI setting on your phone seems to be turned off - Please turn on the WI-FI setting and connect to your preferred home network (2.4 GHz). ERROR-67" **Scenario : User unable to go on with the on-boarding**	User needs to turn on their phone Wi-Fi settings
ERROR-68	Appliance discovery failure when location is off “The location services / manager on your device seems to be turned off - Please turn on the location services / manager and ensure that the app has the permissions to access the location services. ERROR-68" **Scenario : User unable to go on with the on-boarding**	User needs to turn on their phone location settings.
ERROR-70	Connectivity API gives Disconnected Value “Remote connection to the appliance has been disconnected. Please check the appliance power is on and that you have a working internet connection.ERROR-70"	User needs to restart the app and try again. If the error persists, log a ticket with IT **Scenario: Remote connection to the appliance has been disconnected**
ERROR-71	SDK Subscription fails three times “Remote connection to the appliance has been disconnected. Please check the appliance power is on and that you have a working internet connection. ERROR-71"	After restarting the app user needs to wait few seconds for the appliance to connect. If the error persists, log a ticket with IT **Scenario: Remote connection to the appliance has been disconnected**
ERROR-72	REVOKED Scenario (where user does not have access to the appliance any more) “Remote connection to the appliance has been disconnected. Please check the appliance power is on and that you have a working internet connection. ERROR-71"	User needs to restart the app and try again. If the error persists, log a ticket with IT **Scenario: Remote connection to the appliance has been disconnected**

16.6.5 Failure from SDK interactions

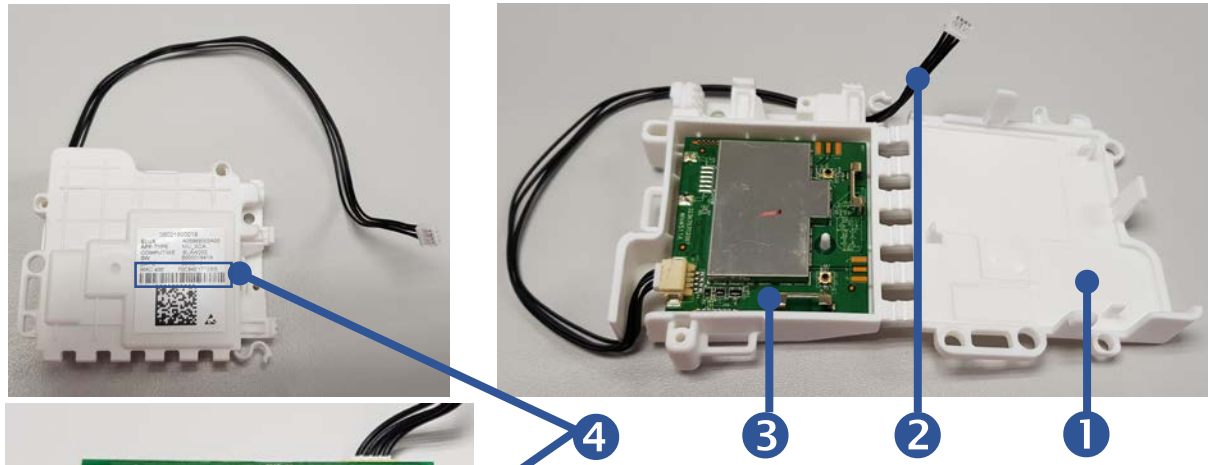
Operation	Stage / Screen	Possible Reasons	Possible Error handling actions
Create ECP User	Delay screen in onboarding after appliance type selection, if current user is not registered on ECP, make SDK call to register user.	- Some temporary issue with ECP Show - Network error	Generic error "Something went wrong, try again later ..." and return to appliance screen
Fetch session key	If create ECP User succeeds, fetch session key for that user.	- Some temporary issue with ECP Show - Network error	Show Generic error "Something went wrong, try again later ..." and return to appliance screen.
Discover appliance	Discover appliance screen	- Appliance not in discoverable mode as 3 sec press not done. - Appliance was already on boarded, so not discoverable until the user long presses the connect button for more the done. - Appliance switched off.	App cannot distinguish between these errors,so display a generic error suggesting all possible troubleshooting steps and then offer Retry possibility.
Fetch Wi-Fi from appliance	Post discovery screen, where all fetched Wi-Fi (from appliance) is shown in DropDown.	- Hotspot not powered on - Hotspot is hidden	Show Generic error and offer Retry possibility. - New UI flow required.
Onboard Appliance	Post user selects Wi-Fi	- Password incorrect - Some other error (hotspot got switched off etc). - Also maybe appliance went out of discovery mode (5 min timeout).	Allow user to provide another password and retry Show Generic error and offer Retry possibility.
Register Appliance	Register appliance screen	Network error	Show Generic error and offer ossibility.

17. NIUX

The spare Wi-Fi network interface unit for Fabric Care is made up by three components:

1 Plastic enclosure
2 Communication cable,(connected to the UI in the appliance)
3 Electronic board with antennas (inside the plastic enclosure).

All smart appliances are equipped with a Network Interface Unit (NIU).



In this example the MAC address is:
70C94E1712BB

Each Network Interface Unit has an “unique identity” that is defined through the physical network address of the Wi-Fi interface: the Media Access Control (MAC) address.

The MAC address 4 of the unit is visible in the label(s) attached to the plastic enclosure. The MAC address is a 12-digit hexadecimal string.

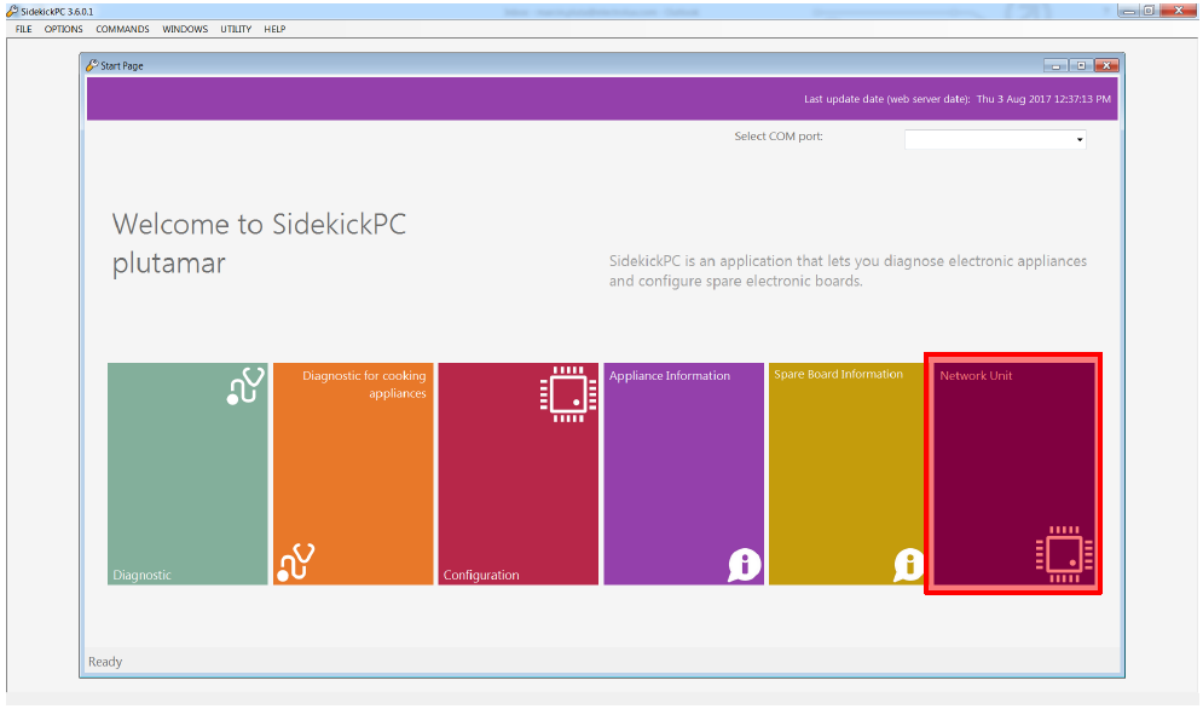
Information “Network Interface Unit”

- The NIUX is a specific type of NIU (NIU LinuX version).
- The electronic board is very sensitive to electro-static discharges (ESD). Avoid opening the plastic enclosure and touching the electronic board, in order to minimize the risk of damages caused by ESD.
- Avoid touching and handling the NIUX unit while the appliance is connected to the mains power supply, in order to avoid the risk of electric shock

NIUX IN THE WASHING MACHINE

18.1 SPARE NETWORK UNIT MANAGEMENT

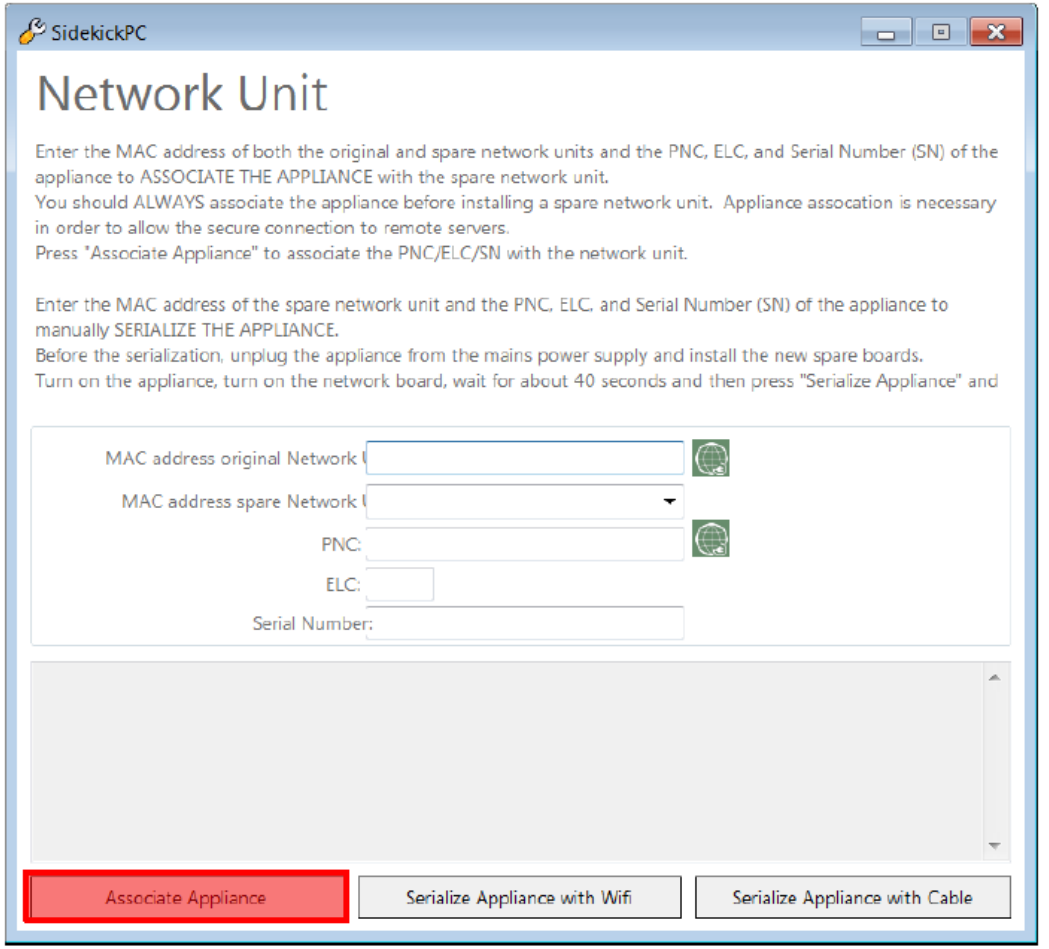
The new Network Unit command in SidekickPC provides the functions for preparing spare network boards before the installation in the appliance.



After selecting the Network Unit command, the corresponding dialog box appears with possible operations:

After selecting the Network Unit command, the corresponding dialog box appears with possible operations:

- **Associate Appliance**
- **Serialize Appliance with Wi-Fi**
- **Serialize Appliance with Cable**



18.2 APLIANCE ASSOCIATION

Information "APLIANCE ASSOCIATION"

- Appliance association is required for security reasons, this operation allows the appliance to securely connect to remote servers.
- The appliance is identified by means of the PNC, ELC and Serial Number.
- Before installing a spare network unit it always has to be associated to the appliance where it will be installed.
- The computer must be connected to the internet when this operation is executed, since the process is updating infomation in the remote Sidekick servers.
- The MAC address of the original spare network unit is requested in order to prevent manual errors.

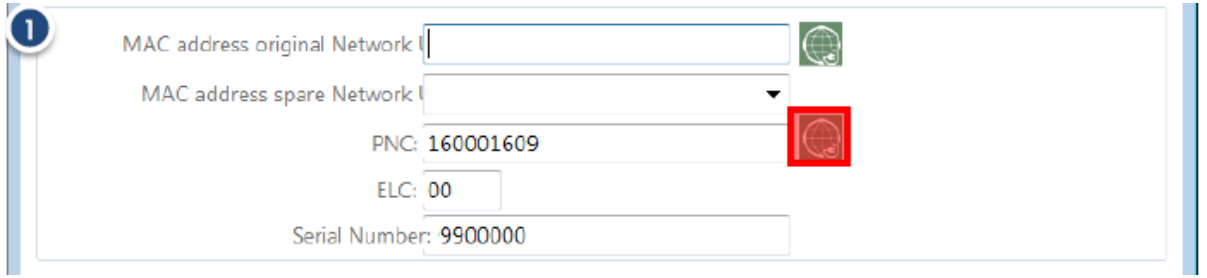
- lets to associate a spare network unit, identified by means of the MAC address, to the appliance where it is going to be installed.
- requires the insertion of all fields in the dialog box.

In order to avoid manual insertion errors, the software provides a couple of useful functions that you can use to get information that you may miss:

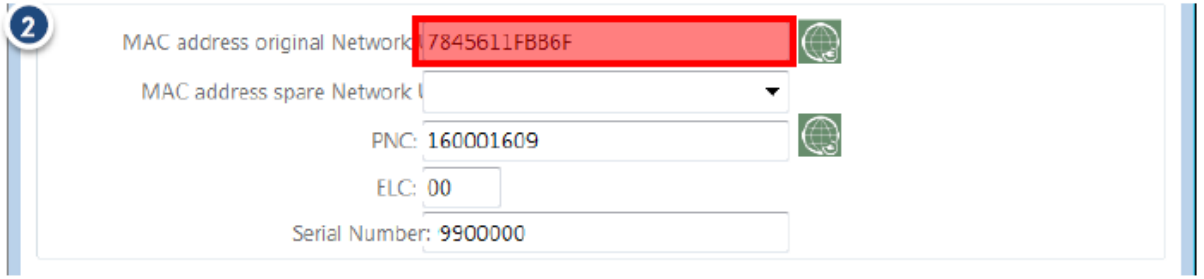
- get the MAC address of the network unit currently installed in an appliance;
- get the PNC, ELC and serial number of the appliance starting from the MAC address of the network unit.

18.2.1 MAC ADDRESS OF THE NETWORK UNIT FROM PNC, ELC AND SERIAL NUMBER

1) To get the MAC address of the NIU currently installed in an appliance, insert the PNC, ELC and serial number and press the command button at the right side of the PNC field (when this operation is executed the computer must be connected to the internet).

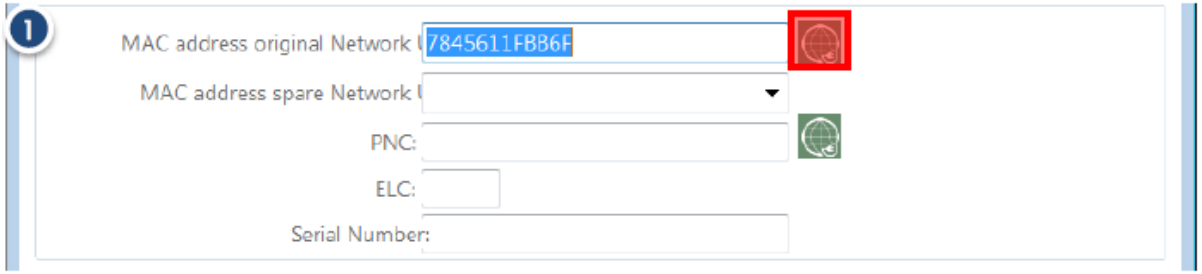


2) The MAC address field is populated with the corresponding piece of information after the button was pressed (described in step 1) to get the MAC address of the NIU.

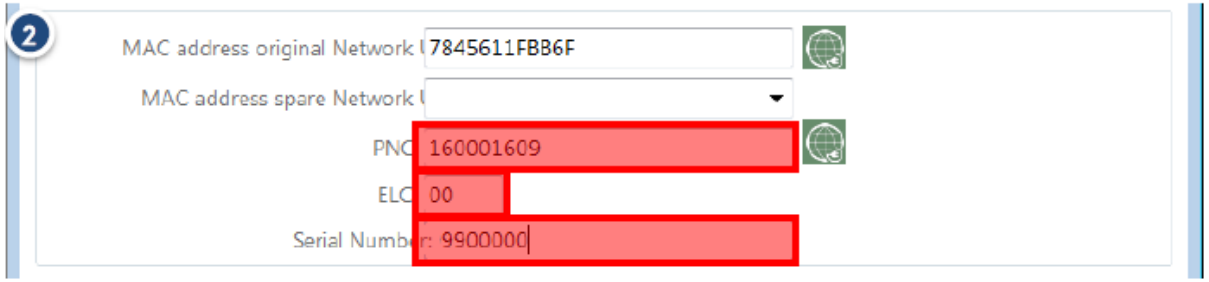


18.2.2 PNC, ELC AND SERIAL NUMBER FROM THE MAC ADDRESS

1) To get the PNC, ELC and serial number of the appliance starting from the MAC address of the currently-installed network unit, insert this value in the corresponding field and press the command button at the right side of the field (when this operation is executed the computer must be connected to the internet).



2) The PNC, ELC, and Serial Number fields are populated with the corresponding pieces of information after the button was pressed(described in step 1).

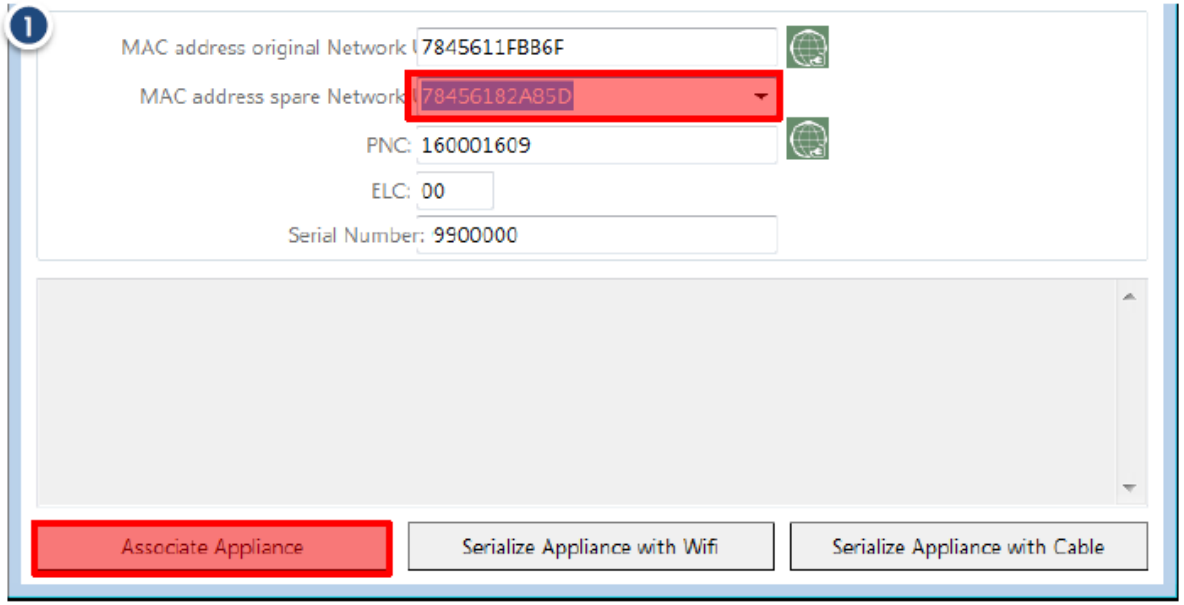


18.2.3 ASSOCIATE APPLIANCE

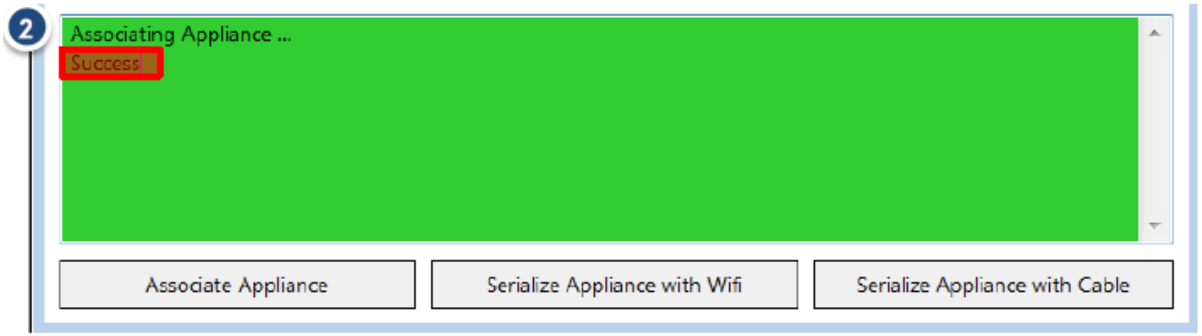
Information "MAC address spare Network"

- Appliance Association requires the manual insertion of the MAC address of the spare network unit that is going to be installed.
- Before executing the command, please double-check if the inserted MAC address is correct. If the value is wrong the operation will not succeed.

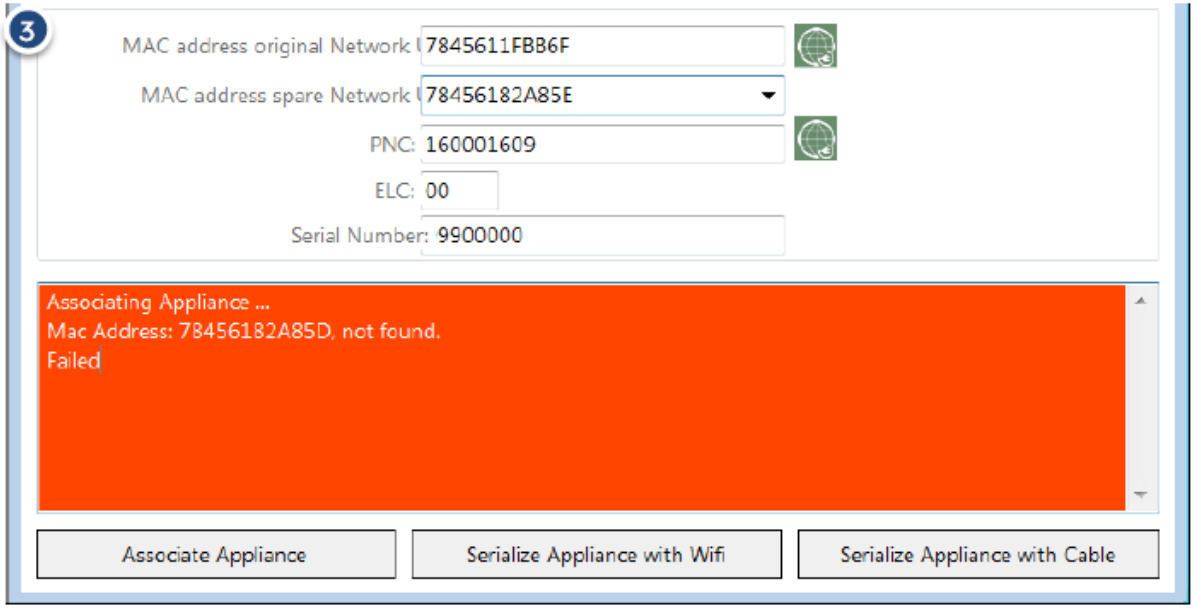
1) When the inserted value is correct, select the "Associate Appliance" command when this operation is executed the computer must be connected to the internet).
This operation updates information about this appliance in Electrolux remote servers.



2) If the operation succeeds, the “Success” message appears in the text box.



3) The system prevents user from defining one invalid MAC address that does not belong to a valid spare board.
In this case the software issues an error and the “Failed” message appears in the text box.



18.3 SERIALIZATION

Information “Appliance Serialization”

- This operation normally occurs in the factory during manufacturing. Appliance serialization data are replicated from the network board to at least one internal module
- In Fabric Care appliances, serialization data are replicated from the NIUX module to both the Main Board and the User Interface.
- Serialization data in spare boards is of course missing. When you replace one or two of the above boards, serialization data is copied to the spare boards when you first turn on the NIUX unit after installation. This process is called automatic serialization.
- Appliance Serialization consists in storing in the internal electronic unit(s) the information on appliance identity (PNC, ELC and Serial Number)
- In Fabric Care appliances “**manual serialization”** is required when you replace the NIUX module, the Main Board and the User Interface at the same time
- Manual serialization of an appliance is only possible after the execution of the Appliance Association for the same appliance.

If it is necessary to replace at the same time the NIUX module and all internal boards that store the identity of the appliance, the serialization process must be executed.

18.3.1 AUTOMATIC SERIALIZATION

Appliance Serialization consists in storing in the internal electronic unit(s) the information on appliance identity (PNC, ELC and Serial Number).

This operation normally occurs in the factory during manufacturing. Appliance serialization data are replicated from the network board to at least one internal module.

In Fabric Care appliances, serialization data are replicated from the **NIUX module** to both the **Main Board** and the **User Interface.** Serialization data in spare boards is of course missing.

When you replace one or two of the above boards, serialization data is copied to the spare boards when you first turn on the NIUX unit after installation. This process is called **automatic serialization**.

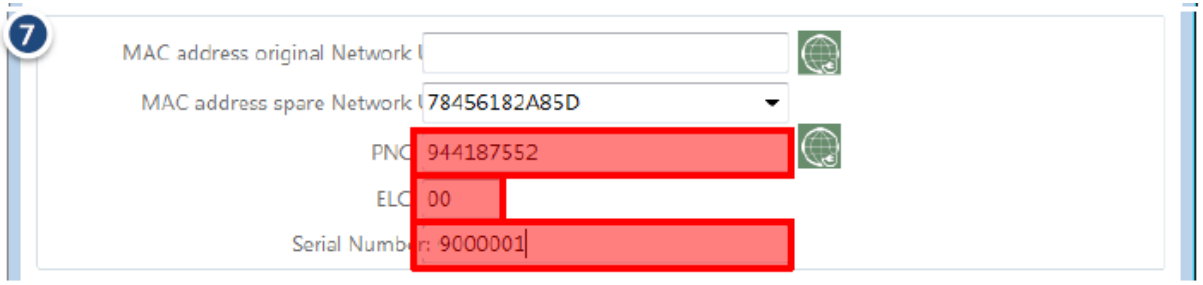
However, in case you must replace the Main Board, User Interface and in the NIUX module at the same time, automatic serialization is not possible. Only in this case you must use SidekickPC and execute the **manual serialization** of the appliance.

Currently manual serialization of Fabric Care appliances occurs with the DAAS interface. Therefore the “Serialize Appliance with Cable” command must be used. In future, Fabric Care appliances will support the serialization through the Wi-Fi interface.

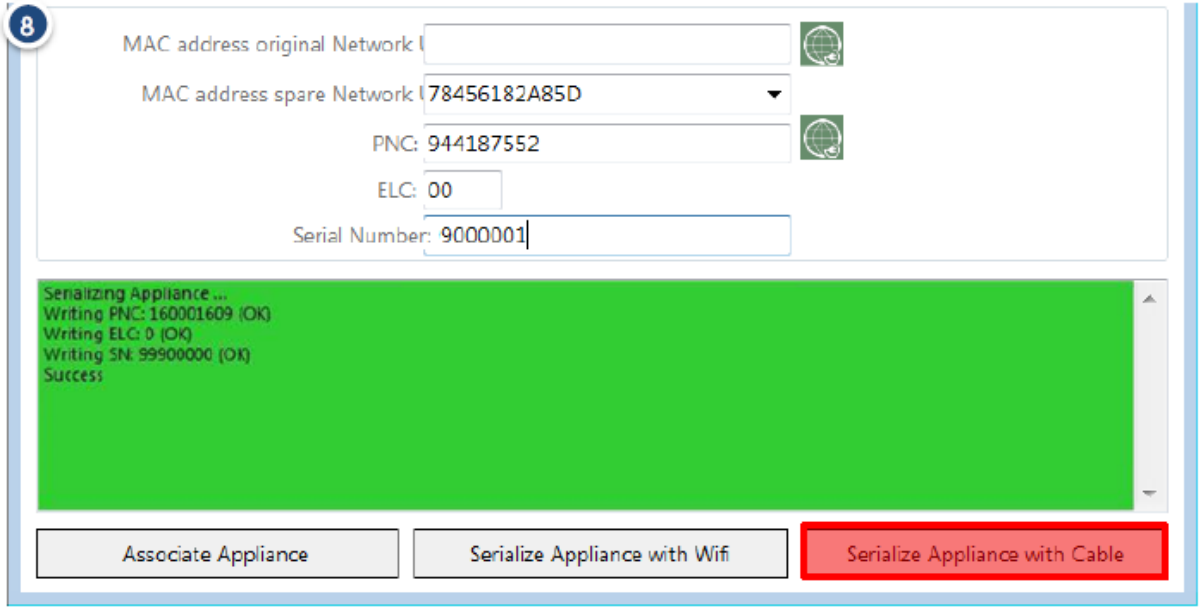
18.3.2 MANUAL SERIALIZATION

1 Disconnect the appliance from the mains power supply
2 Using SidekickPC configure the spare main board appliance before installing it
3 Replace the main board, the user interface and the network unit
4 Connect the AMI to the PC and to the main board
5 Turn the appliance on
6 Select the MAC address of a spare unit that you have previously associated. You can use the selection list that shows all the associations that you have executed previosuly. This operation automatically fills-in the remaining fields: PNC, ELC and Serial Number

7 The selection of the MAC address of the spare unit automatically fills-in the remaining fields that are required for this operation: PNC, ELC and Serial Number



8 Press the Serialize Appliance with Cable command, (see example on the left). Please ensure that you use the correct COM port number. Wait until the operation completes successfully



9 While the appliance is still on, disconnect it from the mains power supply. This operation generates a “power fail” event that forces the storage of serializaton data inside the Main Board

10 Turn the appliance on again and execute the manual serialization check, as described in the next slides

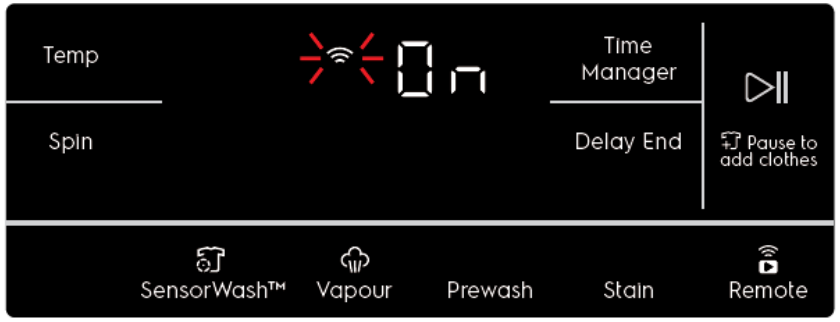
18.3.3 MANUAL SERIALIZATION CHECK STEPS

1 Reconnect the appliance to the mains power supply and turn it on

2 Turn on the spare network unit

User press and hold Remote Start button for 3s

- KeyAccept Tone



Upon long press (t=3s),

- KeyConfirm Tone

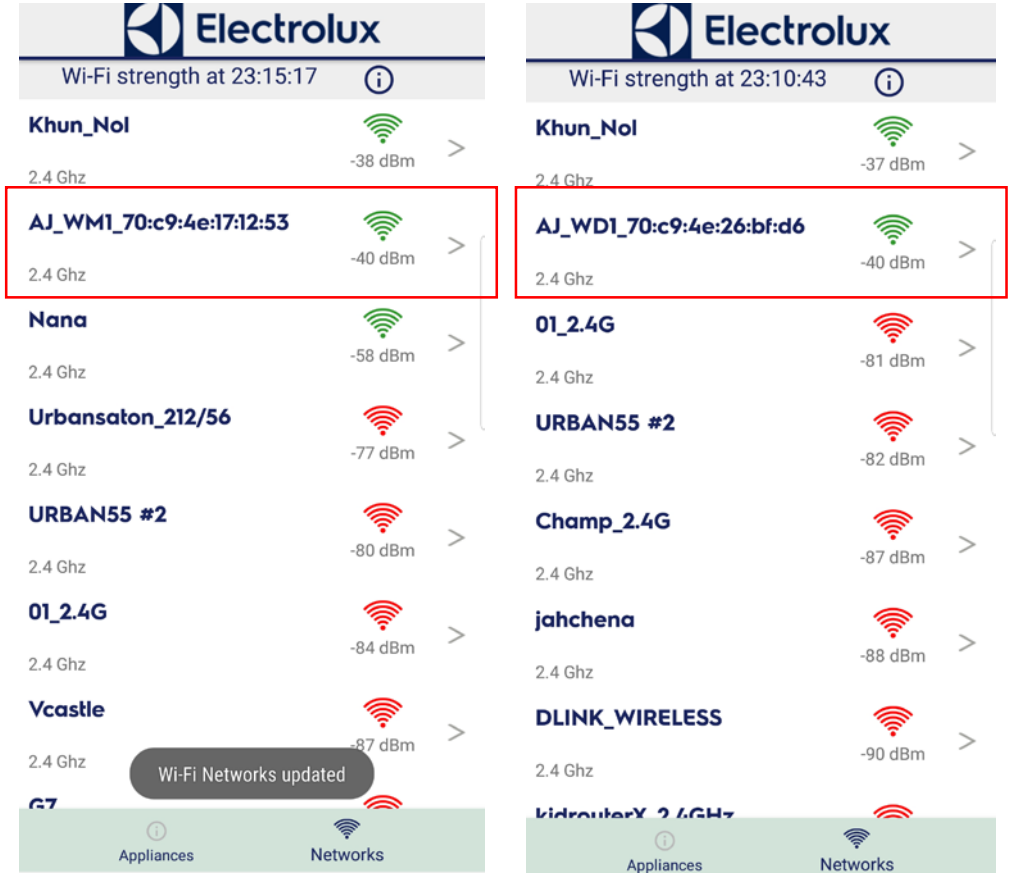
Turn On Wi-Fi

- LED Segments “On”
- Wi-Fi icon blinks
- All other LEDs are Off

3 This message appears for about one minute

4 Wait until this message appears (if it does not appear the appliance is not yet serialized):

5 If network installation is not possible, check that a Wi-Fi network with a name starting with AJ_xx1_ is visible. This is a sign that the appliance has been correctly configured.
(xx is product-specific and can stand for WM, DR, OV, etc.)



18.4 MANUAL SERIALIZATION WITH CABLE

Information "Manual Serialization"

- For the manual serialization connect the AMI module to the main board of the appliance, while the appliance is unplugged from the mains power supply
- You should use the RAST5 connector in the AMI kit.
- **The AMI switch must be in the OFF Position.**

Plug the RAST 5 cable to DAAS edge connector of the main board.
Example for washing-machine:

1) Secondary power switch
2) OFF position
3) ON position (the AMI provides power supply)

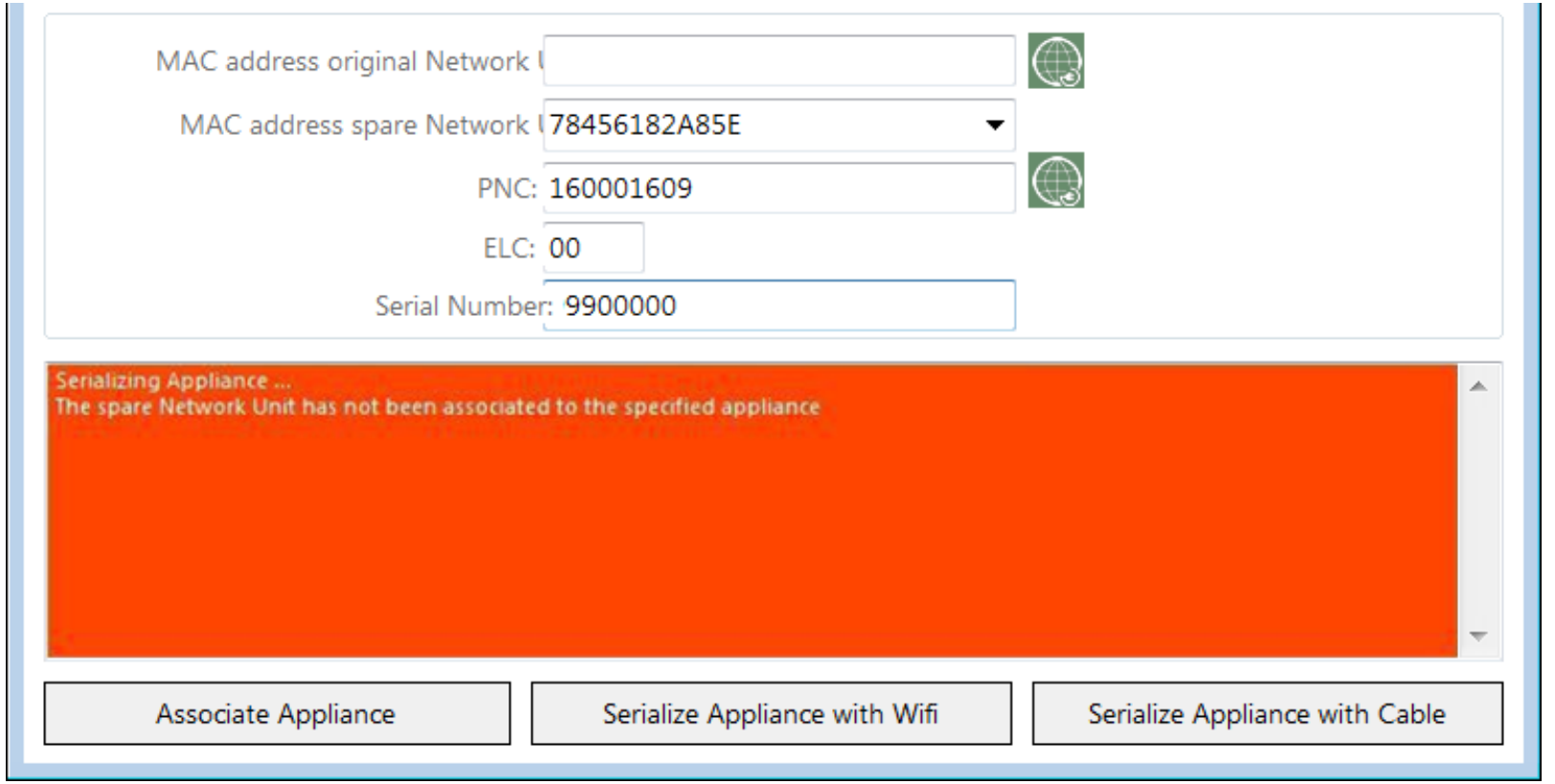
Must set the secondary power switch off the AMI module in the OFF position.

18.4.1 APPLIANCE NOT YET SERIALIZED

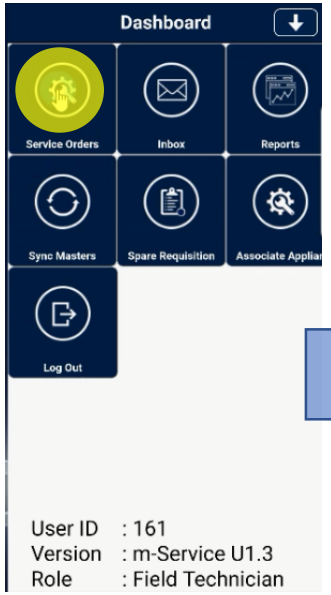
If, while checking for a proper appliance serialization, the following message appears on the screen with Wi-Fi symbol blinking and doesn't disappear until the machine is switched off, it means that the appliance is not correctly serialized.

18.4.2 MANUAL SERIALIZATION: UNIT NOT YET ASSOCIATED

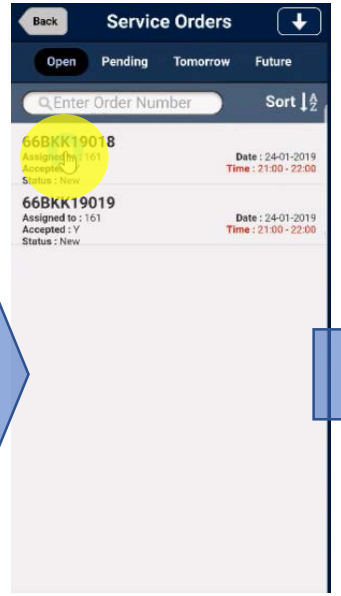
It the new spare network unit board has not been associated to the appliance, the system will prevent user from manually serializing this appliance.



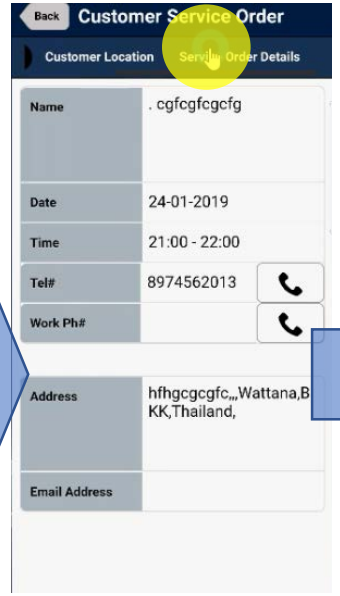
19.1 Access to ASSOCIATE APPLIANCE menu



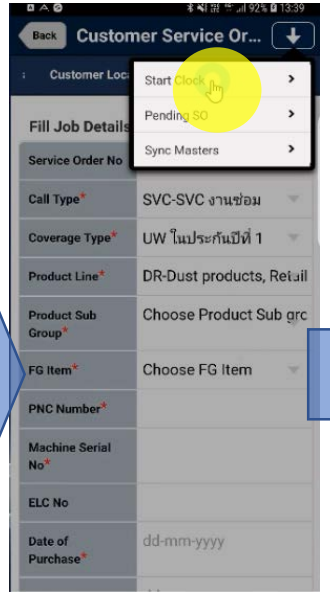
1) Tab “Service Orders”



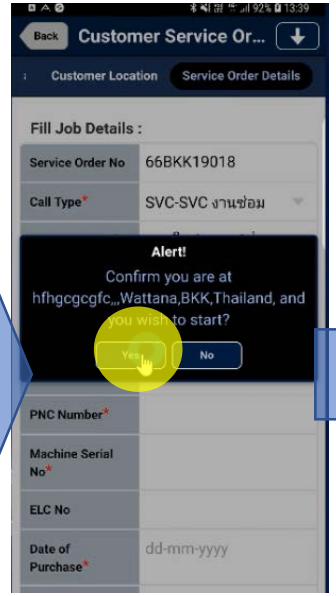
2) Tab “Service Job”



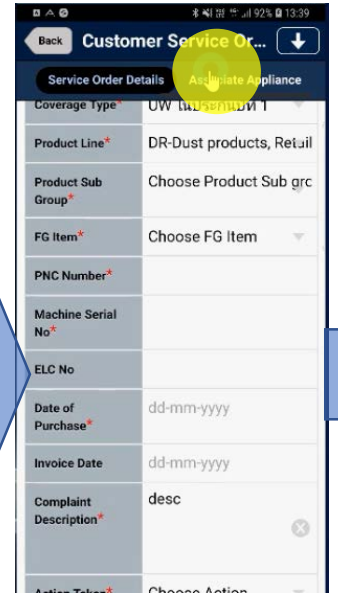
3) Slide Menu to “Service order detail”



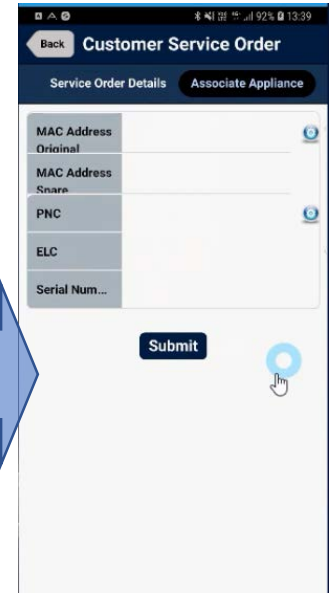
4) Tab “Down arrow” then tab “Start Clock”



5) Tab “Yes” for start

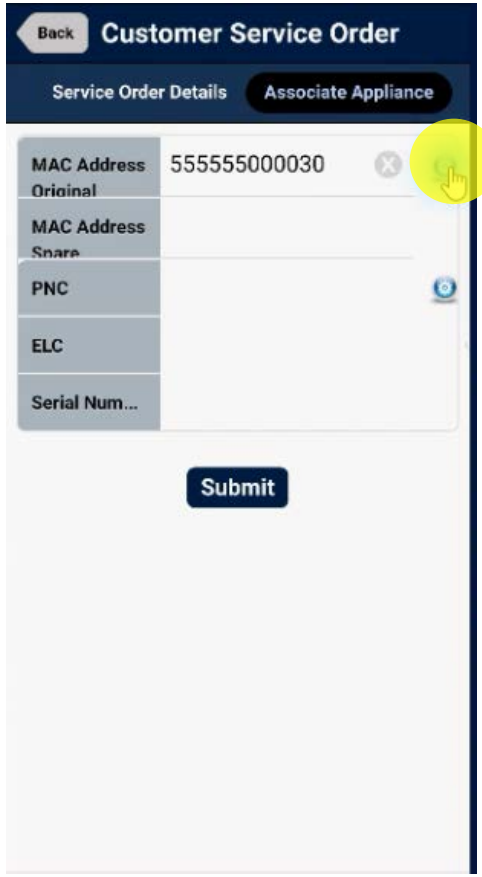


6) Slide Menu to “ASSOCIATE APPLIANCE” then Tab

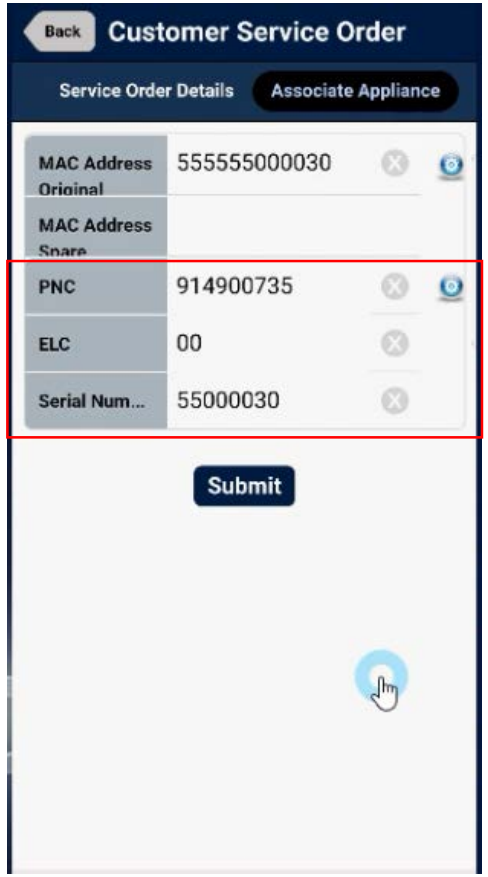


7) Access to “ASSOCIATE APPLIANCE” menu

19.2 PNC, ELC AND SERIAL NUMBER FROM THE MAC ADDRESS

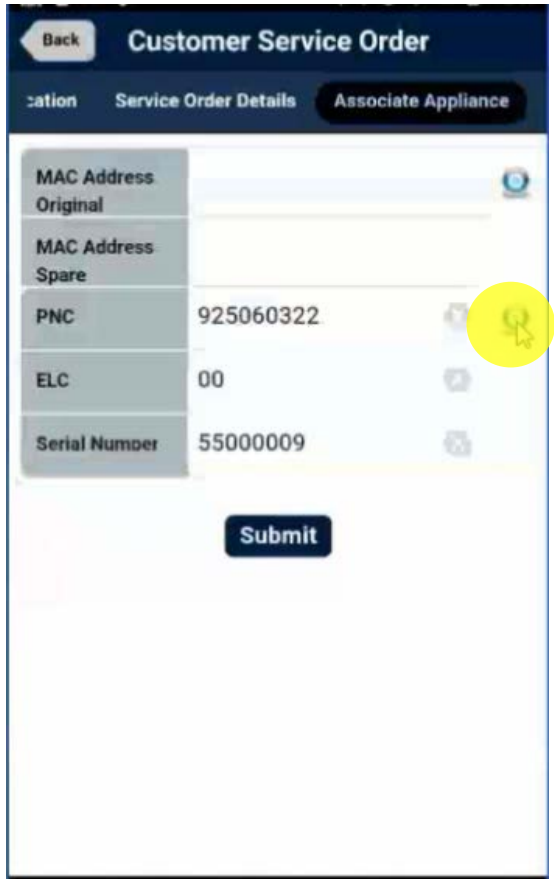


1) Fill MAC address then Tab for “Search”

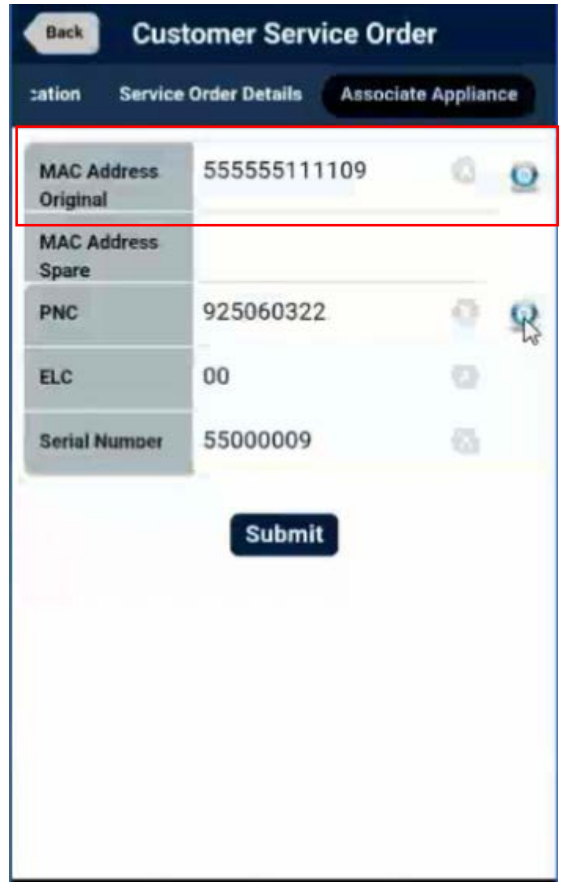


2) The PNC, ELC, and Serial Number fields are populated with the corresponding pieces of information

19.2 MAC ADDRESS OF THE NETWORK UNIT FROM PNC, ELC AND SERIAL NUMBER

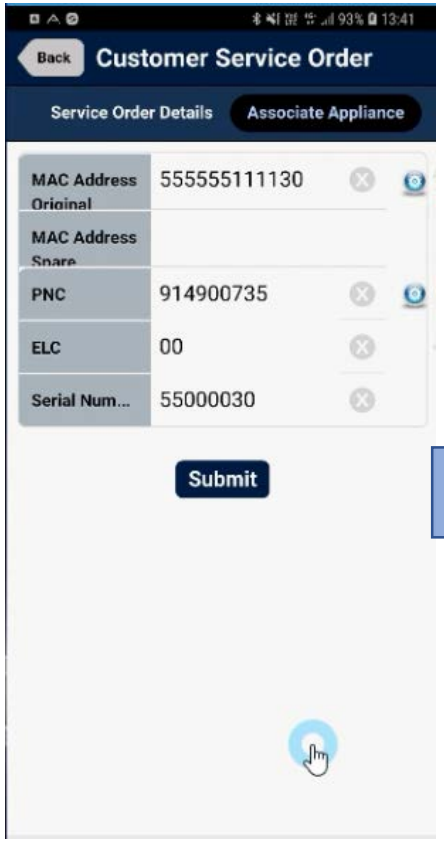


1) Fill PNC, ELC AND SERIAL NUMBER address then Tab for “Search”

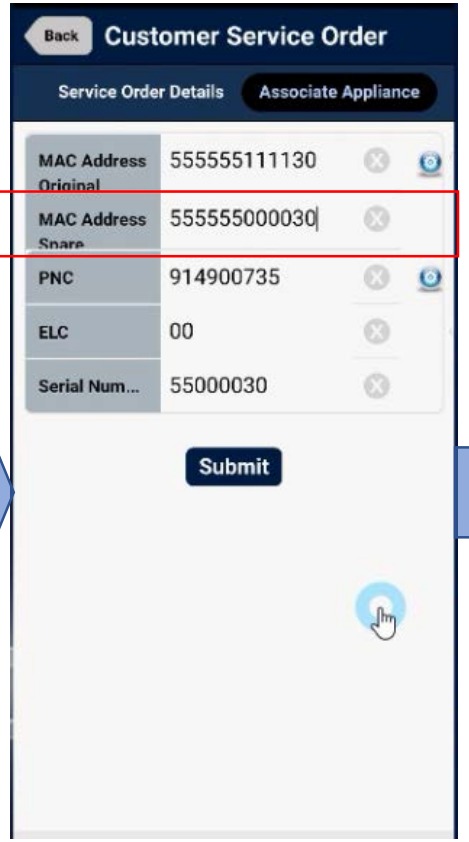


2) MAC address fields are populated with the corresponding pieces of information

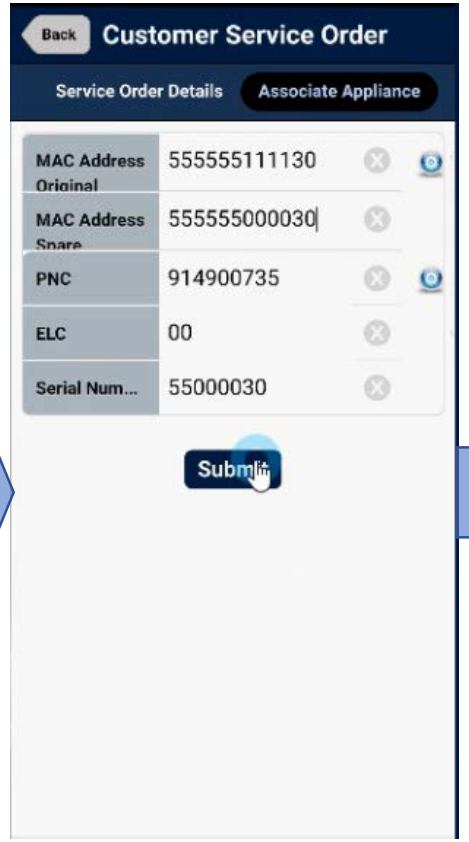
19.3 ASSOCIATE APPLIANCE



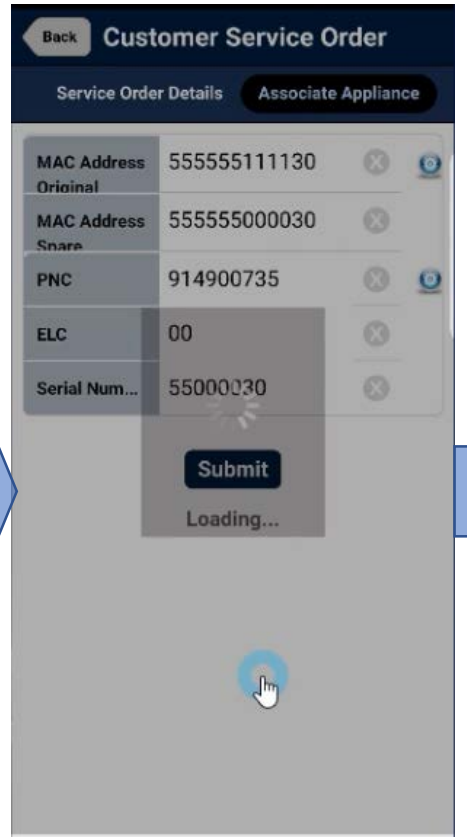
1) Fill MAC address then Tab for “Search”
2) The PNC, ELC, and Serial Number fields are populated with the corresponding pieces of information



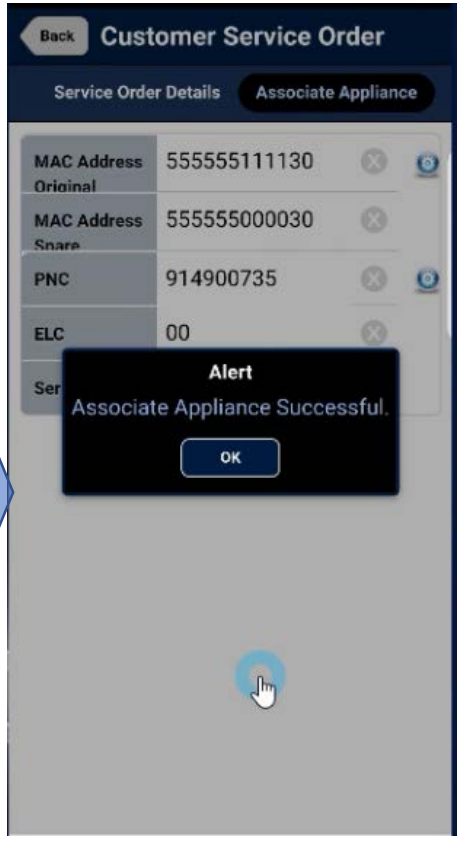
3) Fill MAC Address of NIUX spare part.



4) Tab “Submit” for start “ASSOCIATE APPLIANCE”



5) To wait M-Service transfer Information to server.



6) M-Service will present “ASSOCIATE APPLIANCE Successful” , then Tab “OK” for complete ASSOCIATE APPLIANCE process.

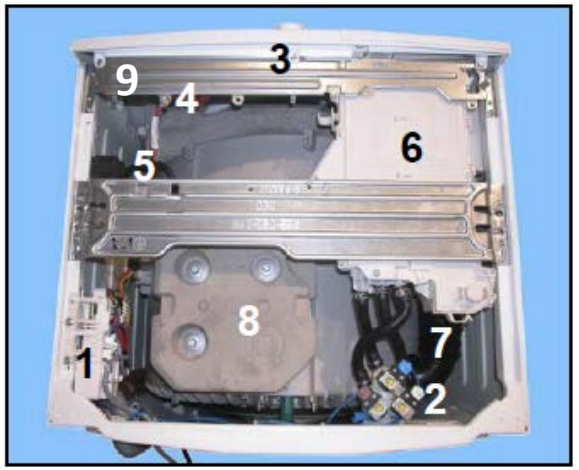
20.1 Worktop

Remove the screws that secure it to the back panel

Pull it out from the back.

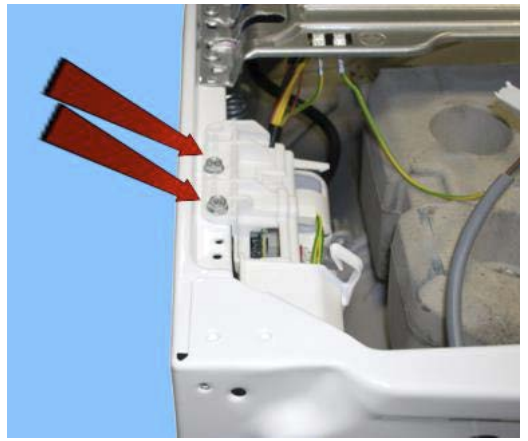
12.2 From the worktop, you can access

1. Main board
2. Solenoid valves
3. Control panel
4. Display board assembly
5. Electronic pressure switch
6. Detergent dispenser
7. Detergent fill pipe
8. Upper counterweight
9. NIUX



20.2.1 Main board

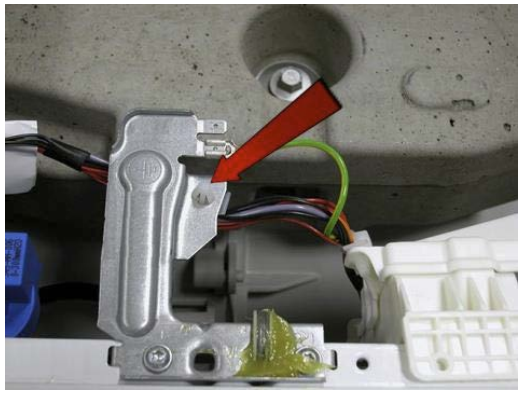
Remove the worktop (see relevant paragraph).



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

Unfasten the three screws securing it to the cabinet.

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



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

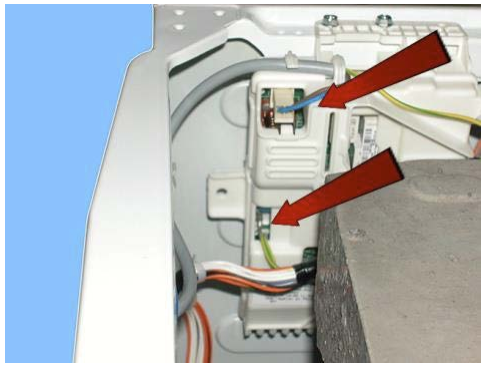
Remove the connectors.

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

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

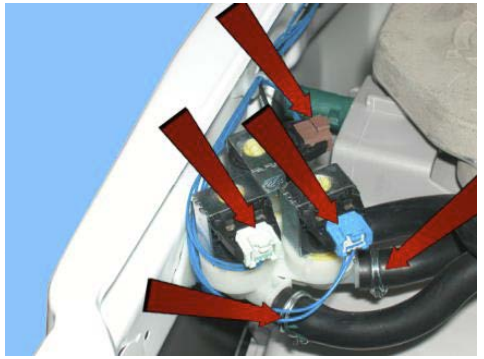
Before securing the side clamp:

Restore the earth connection, fit the power supply connector and insert it between the two hooks.
Unfasten the three screws securing it to the cabinet.



20.2.3 Solenoid valve

Remove the worktop (see relevant paragraph).
Disconnect the connectors.
Pull out the pipes which connect the detergent dispenser.

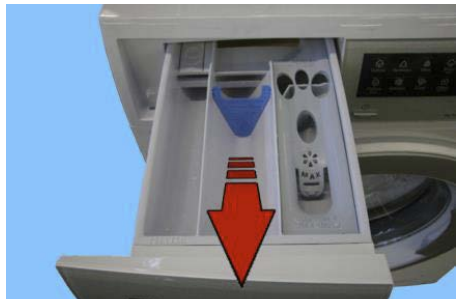


Unscrew the water fill pipe from the solenoid valve.
Push the two retainers indicated by the arrows towards the inside of the appliance.
At the same time, turn the solenoid valve to remove it.

20.2.4 Control panel

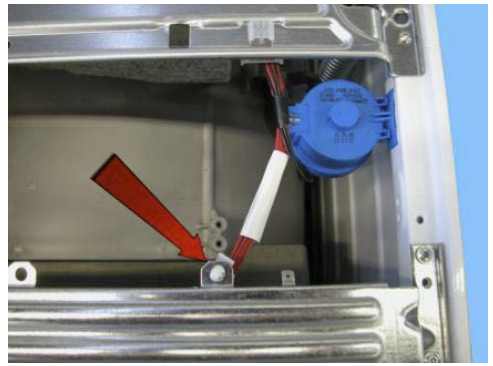
Remove the worktop see relevant paragraph) .

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

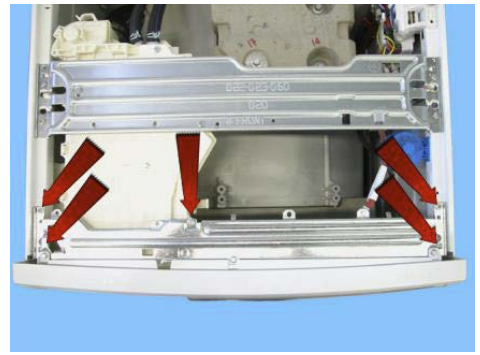


Loosen the screws that attach the control panel to the detergent tray.

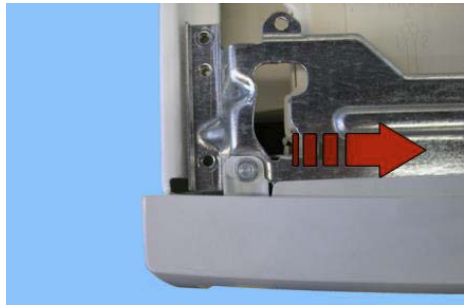
Pull out the clamp from the crosspiece.



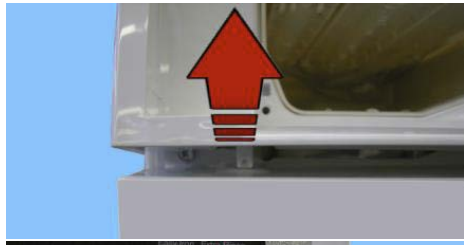
Remove the four screws which secure the crosspiece to the cabinet
Remove the screws which secure the crosspiece to the detergent dispenser.



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.



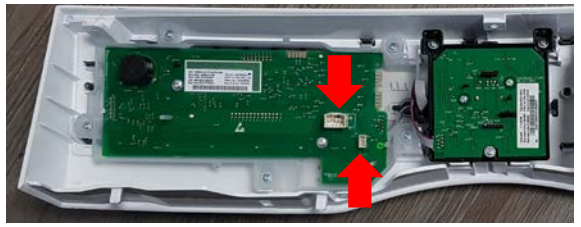
Remove the control panel and position it as shown in the figure, making sure you introduce a protection to prevent scratching it.

20.2.5 Display board assembly

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

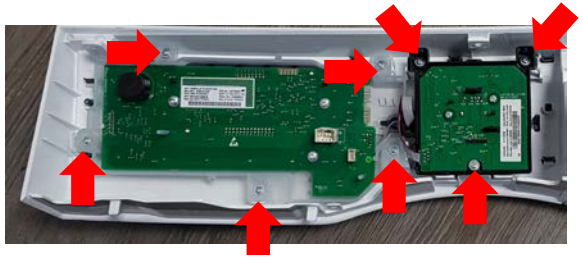
- Warning the sensors located in the display boards could be at a potential of 220 Volts.

Disconnect the connectors.

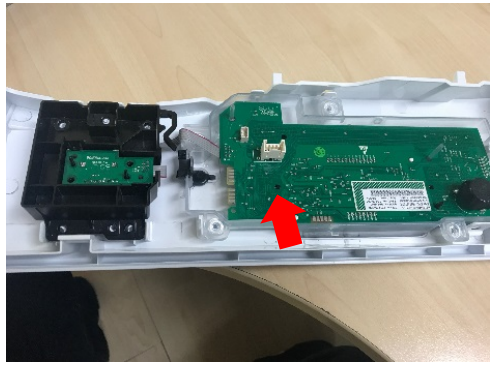


Pull out Knob

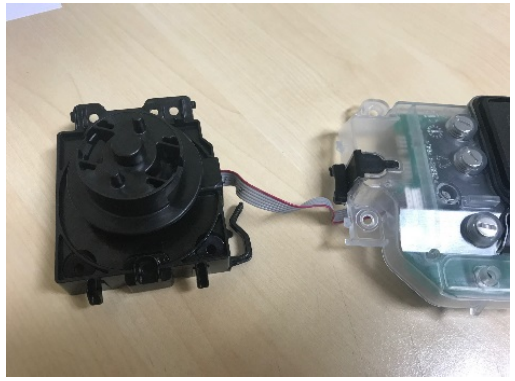
Remove screw

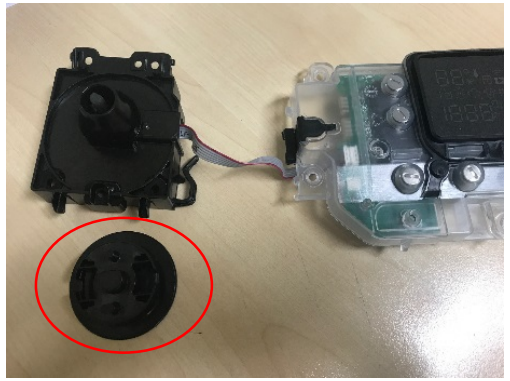


Remove Program selector Board and UI Board from control panel



Remove Under Knob from Selector Box



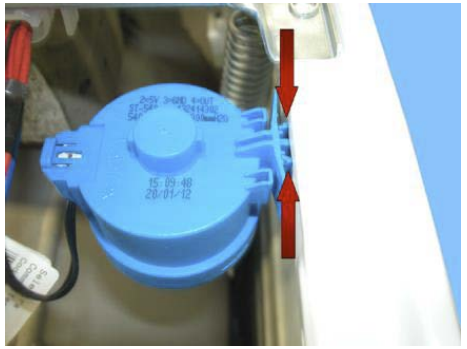


20.2.6 Analogue pressure switch

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.



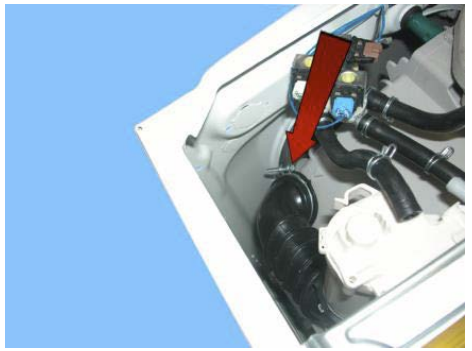
20.2.7 Detergent dispenser

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.

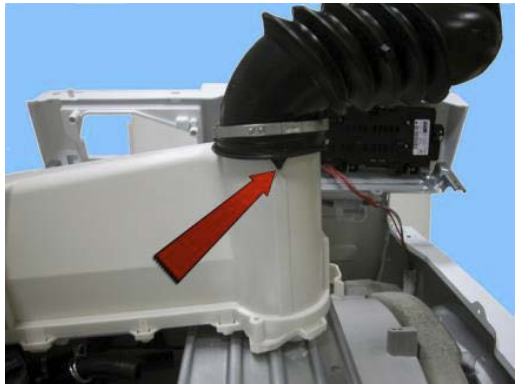


If the appliance is a Jet System, pull out the pipe from the detergent dispenser hook.

Remove the detergent dispenser.

20.2.8 Detergent fill pipe

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

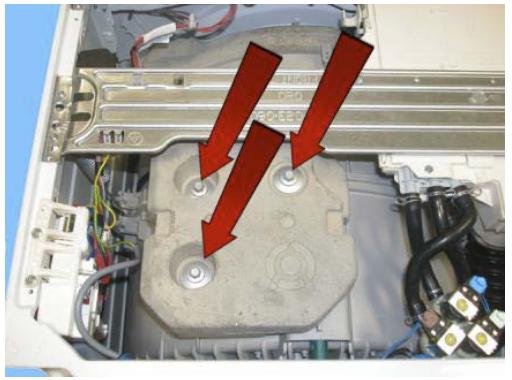


Pull out the pipe from the detergent dispenser after breaking/loosening the clamp between the detergent dispenser and the detergent loading pipe.
When reassembling, use a new clamp with the same characteristics.
The size of the clamp to use is 65.5 mm.
When introducing the pipe into the dispenser, make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

20.2.9 Upper counterweight

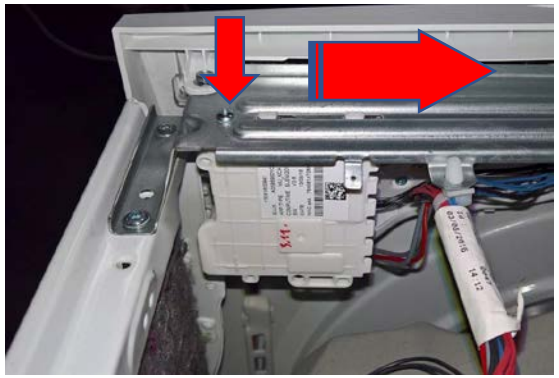
Remove the worktop (see relevant paragraph).

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



20.2.10 NIUX

Unscrew then slide for remove NIUX



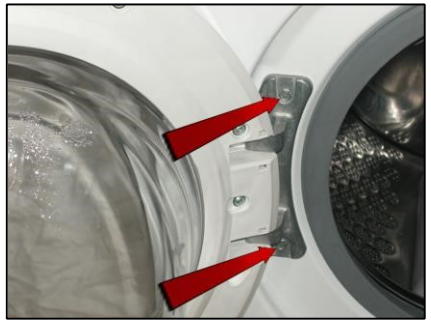
20.3 Accessing the front part

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

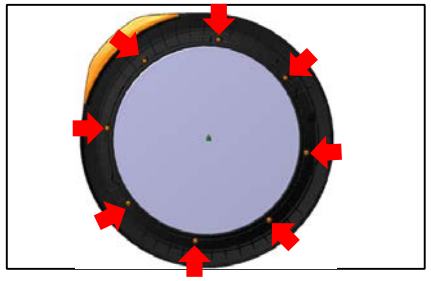
1. Door and Door Hinge
2. Door safety interlock
3. Blade
4. Front panel

20.3.1 Door hinge – Door

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



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

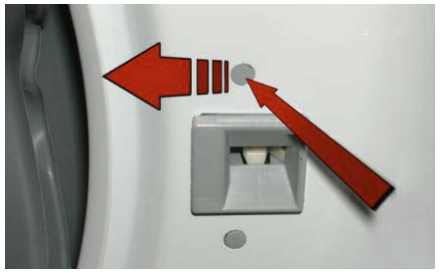


20.3.2 Door safety interlock

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

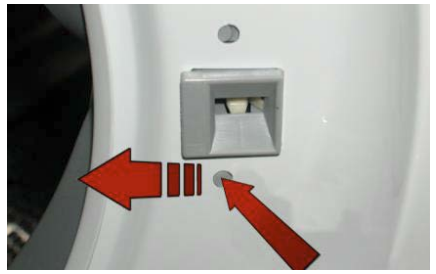
Take care not to scratch the cabinet.

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



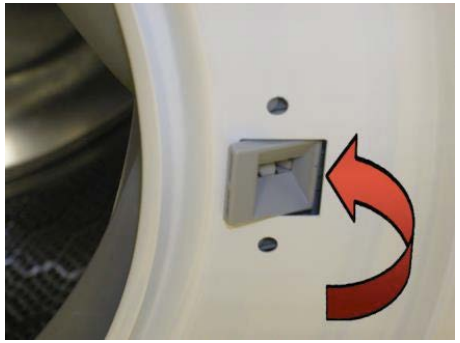
Holding the top still

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

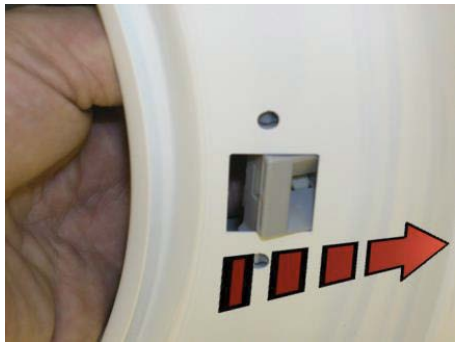


20.3.2 Door safety interlock

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



Pull it out 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

20.3.2 Door safety interlock

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

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

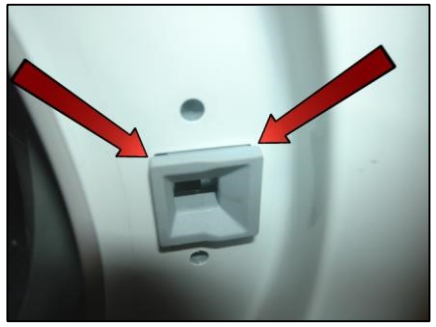
To reassemble the door safety interlock, repeat the same tasks in reverse order.

20.3.2 Door safety interlock

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

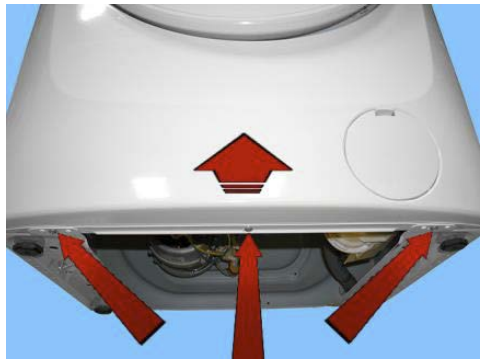
Make sure the small rod to release the door safety interlock is correctly positioned and visible in its seat by opening the filter flap.

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

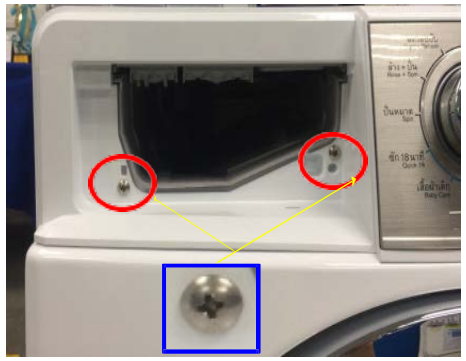


Before tightening the screws to secure the door safety interlock to the front panel, make sure the flange is positioned properly on the outside as indicated by the arrows

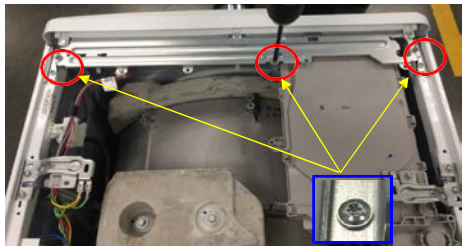
20.3.3 Front panel



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



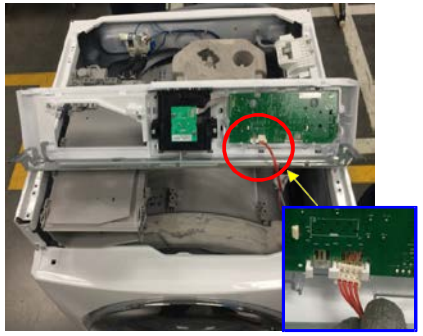
Pull out the detergent dispenser (see relative paragraph)



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

20.3.3 Front panel

Remove the clamp that secures the wiring



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

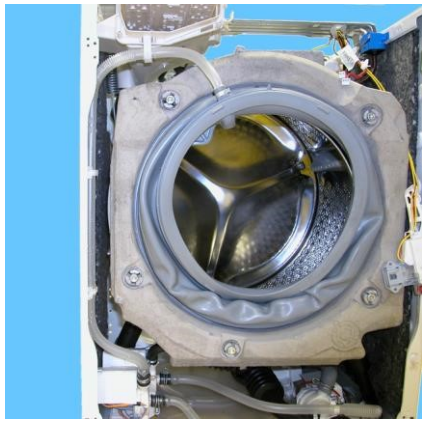
Remove font panel

20.4 From the front panel, you can access

1. The JET water circuit
2. The Concentrated Wash hydraulic circuit
3. The front counterweight
4. Bellow seal
5. The shock absorbers
6. The drain water circuit
7. The pressure chamber
8. The tub suspension springs
9. The shock absorber pins
10. Conductivity & Turbidity Sensor

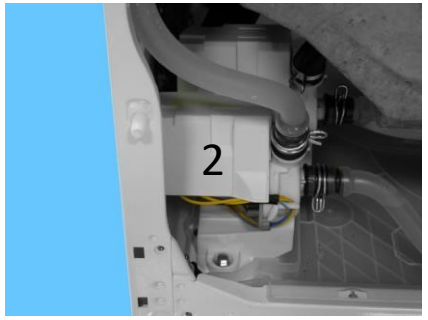
20.4.1 JET water circuit

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.



20.4.2 Re-circulation pump

Drain off all the water from the drain circuit.



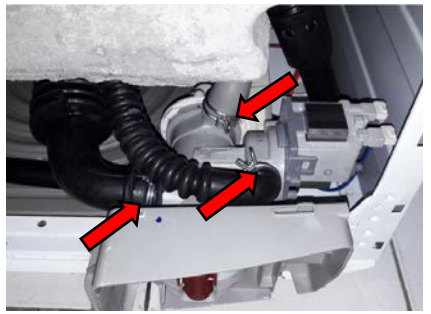
Remove the protection (2).

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.

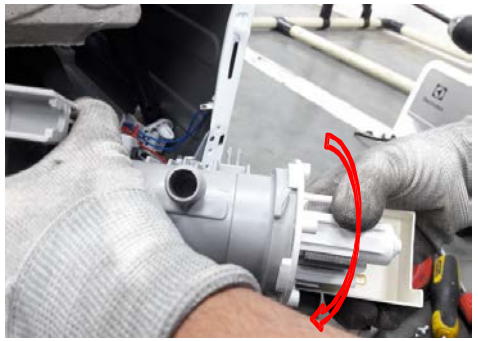
20.4.3 “Concentrated Wash” hydraulic circuit

Pull out all pipes (shown by the arrows in the figure) that connect both the circulation pump and the concentrated wash pump.



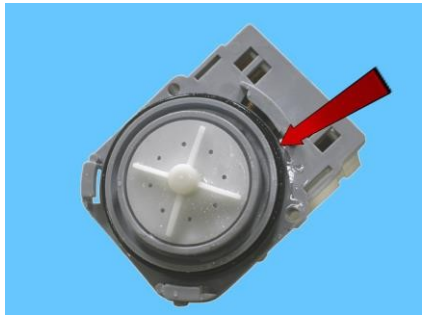
20.4.3 “Concentrated Wash” hydraulic circuit

Like the circulation pump, this pump is also secured using a bayonet connector.



20.4.4 “Concentrated Wash” hydraulic circuit

When reassembling, make sure the seal is in its seat in order to avoid water leaks.



20.4.5 Front counterweight

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

20.4.6 Bellow seal

Take the seal out of the 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.

20.4.6 Bellow seal

References

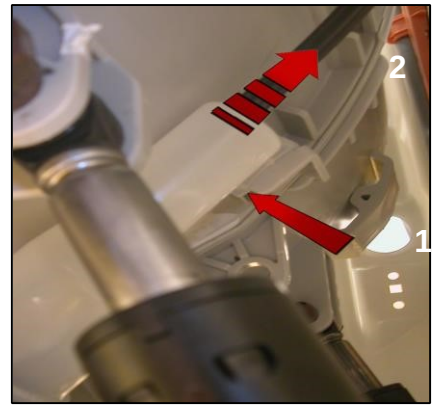
Reassemble the snap ring between the door bellow seal and the tub.
Reposition the circulation pipe in its seat.
Reassemble the iron ring between the door bellow seal and the cabinet.

When re-assembling the front panel make sure the small rod of the door safety device is correctly positioned

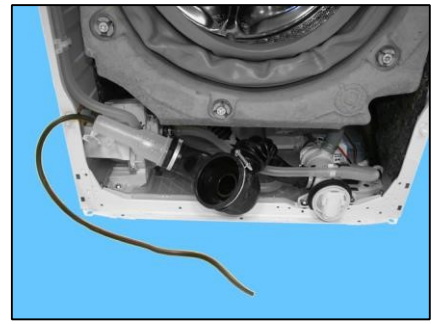
20.4.7 Shock absorber

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

20.4.8 Pressure chamber



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

20.4.8 Pressure chamber

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 must have a maximum length of 16 mm and without a tip to avoid perforating the tub), secure the chamber to the tub as shown by the arrow in the photo.).

When repositioning the pressure chamber in the tub drain pipe, pay attention to the references.
The size of the clamp to use is 52.5 mm.

When reassembling 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

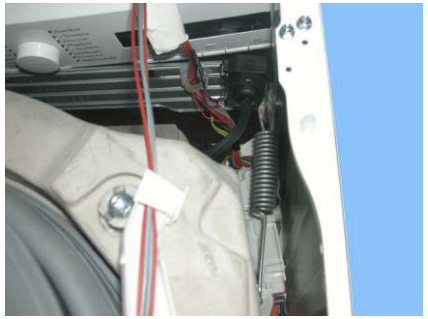
20.4.9 Tub suspension springs

- Left spring

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

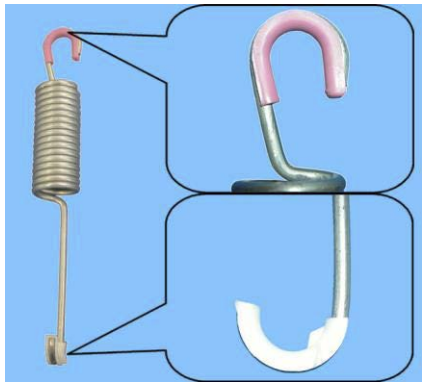
- Right spring

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

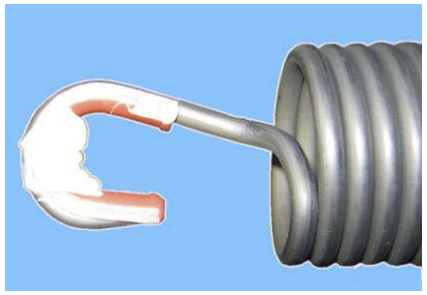


20.4.9 Tub suspension springs

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



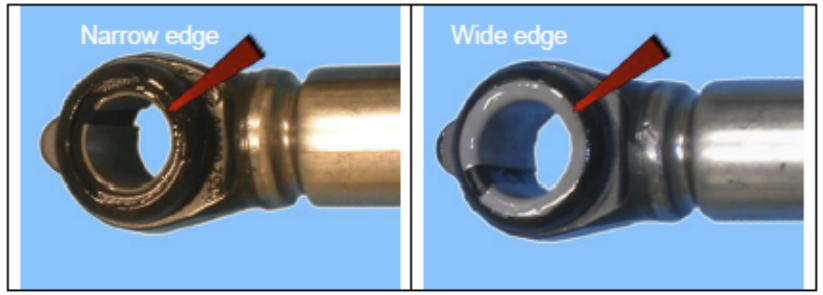
Apply some grease on either end of the spring.



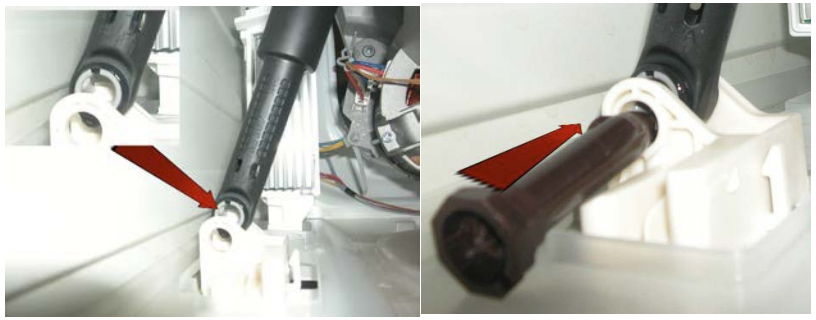
Attachment position of springs to top crosspiece

20.4.10 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).

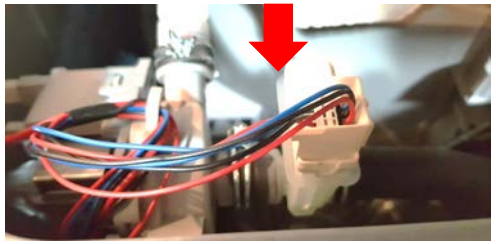


When positioning the shock absorber inside the fastening (situated at the bottom of the cabinet or in the tub), take care when positioning the bushing, so as to insert the pin from the part of the bushing with the widest profile.

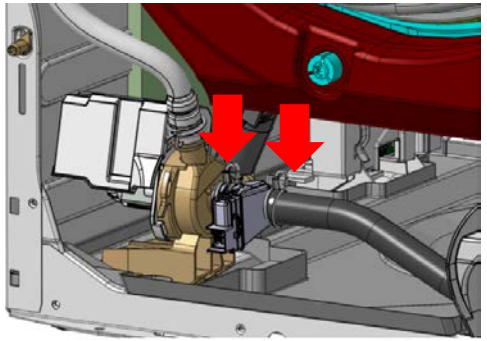


20.4.11 Conductivity & Turbidity Sensor

Disconnect the connectors



Pull out all pipes (shown by the arrows in the figure) that connect both the circulation pump and circulation hose

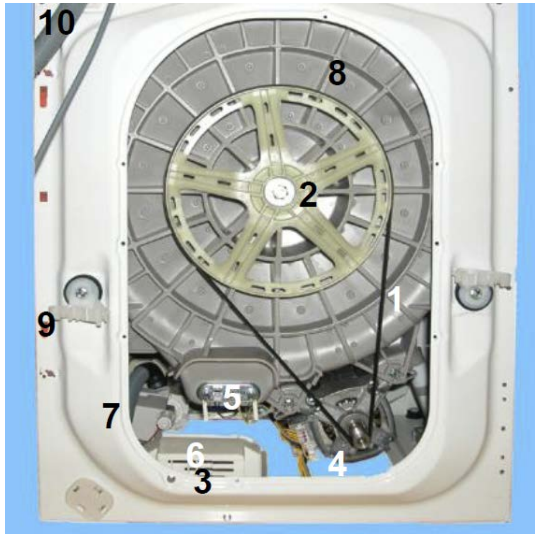


20.5.1 Back panel

Loosen the screws that fix it to the cabinet.

12.6 From the back panel, you can access

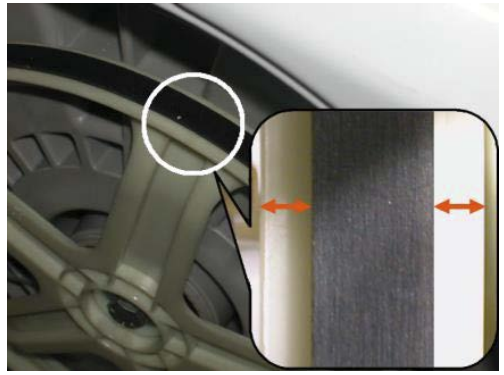
1.Belt
2.Plastic pulley
3.Inverter
4.Motor
5.Resistance
6.Water control
7.Rear shock absorber
8.Welded tub assembly
9.Drain pipe/cabling support
10. Main drain pipe



20.6.1 Belt

Take the belt, turning the pulley, and remove it.

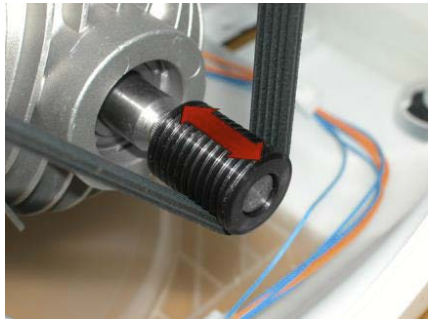
When reassembling:
Position the belt and align it with the centre of the pulley as shown in the figure.



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

20.6.1 Belt

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



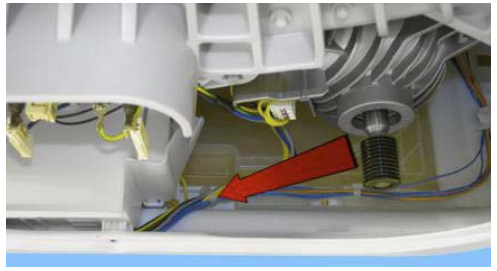
20.6.2 Pulley

Insert a retainer to secure the pulley in place.
Unfasten the screw securing the pulley to the drum shaft.
Tighten the screw at a torque of 60 Nm.

20.6.3 Inverter Board

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).

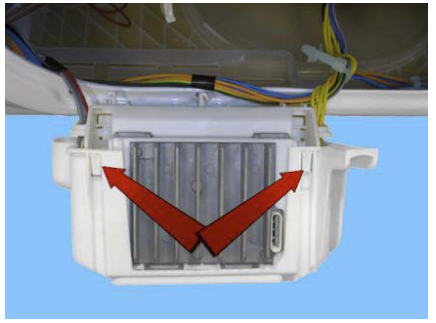
Slide off the clamp.



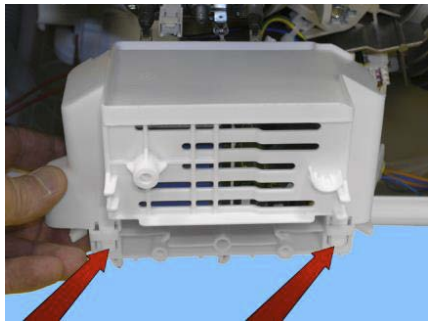
Push the washing unit towards the inside and pull out the inverter

20.6.3 Inverter Board

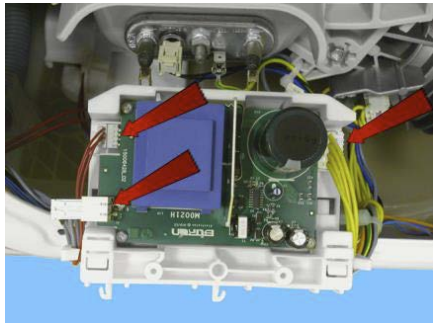
By releasing the hooks on one side,



then on the other.

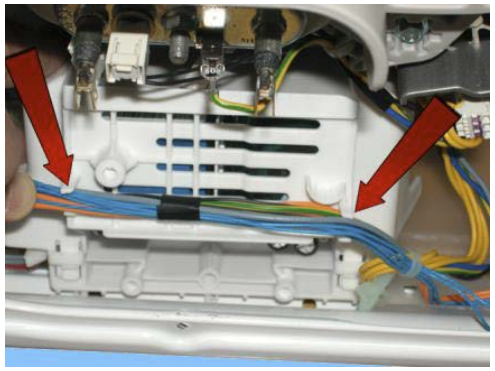


Carefully remove the connectors (they are blocked by anti-sliding hooks)



20.6.3 Inverter Board

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



When reassembling, repeat these steps in the reverse order.

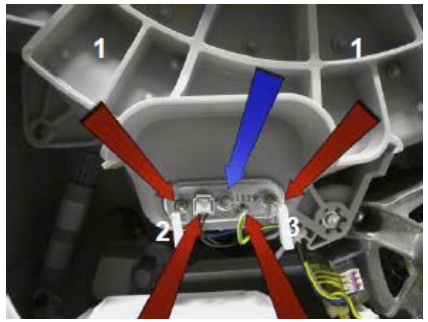
20.6.4 Motor

Disconnect the connectors: for the power supply and earthing

loosen the two front fastening screws (1) and the rear ones (2).

When reassembling, restore the connections.
If the clamp securing the wiring to the motor breaks, replace it with a new one.
Tighten the screws at a torque of 5 Nm.

20.6.5 Resistance

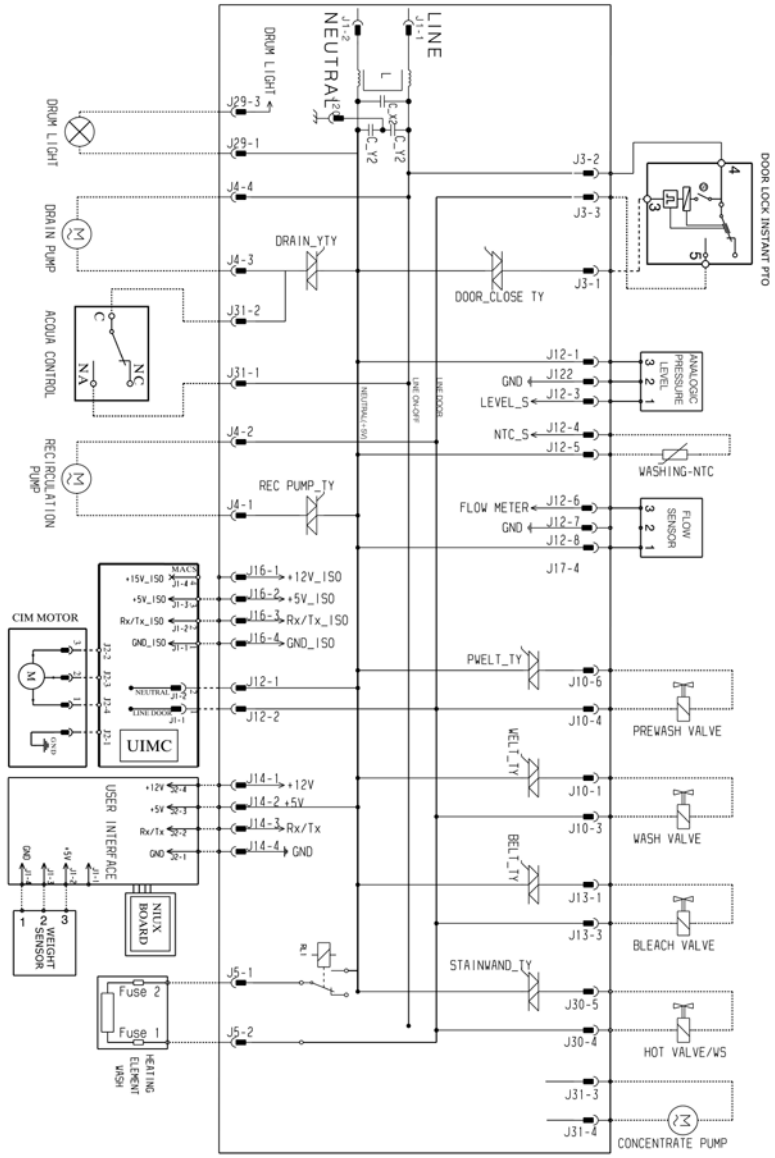


Disconnect the connectors of the heating element (1), NTC probe (2) and earth (3) red arrows.
Unscrew the nut (blue arrow) and remove the heating element from its seat.

Tighten the nut at a torque of 4 Nm.

20.6.7 Rear shock absorber

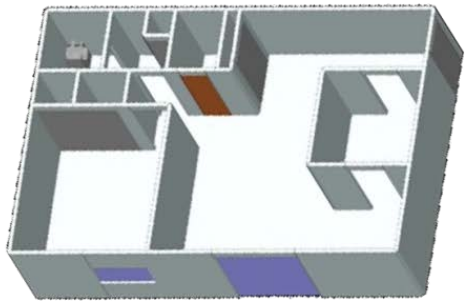
To take the pins out of their seats, push the locking tooth and at the same time remove it with pliers.
Perform the same operations for the other pin.
Take the shock absorber out.



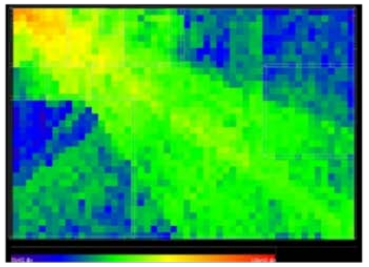
21. Wi-Fi radio signal propagation

- Wi-Fi signal propagates indoor mainly using openings and radio reflections (non-line-of-sight propagation)
- Any object absorbs electromagnetic fields or modify the way in which the signal is propagating
- Metallic surfaces, walls, floor and ceiling have a big impact in propagation

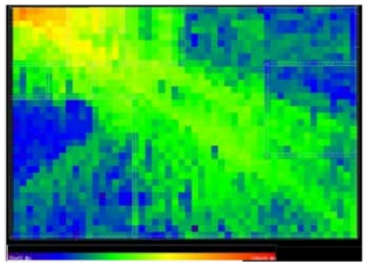
Simulating the distribution of the Wi-Fi signal (right pictures) in a typical home environment (left picture), it is clear that it propagates mainly though openings or light materials and that the signal is continuously scattered. The horizontal or vertical polarization of the router antenna(s) is shifted on every object “touched” during the propagation.



Residential building used in simulations



Antenna 1 simulation results (top view)



Antenna 2 simulation results (top view)

Facts on installation enlighten some basic signal attenuations we have to take in account when appliances are installed (roughly 6dB more means doubling the working range):

Material	Cause of signal loss	Signal loss direction	Signal loss
Against the wall	Wall behind	Back	> 4 times (> 6dB)
Close to the floor	Floor	Bottom	> 10 times (> 12dB)
Surrounding appliances	Metal surfaces	Side	> 10 times (> 13dB)
Empty furniture	Wood	Side, top (appliance type dependent)	> 2 times (> 3dB)

Typical attenuation of common objects or materials:

Objects or material	Attenuation
Interior drywall	3-4 dB
Cubicle wall	2-5 dB
Wood door (Hollow- Solid)	3-4 dB
Brick/Concrete wall	6-18 dB
Glass/Window (not tinted)	2-3 dB
Double-pane coated glass	13 dB
Bullet-proof glass	10 dB
Steel/Fire exit door	13-19 dB