

# DISHWASHER SERVICE MANUAL



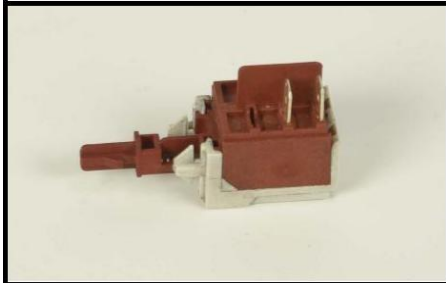
## DISHWASHER (D SERIES)

## 2.ELECTRICAL COMPONENTS AND MEASUREMENTS

### 2.1 ON / OFF SWITCH

It can't be measured from the electrical card.

	C	T	
DOOR SWITCH	CN2.9 - CN2.2 0 Ω	KN2.8 - KN2.10 0 Ω	Door is close

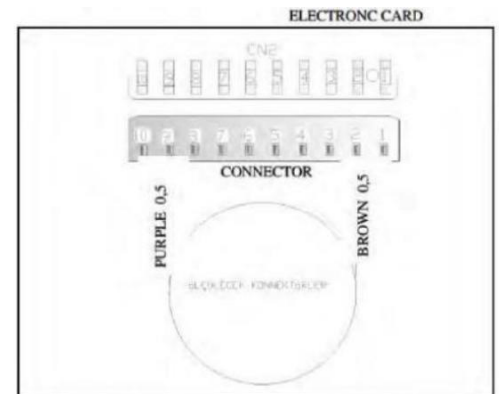
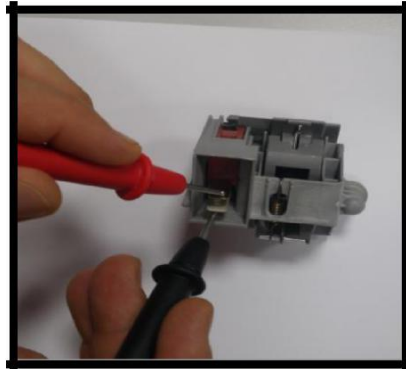
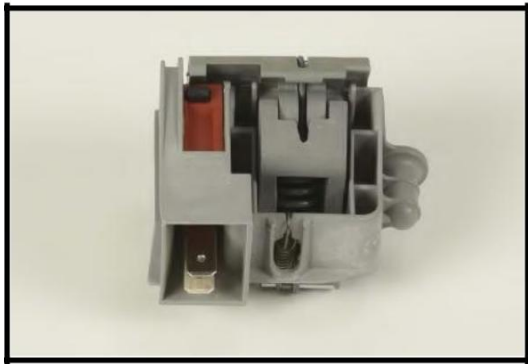


### 2.2 DOOR LOCK

It is a mechanical lock/release system that is closing the door, supplying the connection of electrical parts in the machine and cutting off the connection.

From the electrical card:

	C	T	
DOOR SWITCH	CN2.9 - CN2.2 0 Ω	KN2.8 - KN2.10 0 Ω	Door is close



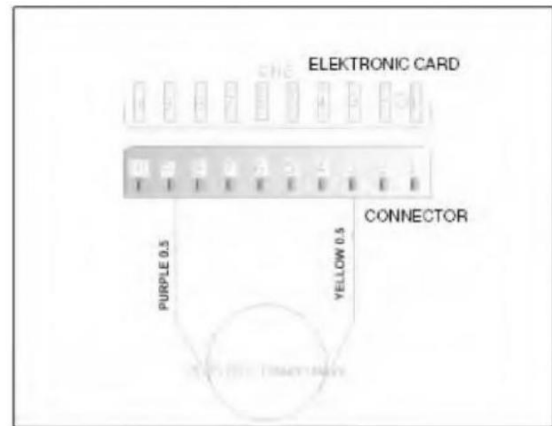
### 2.3 CIRCULATION PUMP

Single direction, single phase, asynchronous and two pole. It turns opposite clock direction. It is assembled to the basement with rubber hangers.

From the electrical card:

You can only measure the primary winding value from the electrical card. Resistance value of the primary winding must be;

	C		T		
CIRCULATION PUMP	CN2.3 - CN2.9		KN2.3 - KN 2.8		Primary winding Secondary winding (from the component)



Above sketch show the connectors of the washing pump on the electrical card. Probes of the tester should be applied on to the related connectors.

From the component:



A)

B)

A) Measurement of the primary windings of the washing pump.(118.2-135.9  $\Omega$ )

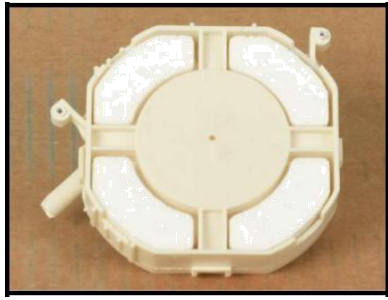
B) Measurement of the secondary windings of the washing pump (white cable – blue cable)(117.9-135.6  $\Omega$ )

Probes of the tester should be applied on to the related connectors as shown on the pictures.

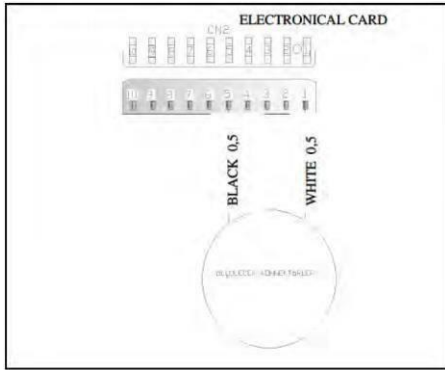
## 2.4 FLOATER

From the electrical card:

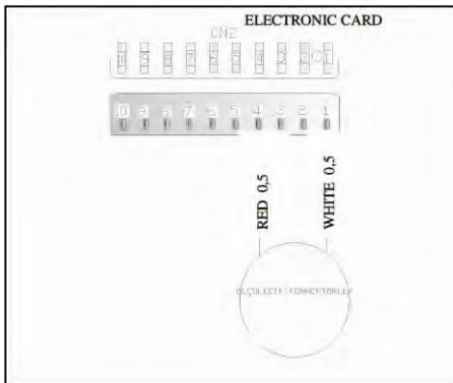
	C		T		
FLOATER (MICROSWITCH)	CN2.1 - CN 2.5	0 $\Omega$	KN2.5 - KN 2.10	0 $\Omega$	Microswitch is inactive (no water ) microswitch is active (there is water)
	CN2.1 - CN 2.4	$\infty\Omega$	KN2.4 - KN 2.5	$\infty\Omega$	



**Position 1:** You can check the floater by controlling the specified value intervals.



**Position 2:** If failure code is occurred related with the floater within control the above values: You can figure out whether leakage occurs or not.



## 2.5 CAPACITOR

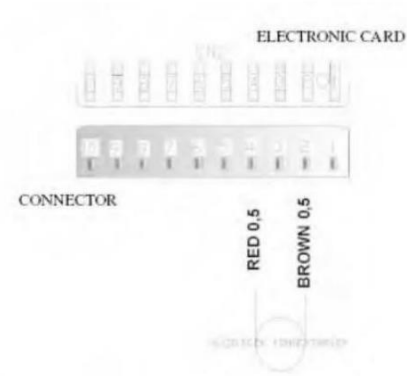
Capacitor is permanently connected to the circulation pump coils.



## 2.6 DRAIN PUMP

From the electrical Card:

	C		T	
DRAIN PUMP / HANYU	CN2.2 - CN2.4	220 $\Omega$ % $\pm 10$	KN2.4 - KN2.10	220 $\Omega$ % $\pm 10$
DRAIN PUMP / LEILI	CN2.2 - CN2.4	141 $\Omega$ % $\pm 10$	KN2.4 - KN2.10	141 $\Omega$ % $\pm 10$



Above sketch show the connectors of the drain pump on the electrical card. Probes of the tester should be applied on to the related connectors.

From the component:

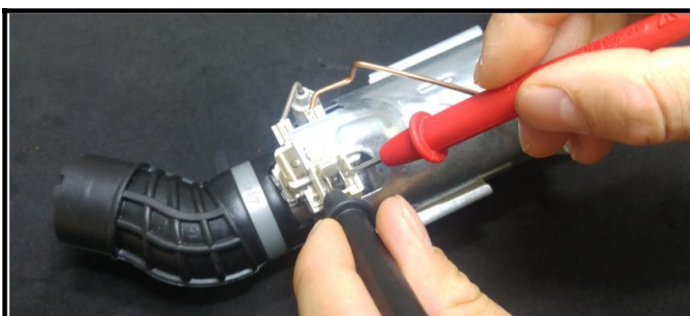


Probes of the tester should be applied on the related connectors as shown on the pictures.

## 2.7 HEATER

It can' be measured from the electrical card.

From the component:



## 2.8 NTC

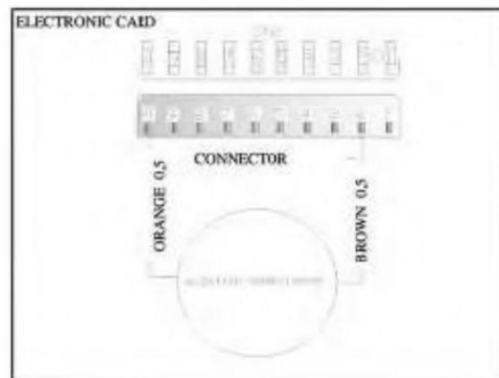
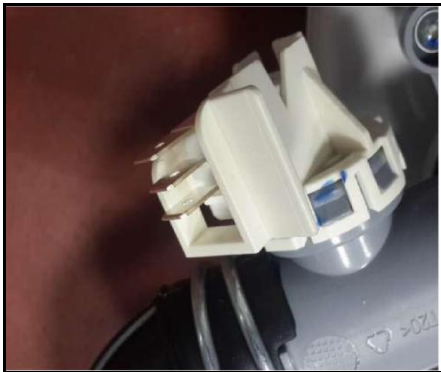


+25 °C	-	47.200	±	850	Ω
+30 °C	-	37.500	±	675	Ω
+40 °C	-	24.900	±	349	Ω
+50 °C	-	17.000	±	170	Ω
+60 °C	-	11.700	±	117	Ω
+70 °C	-	8.280	±	108	Ω
+80 °C	-	5.945	±	101	Ω

## 2.9 PRESSURE SWITCH

From the electrical card:

	C		T		
PRESSURE SWITCH	CN2.10 - CN2.2	0 Ω ∞Ω	KN2.9 - KN2.10	0 Ω ∞Ω	Full fill water No water



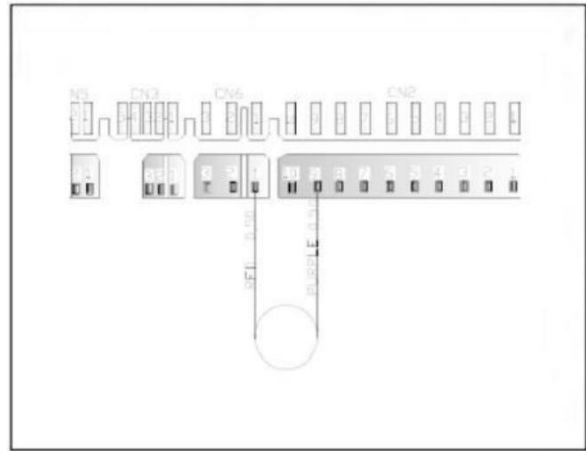
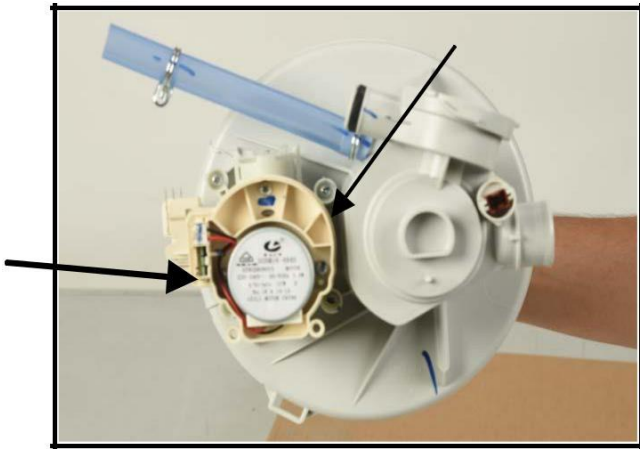
From the component:



## 2.10 DIVERTER

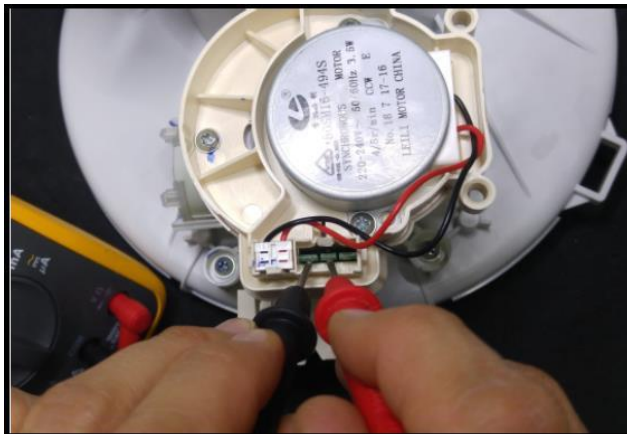
From the electrical Card:

	C	T
DIVERTER	CN 6.1 - CN 2.9 $10500 \pm \%7 \Omega$	KN 6.1 - KN 2.8 $10500 \pm \%7 \Omega$



Sketch above show the connectors of the diverter on the electrical card. Probes of the tester should be applied on to the related connectors.

From the component:



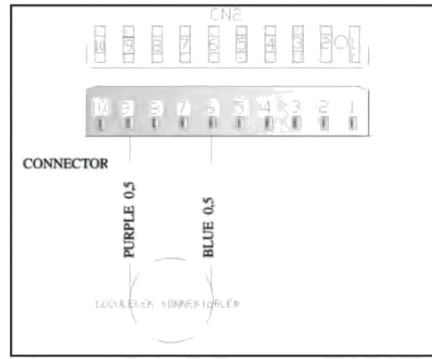
Probes of the tester should be applied on to the related connectors as shown on the pictures.

## 2.11 WATER INLET VALVE

Single inlet and single outlet standard single coil selenoid valve.

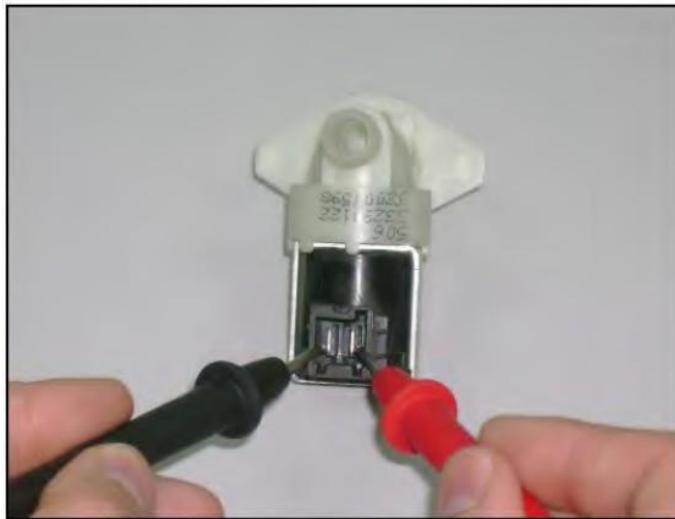
From the electrical card:

	C	T
WATER INLET VALVE	CN2.6 - CN2.9 $4200 \Omega \pm \%10 (20^{\circ}\text{C})$	KN2.6 - KN2.8 $4200 \Omega \pm \%10 (20^{\circ}\text{C})$



Above sketch show the connectors of the water inlet valve on the electrical card. Probes of the tester should be applied on to the related connectors.

From the component:

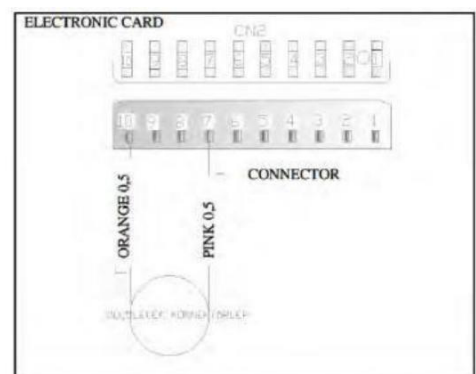
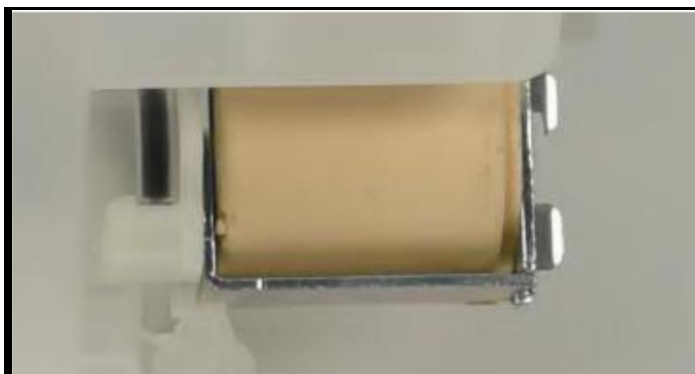


Probes of the tester should be applied on to the related connectors as shown on the pictures.

## 2.12 REGENERATION VALVE

From the electrical card:

	C	T
REGENERATION VALVE	CN2.2 - CN2.7 3560 $\Omega \pm \%10(25^\circ\text{C})$	KN2.2 - KN2.10 3560 $\Omega \pm \%10(25^\circ\text{C})$



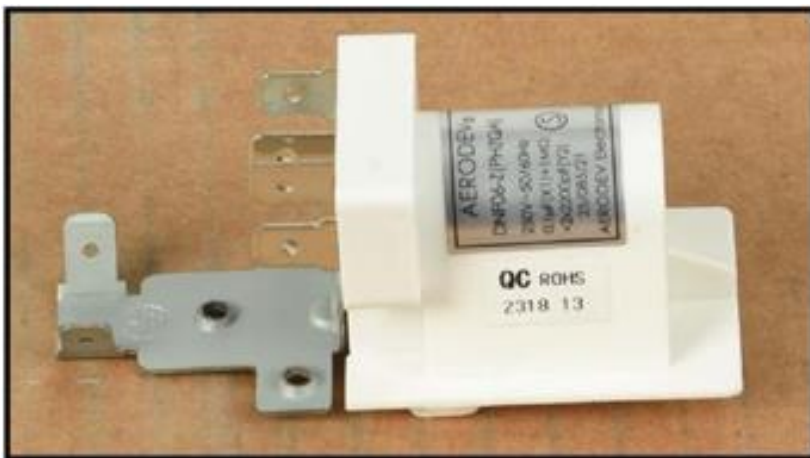


Above sketch show the connectors of the regeneration valve on the electrical card. Probes of the tester should be applied on to the related connectors.

From the component:



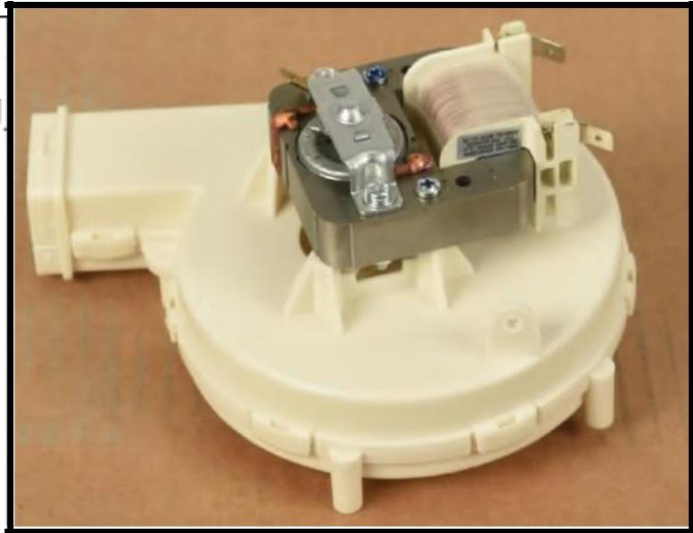
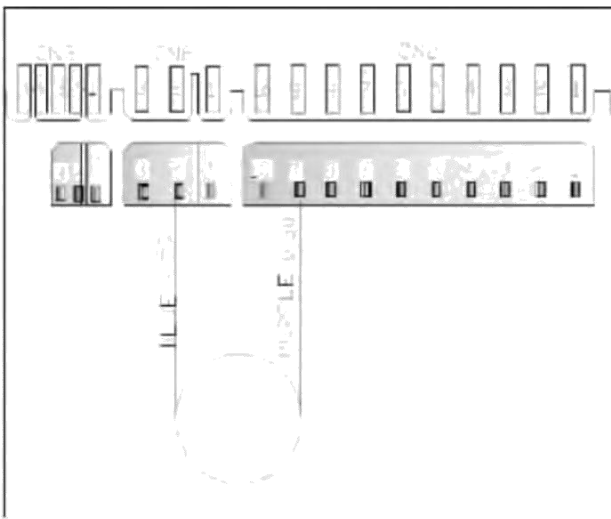
### 2.13 PARASITE FILTER



### 2.14 TURBO FAN MOTOR

From the electrical card:

	C	T
FAN MOTOR	CN 6.2 - CN 2.9	KN 6.2 - KN 2.8



Above sketch shows the connectors of the fan motor on the electrical card.

From the component:

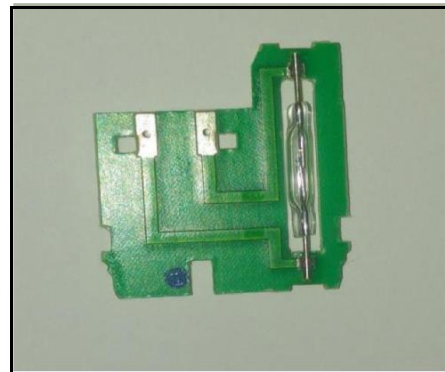
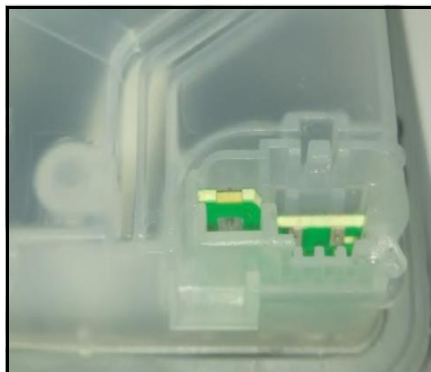


Turbo fan resistance value:  $265 \pm \%10 \Omega$  (The resistance of the turbo fan is measured with the resistor switch).

## 2.15 RINSE AID SENSOR

From the electrical card:

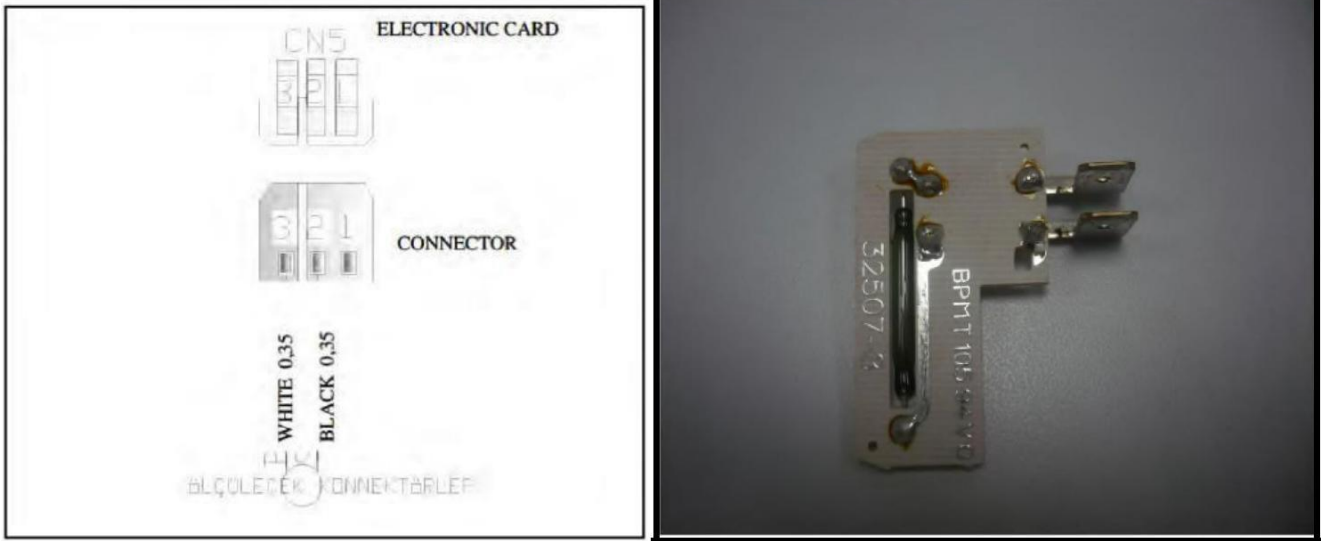
		C	T		
RINSE AID SENSOR	CN 5.3 - CN 5.2	0Ω NO RINSE AID ∞Ω THERE IS RINSE AID	KN 50.8 - KN 50.9	0Ω NO RINSE AID ∞Ω THERE IS RINSE AID	RINSE AID OFF RINSE AID ON



Below sketch shows the connectors of the rinse aid sensor on the electrical card.

**From the component:**

Probes of the tester should be applied on to the related connectors as shown on the pictures.

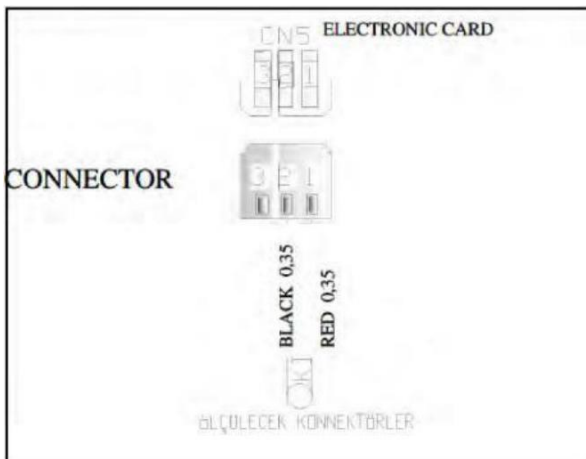


## 2.16 SALT SENSOR

Salt sensor can also be measured from the water softener when the salt sensor assembled on the water softener.

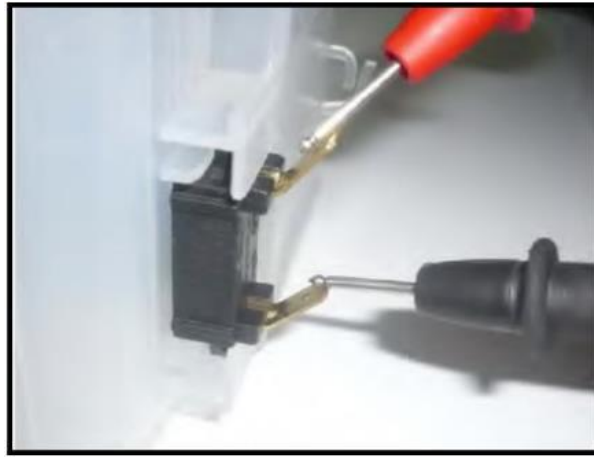
**From the electrical card:**

		C		T	
SALT SENSOR	CN5.1 - CN5.2	0 Ω NO SALT ∞Ω THERE IS SALT	KN50.10 - KN 50.11	0 Ω NO SALT ∞Ω THERE IS SALT	Measure just on the electronic



Sketch above show the connectors of the salt sensor on the electrical card. Probes of the tester should be applied on the related connectors.

From the component:



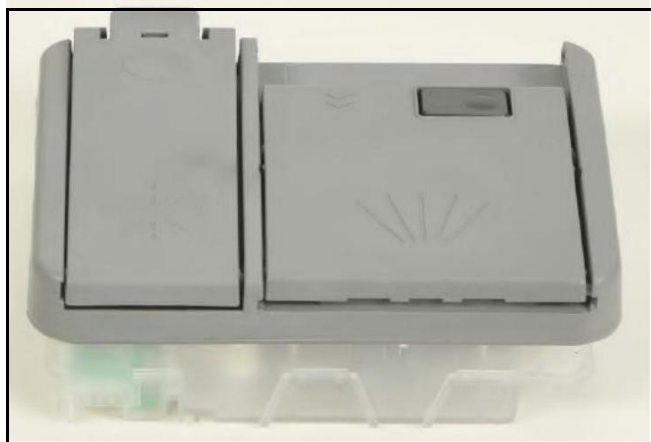
## 2.17 POWER CORD



## 2.18 DETERGENT / RINSE AID DISPENSER

It can't be measured from the electrical card:

	C	T
DETERGENT DISPENSER	2300 $\Omega$ $\pm$ 10% (25 C°)	2300 $\Omega$ $\pm$ 10% (25 C°)



### 3.INTERFACE AND HARDWARE

#### 3.1 D1 UI (D13\_2):

Apart from the on-off switch that is a separate component, the UI includes:

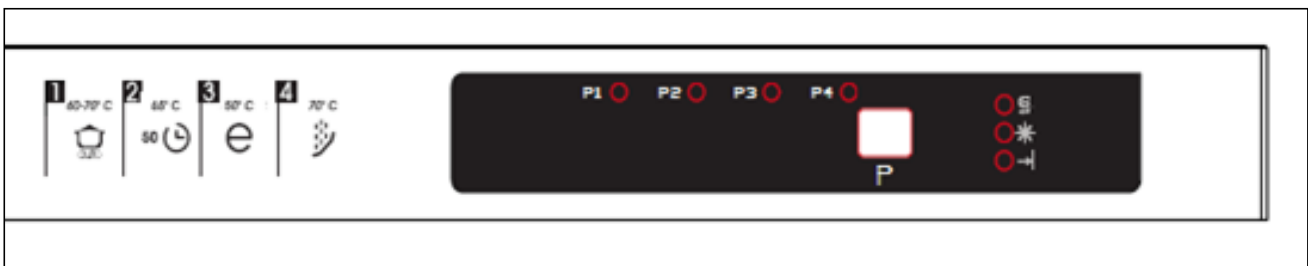
“Selection program” button;

4 program LEDs;

“Salt” LED;

“Rinse” LED;

“End” LED.



**D1 UI**

#### 3.2 D2 UI (D21\_1) :

Apart from the on-off switch that is a separate component, the UI includes:

“Selection program” button;

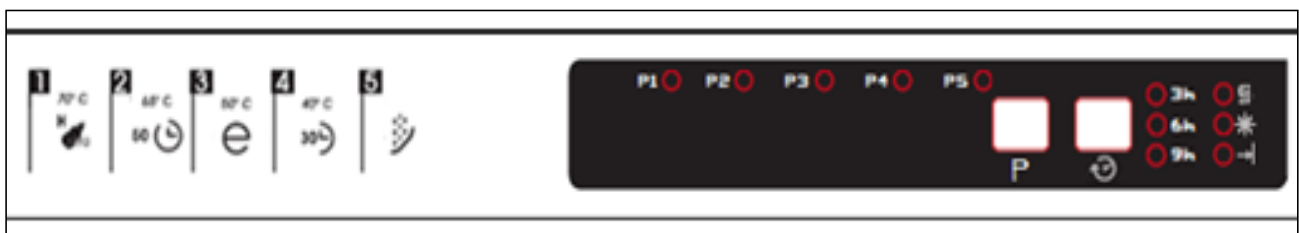
5 program LEDs;

“Salt” LED;

“Rinse” LED;

“End” LED;

“Start delay selection” button, 3-LEDs bar (the start delay function is incremental, i.e. without “counting during Power Fail”).



**D2 UI**

Note: Auto program works if turbidity is present instead of intensive program.

### 3.3 D22\_1:



Same as D21\_1. Also hygiene program is added.  
"Selection program" button;

"Salt" LED;

"Rinse" LED;

"End" LED;

Note: Auto program works if turbidity is present (instead of intensive program.)

Program sequences:

p1-hygiene 70 C  
p2-int 70C  
p3-super50  
p4-eco  
p5-quick 30  
p6-rewash

### 3.4 D4 UI (D41\_2,D42\_2):

Apart from the on-off switch that is a separate component, the UI includes:

"Selection program" button;

2.5 digit (programs & delay);

"Salt" LED;

"Rinse" LED;

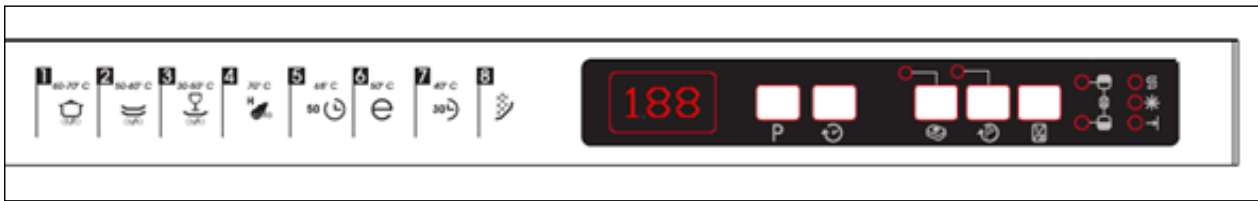
"End" LED;

"Start delay selection" button, 3-LEDs bar (the start delay function may be absolute, i.e. with "counting during Power Fail" by RTC).

"Half load selection" button, with 2 LEDs;

"PW selection" button, with 1 LED;

"Tab selection" button, with 1 LED.



### 3.5 D50 UI (D12\_7)

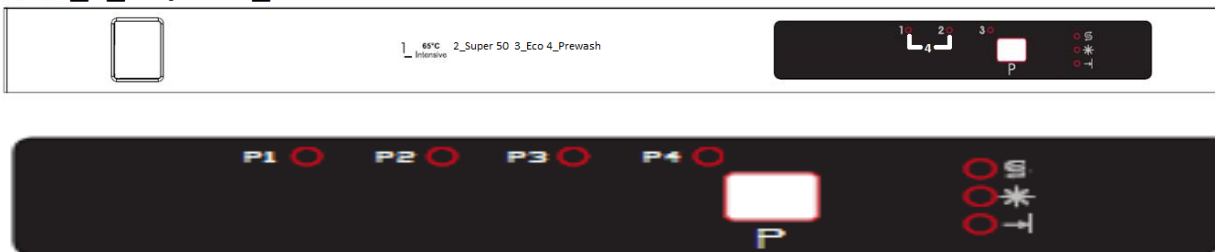


Apart ON/OFF switch that is a separate component interface includes:

- Program button with 3 leds;
- Led "Rinse Aid";
- Led "Salt";
- Led "End";

### 3.6 D50 (D13\_7)

#### D13\_7\_Q / D13\_7



### 3.7 D51 UI (D22\_7)

Apart from the on-off switch that is a separate component, the UI includes:

"Selection program" button;

1 digit (programs);

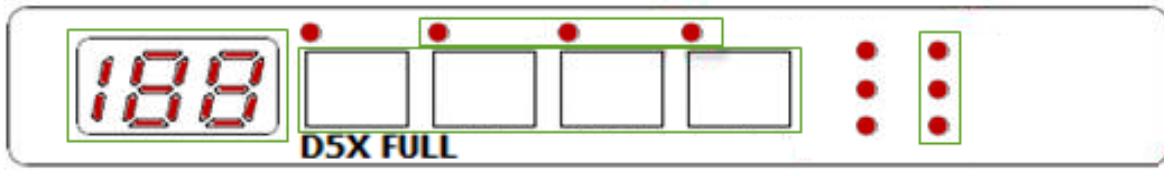
"Salt" LED;

"Rinse" LED;

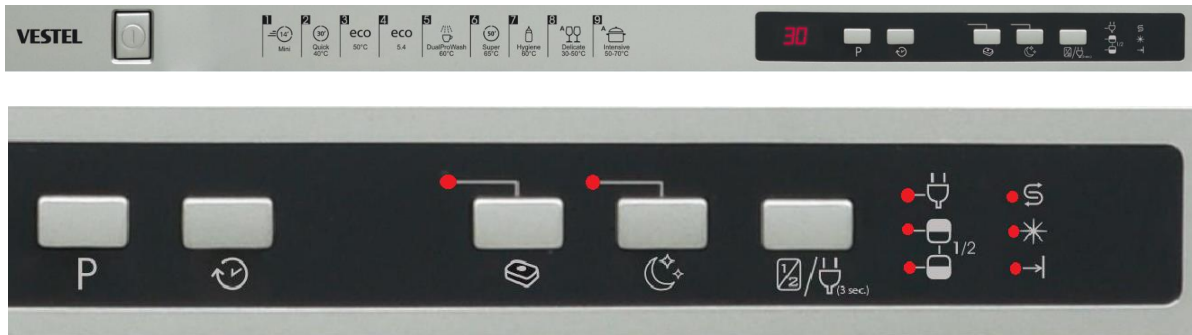
"End" LED;

"Start delay selection" button, 3-LEDs bar (the start delay function is incremental, i.e. without "counting during Power Fail"); "Half load selection" button, with 1 LEDs.

### 3.8 D5X Full



### 3.9 D45 with water recovery tank



Apart from the on-off switch, there is a separate component, the UI includes:

16

“Selection program” button;

2.5 digit (programs & delay);

“Salt” LED;

“Rinse” LED;

“End” LED;

“Start delay selection” button, 3-LEDs bar (the start delay function may be absolute, i.e. with “counting during Power Fail” by RTC). “Half load selection” button, with 2 LEDs; Energy save option is activated/deactivated by pressing half load button for 3”

“Tablet selection” button, with 1 LED.

“Extra silent selection” button, with 1 LED.

Front Display of D45





## 4. WASHING PROGRAMS ( 60&45 CM)

### 4.1 Washing program Cross Table

Model	PRE WH	QUICK 30'	DELICATE 40 C	ECO 50 C	ECO 5.4lt	DALY	DUAL PRO WASH	SUPER 50'	SUPER 55/60 C	HYGIENE 60 C	INT 65 C(AUTO)	INTENSIVE 70C	EXTRA HYGIENE E70C	A.DEL	A.NORMAL	A.INT	Bardak +21/30	14'
D13_2	X	-	-	X	-	-	-	X	-	-	X	-	-	-	-	-	-	-
D14_5	-	-	-	X	-	-	-	X	-	-	-	-	-	-	-	-	X/X	X
D21_1	X	X	-	X	-	-	-	X	-	-	-	X	-	-	-	-	-	-
D22_1	X	X	-	X	-	-	-	X	-	-	-	X	X	-	-	-	-	-
D41_2	X	X	-	X	-	-	-	-	X	X	-	-	X	X	X	X	-	-
D42_2	X	X	-	X	-	-	-	-	X	X	-	-	X	X	X	X	-	-
D45	-	X	-	X	X	-	X	X	-	X	-	-	-	X	-	X	-	X
D41_5	-	-	-	X	-	-	-	X	-	-	-	-	-	-	-	-	X/X	X
D12_7	X	-	-	X	-	-	-	-	-	-	X	-	-	-	-	-	-	-
D13_7	X	-	-	X	-	-	-	X	-	-	X	-	-	-	-	-	-	-
D21_7	X	X	-	X	-	-	-	X	-	-	X	-	-	-	-	-	-	-
D22_7	X	X	-	X	-	-	-	X	-	-	X	-	X	-	-	-	-	-
D32_7	X	X	X	X	-	X	-	X	-	-	X	-	X	-	-	-	-	-
D41_7	X	X	-	X	-	-	-	X	-	-	-	-	X	X	X	X	-	-
D42_7																		

X = present

- = not present

\* Vers. D4: Auto Delicate 30/50 C

\* Vers. D4: Auto Normal 50/60 C

\* Vers. D4: Auto Intensive 60/70 C

In D4 model if PW option is selected: (Prewash+Hygiene) → Hygiene 60 C becomes Extra Hygiene70 C program.

#### Programme sequence

Program number	D45
1	Mini 14'
2	Quick 30'
3	Eco 50°C
4	Eco 5.4lt
5	Dual Pro Wash 60°C
6	Super 50' 65°C
7	Hygiene 60°C
8	Auto Delicate 30°C-50°C
9	Auto Intensive 50°C-70°C

#### Options & models:

Option	D13_2	D14_5	D21_2	D41_2/D42_2	D45	D41_5	D12_7	D13_7	D22_7	D32_7	D41_7-D42_7
PW Button	-	-	-	X	-	-	-	-	-	-	-
Delay Timer	-	-	x	X	X	-	-	-	x	X	x
Half load	-	-	-	X(3 mode)	X(3 mode)	X(3 mode)	-	-	X(1mode)	X(1mode)	X(3 mode)
Tablet	-	-	-	x	X	-	-	-	-	x	x
Energy Save					X						
Extra Silent					X						
Buzzer	x	x	x	x	X	x	x	x	x	x	x

## 5. WASHING SPECIFICATIONS AND PROGRAMS

### 5.1 Starting of the program:

-After the first power on, until pressing any button display shows two dashed lines ("--", justified to the right) , than if pressing any button the (default program ECO) is shown at every turn. ( Ex: 3secs P3, 1sec 188).

- When the dishwasher is powered off and on again the last executed program and options are not visualized on screen anymore. Each energized of the machine, Eco program is set to as default and the options that are chosen before(delay start,tablet,half load etc.. will be cancelled due to ecodesign regulations).

-The selected washing program is visualized in F1 and F2 by washing LEDs and in F4 by display (P+number; from P1 to P8); in F4 the duration of the program and its P+number are alternatively visualized (3" Pn, 1" time). At any pressure of "Program button" the number of program is incremented, and when it reaches P8 restarts from P1. When the program starts, the remaining time of such a program is visualized in the same format.

- During the wash, if the user changes the program by pressure of program button: if the new program has a corresponding step, display shows the time of the new program without the passed time.

-Before the washing program starts, if the user pushes the delay button, delay led will be on at both displays, the delay time occurs in the format "nnh" (max 19h); when the program starts, both displays visualizes the remaining delay time in the same format (1 hour steps).

- When a Failure is present the code of the failure is visualized at the display. (Ex: "F2" with all leds blink.) If it has not display, visualized the error codes by blinking dedicated LEDs.

-In machines having screen ,When the Service Dept. runs the Salt Set program, "SL" is visualized for 2" and then the last set value is shown (the default value "L3" for the first time). Without screen models,directly shown the error code with dedicated leds.

### 5.2 Selecting and Running of program:

- While choosing the program, dishwasher door must be open. If user tries to command the dishwasher while the door is closed the buzzer will be activated for 1sec to show that it is not allowable.

- By pressing the **program** button, suitable program is chosen.

- Program starts without delaying after closing the door (if the measured temperature is less than 45°C).

- When program starts the remaining time is visualized in the same format.

**Note1:** During program in the display at every 3secs, the Remaining time will be shown at the display . ( Ex: 3secs P3, 1sec 188).

### 5.3 Opening-closing the door during the program execution

After the start, if the user opens the door, all the functions of the dishwasher stop.

The respective program LED is fix ON, in F4 the display shows alternatively the program number and the duration of the program (3" Pn, 1" time).

-When the door is closed, the program continues. Washing program re-starts without delaying". (if the measured temperature is less than 45°C) (This is valid for also ON/OFF condition.)

-Wait 8" before restart program if temp. is equal or more than 45° C. (This is valid for also ON/OFF condition.).

-During a **Dry** step. At the power on or open /close the door , the program goes to ends for all models.

- If temp. is equal or more than 45° C when user open/close the door or turn off/on machine or pause/start machine, wait 8" before restarting the program.

## 5.4 Memorization during cycles

During washing program steps and options are stored in memory and a flag "cycle in progress" is set. At the end of the program, the flag "cycle in progress" is reset, and a new cycle can start.

## 5.5 Power Fail:

During washing programs, phase and options are stored in memory and a flag "cycle in progress" is set.

If a power fail occurs, then:

during a **Delay Start**: at the new power on, the program consumes the remaining time;

during a **Drain + Fill** step: at the new power on, the program continues from the point where it remains.

during a **Wash** step: at the power on, the program consumes the remaining time;

during a **Heating** step: at the power on, the program continues heating up to the desired temperature, and the time out for the heating restarts to the beginning (water could be cold again);

- During a **Dry** step, At the power on the program also ends.

- If machine has not a display and when you open /close the door, the program also ends.

It is possible that the power fail occurred when a regeneration cycle is requested. If it occurs:

- During the first two step of a salt regeneration cycle ( 60" REGVALVE = ON or 60" REGVALVE+DRAIN ON): at the power on washing program will continuos.

- After the first two step of a salt regeneration cycle: at the power on the washing program will end and the resin wash will be performed at the beginning of the next washing cycle.

Means that;

Until the first pause step(regeneration valve+drain+480" pause), if Power OFF/ON or Door Open/Close happens, program resumes. If Power OFF/ON or Door Open/Close happens in the second pause step and the other steps, program ends. In that case, resin washing is executed at the beginning of the next step.

## 5.6 Modification of a program

- During a program, open the door;
- Select a new program by pressing the program button;
- Closing the door, the machine will follow the new program steps.

## 5.7 Modification of a program with opening the door:

- The program continues with the flow program but with the parameters (temperature, times) of the new program.
- During a **Heating** step, if the user change the program, The time out for the heating restart to the beginning (water could be cold again).
- If user changes program during washing, the duration is adapted. Namely, machine must go to the same step in the algorithm and show the duration of the related step of the new program.
- Adding options such as tablet, hygiene, half load to the drying process should not change time displayed on the display . However, when the extra drying option is added, the display time may change depending on the drying time.
- When the tablet option is selected, it is desirable that the main wash be 55°C in any case.

## 5.8 Cancelling of a program (Reset)

- During a program, open the door.
- **Press program** button for 3sec.
- The end led starts to blink at the display and display shows "1" to indicate that cancelling is ready.
- After 3sec of closing the door, draining will be executed.

- At the end of the reset, the End led will be ON and the buzzer will be activated (1sec sound, 4sec wait until total time 21sec is completed [total 5 bip sound] until 15 min passed) If the door is not opened by the user, the activation of the buzzer will continue at ever each 5min passed (with 5 time bip in 21sec as indicated above until 15 min passed).
- After the end of the program when door is opened, the buzzer activation will be ended. (End led ON)
- If user cancels the program when the door is closed and presses program button to select another program, this another program starts at the beginning when the door is closed.
- Drain pumps never operates if the door is open.

### 5.9 Termination of a program:

When the program is completed, End led will be on and the buzzer will be activated (1sec sound, 4sec wait until total time 21sec is completed [total 5 bip sound]) If the door is not opened by the user the activation of the buzzer will continue until 15 min passed which means that in first 5min : (1sec sound + 4sec wait) x5) signal / In the second 5min: (1sec sound + 4sec wait) x5) signals and in the last 5min: (1sec sound + 4sec wait)x5) signals, then the routine is stopped...

After the end of the program when door is opened, the buzzer activation will be ended. (End led ON).

### 5.10 “Rinse-aid” absence and “Salt” absence visualization

Two LEDs for rinse-aid absence and salt absence are present.  
In D1, D2,D12-7,D22-7,..... models they are driven by hardware.  
Whereas, in model D4, they are driven by the microcontroller.

### 5.11 Program selection and starting while door is closed:

- While the door is closed, it will not be possible to select a program or an option and start to program.
- If any button is pressed during the door is closed, the buzzer will be activated for 1 sec.

### 5.12 Opening door during a regeneration cycle:

It is possible that the door is opened during a regeneration cycle. If it occurs:

- During the first two step of a salt regeneration cycle ( 60" REGVALVE = ON or 60" REGVALVE+DRAIN ON): at the door re-close the washing program will continues.
- After the first two step of a salt regeneration cycle: at the door re-close the washing program will end and the resin wash will be performed at the beginning of the next washing cycle.

### 5.13 OPTION SELECTION:

#### 5.13.1 Selecting and Starting a program with Delay Start:

While Door is Open, by pressing the delay start button, the required delay value is chosen. (ex:19h).  
When pressing to the **delay start** button, delay start button led is on at the display (until expired or cancelled delay time).

Note1: First choosing the program then selecting the delay value is also possible.

Note2: Every 3secs, the Delay value will be shown at the displays ( Ex: 3secs P3, 1sec 19h).

- After 3sec if the user closes the door, the program with Delay will be in operation.
- Buzzer will be activated (1sec) if user open the door and try to select a delay time during the wash.

#### 5.13.2 Cancelling the Delay Start:

- During the delay time duration of a program.
- Open the door.
- By pressing the Delay start button, the delay start option can be canceled. (or can be changed with the new one)
- After cancelling the delay time value, after closing the door. The program will start after 3sec.

### 5.13.3 Selection of 3in1 (tablet) option:

Detergent type selection. If the option is chosen LED is fixed on.

- While the door is open, press **Tablet** button and select program.
- During the wash if the user open the door, Tablet option is still selectable.
- The program will start in 3sec after door is closed. (if the measured temperature is less than 45°C)
- If "Tablet" is selected heating steps must be = <55°C.
- If water hardness level is 1-2-3-4 and tablet option is activated, regeneration is not performed.
- If water hardness level is 5-6 and tablet option is activated, regeneration is performed according to consumed water liters.

### 5.13.4 Selection of Half Load (1 mode) option:

While the door is open, press **Half Load** button (Half load led will be on) and select suitable program. With half load option adding, new program chart follows half load program features/steps.

- The program will start in 3sec after door is closed. (if the measured temperature is less than 45°C)
- During program, the **Half Load** option can be cancelled or can be added.

### 5.13.5 Compatibility between options

Options	PW button	Half load	Tablet	Energy Save	Extra Silent	Start delay
PW button	-	OK	OK	-	-	OK
Half load	OK	-	OK	OK	OK	OK
Tablet	OK	OK	-	OK	OK	OK
Energy Save	-	OK	OK	-	OK	OK
Extra Silent	-	OK	OK	OK	-	OK
Start delay	OK	OK	OK	OK	OK	-

### 5.13.6 Options retention

In case of Power fail in course of cycle , options are stored in memory. When the machine is switched on, the last selected options are again visualized and continues the cycle from the point where it remains.

#### a)Program selection and starting while door is closed:

- While the door is closed, it will not be possible to select a program or an option and start to program.
- If any button is pressed during the door is closed, the Buzzer will be activated for 1sec.

#### b) PW Option (D41\_2 ; D42\_2):

PW option is always selectable by pressing the respective option button. With using this option a cold rinse is added at the beginning of the washing cycle. In some programs this option causes changes of washing (e.g., Hygiene becomes Extra Hygiene).

#### c) Selection of Prewash Option:

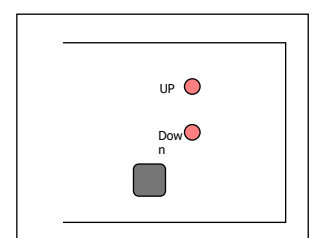
- While the door is open, press prewash button and select suitable program.
- If user select only this option without selecting any program, washing cycle consist of a cold washing for 15'min.
- The program will start in 3sec after door is closed.

**Note:** The prewash option must be chosen before starting the program.

### 5.13.7 Half Load option(3mode) (D41\_2, D42\_2, D41\_7-D42\_7):

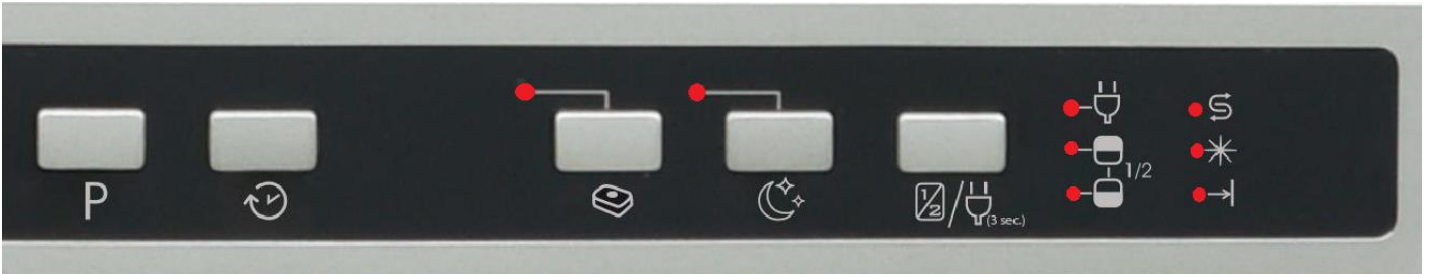
The half load option is selected by pressing the regarding option button before the program starts: when half load option is chosen, washing program starts from main wash step (i.e., skipping the PW step).

When half load button is pressed:



- the first time:** the upper spray LED is on, and lower spray LED is off: wash is executed only with upper spray arm;
- the second time:** the upper spray LED is off, and lower spray LED is on: wash is executed only with lower spray arm;
- the third time:** the upper spray LED is on and lower spray LED arm is on: wash is executed with both spray arms;
- the fourth time:** the upper spray LED is off and lower spray LED is off: normal wash.

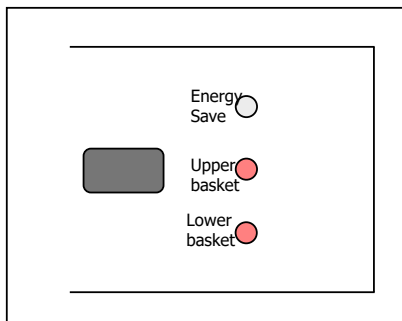
Working principle of half load button of D45 model



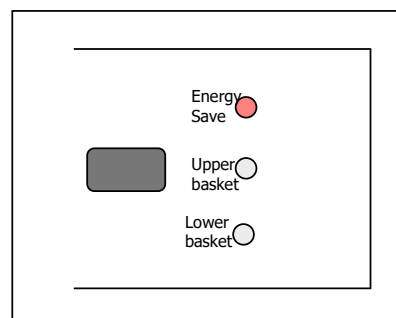
The half load option is selected by pressing the regarding option button before the program starts: when half load option is chosen, washing program starts from main wash step (i.e., skipping the PW step).

When half load button is pressed:

- the first time:** the upper spray LED is on, and lower spray LED is off: wash is executed only with upper spray arm;
- the second time:** the upper spray LED is off, and lower spray LED is on: wash is executed only with lower spray arm;
- the third time:** the upper spray LED is on and lower spray LED arm is on: wash is executed with both spray arms;
- the fourth time:** the upper spray LED is off and lower spray LED is off: normal wash



In order to activate/deactivate energy save option, user should press half load button for 3".



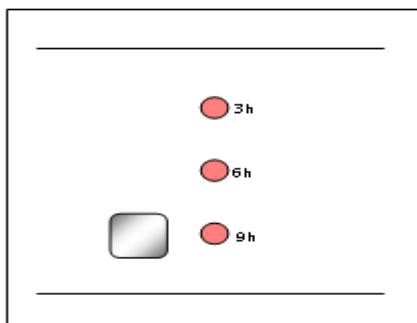
### 5.13.8 Delay Start option (D21\_2; D22\_7):

The delay start option is selected by pressing the regarding option button before the program starts. It is possible to select the delay option before select the program.

Before starting the program, the delay is selected by consecutive pressures of the button; the selection loop of sequences is: no selection, 3h, 6h, 9h, no selection, 3h, etc. After 3" than closing the door, the program with delay will be in operation.

Cancelling the delay start is possible during the delay time.

- Open the door
- Press the delay button, until the delay time is off.
- Close the door. The Washing program will start after 3".



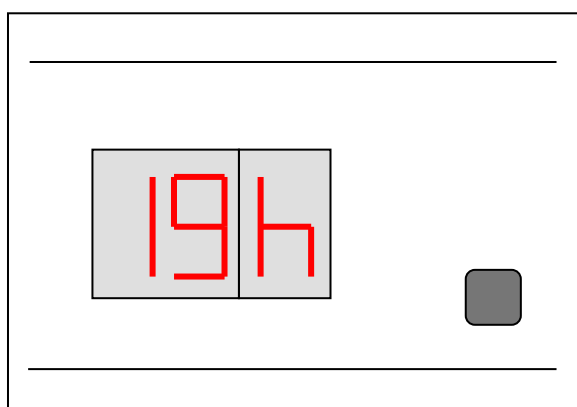
### 5.13.9 Delay Start option (D41\_2; D42\_2)

The delay start option is selected by pressing the regarding option button before the program starts. It is possible to select the delay before selecting the program. Before starting the program, the delay is selected by consecutive pressures of the button. At each pressure, the display shows one step of increment (from 1h to 19h); having been reaching its maximum value (19h), the next pressure clears the delay and shows "0h".

After 3" than closing the door, the program with delay will be in operation.

Cancelling the delay start is possible during the delay time.

- Open the door
- Press the delay button, until the delay time is "0h"
- Close the door. The Washing program will start after 3"



### 5.13.10 Tablet (D41\_7-D42\_7,D32\_7,D41\_2):

If the relative button is pressed, the program will execute the washing steps for "Tablet" functions instead of the normal ones.

- While the door is open, press Tablet button and select suitable program.
- The program will start in 3sec after door is closed.
- During the wash if the user open the door, Tablet option is still selectable.

## 5.14 TIMEPHASE

Timephase is a minimum duration that lasts as one wash phase. According to water inlet temperature, wash phase can be increased but must last at least dedicated timephase duration.

Rule:

- a) If water inlet temperature of main wash in eco program, < 30° C; then timephase duration of main wash is not taken into consideration. When heating step is completed, then following step is performed and main wash step is finished.
- b) Water inlet temperature of main wash in eco program > 30° C; corresponding timephase duration of main wash step of eco program must be performed.
- c) After identifying the decision >/< 30°C by NTC; and if user S/P, Open/close the door, Power off/on the machine, Time Phase duration consumes from the remaining time. If user modify the program, corresponding step of the new selected program must be performed.

These two rules are only valid for ECO program. Other program flux are not affected considering to water inlet temperature (30 C) in main wash.

## 5.15 BUZZER

The situations when the buzzer is active:

- 1- In failure, buzzer is active during 1 sec. intervals as long as the machine is not powered off/on.
- 2- At the end of program, buzzer is active during 15 min. (the End led will be ON and the buzzer will be activated (1sec sound, 4sec wait until total time 21sec is completed [total 5 bip sound] until 15 min passed) If the door is not opened by the user, the activation of the buzzer will continue at ever each 5min passed (with 5 time bip in 21sec as indicated above until 15 min passed).
- 3- Buzzer is not active when selecting program or option.
- 4- When display cable is disconnected, buzzer is not active.

## 6. REGENERATION CYCLE:

When it occurs the Regeneration Valve works after last rinse and during the drying steps.

Hardness level (45cm)

There are 6 hardness levels.			
Water Hardness level	German Hardness °dH	French Hardness °dF	Litres
Level 1	0-6	0-10	Never
Level 2	7-11	11-20	100 lt
Level 3	12-17	21-30	72 lt
Level 4	18-22	31-40	41 lt
Level 5	23-34	41-60	28 lt
Level 6	35-50	61-90	14 lt

The consumed litres are counted by FLM impulses.

In case of FLM broken, the liters corresponding at the FLM time out are used. ( 2,1 lt + 2,5 lt ).

In case of "Tab" option ON :

- If the level set is less than L4: the regeneration cycle is not performed, but the quantity of consumed water is counted. When the target value is reached, at the first cycle without the "Tablet" ,the regeneration cycle is performed.
  - If the level set is equal or more than L5: the regeneration cycle is performed when the quantity target is reached.
  - If the washing program is a "pre wash", the regeneration cycle is not performed.
  - If user cancels a program during regeneration or after regeneration and before resin wash, at the beginning of the next program the dishwasher performs the resin wash to remove the salty water from the resin chamber.
- The resin wash will be: load 2 lt of water with drain pump on.
- During the resin wash the circulation Pump must be off.



## REGENERATION CYCLE FOR 60 CM:

When it occurs the regeneration valve works after last rinse and during the drying steps. There are 6 hardness levels.

Water Hardness level	Litres
Level 1	Never
Level 2	116 lt
Level 3	64 lt
Level 4	52 lt
Level 5	46 lt
Level 6	16 lt

The consumed litres are counted by flow meter impulses.

In case of flow meter broken, the litres corresponding at the flow meter time out are used

If user cancels a program during regeneration or after regeneration and before resin wash, at the beginning of the next program the dishwasher performs the resin wash to remove the salty water from the resin chamber. The resin wash will be: load 2 lt of water with drain pump on. During the resin wash the circulation Pump must be off.

Regeneration is not performed at prewash program

If l water hardness level is changed from lower to higher, regeneration cycle is performed at the end of the first program  
If l water hardness level is changed from higher to lower, regeneration cycle is not performed at the end of the first program. Regeneration is performed after water level reach to value of level

- If Water hardnes level is 5 or 6
  - First regeneration step is performed 0,2lt water
- If Water hardnes level is 2 or 3 or 4
  - First regeneration step is performed 0,1lt water
- If Water hardnes level is 1
  - Regenartion step is not performed

### Notes;

-If the level of regeneration step is incremented, (for ex:from level3 to level4-5 or 6) ,at the end of the next washing cycle, it must perform resin wash.

-If the regeneration level is decremented, (for ex: from level4 to level 3); checked how much water used until then and according to new level, how much water will be used more for resin wash is calculated.(level 3=64 lt- used liters until then).

-During waiting step of regeneration process, end user open/close the door or Power OFF /ON condition, program goes to END, but next step of washing cycle starts with resin wash, so that water level resets to zero and re-counts down from corresponding water level.

- When there is no flowmeter connection (by removing flowmeter cable), Electronic card saves the water as 4,58 lt per step.

- For all levels, it is observed that regeneration is performed after how much liters water flows.

### 6.1 Water hardness set (D13\_2 Model):

→ While the door is open and the machine is switched OFF. By pressing the **Program** Button, Switch ON the machine. → Continue to press the Program Button for 3".

→ When water hardness set is recognized, all leds blink once and the last setted level will be shown on the control panel. →Pressure **Program** button to set the desired level.

At any pressure of **Program** button hardness level is incremented.

Hardness level returns to 1 after hardness level 6.

Note: if it is the first hardness set, hardness level is level 3.

- Level 1: Led1 (P1-Int 65 C)
- Level 2: Led2 (P2- Super 50')
- Level 3: Led3 (P3-Eco 50 C)
- Level 4: Led4 (P4-Prewash)
- Level 5: Led1-Led4 (P1-P4) (Int 65 C –Prewash)
- Level 6: Led2-Led4 (P2-P4) (Super 50'-Prewash)

→ By switching off the machine, the new level is setted.

<b>D14_5 Water Hardness Level</b>	
Level 1	Led1 (P1) is ON
Level 2	Led2 (P2) is ON
Level 3	Led3 (P3) is ON
Level 4	Led4 (P4) is ON
Level 5	Led1-Led4 (P1-P4) are ON
Level 6	Led2-Led4 (P2-P4) are ON

### 6.2 Water hardness set (D21\_2, D41\_5 Model):

→ While the door is open and the machine is switched OFF. By pressing the **Program** Button, Switch ON the machine.

→ Continue to press the Program Button **for 3"**.

→ **When water hardness set is recognized, all leds blink once** and the last setted level will be shown on the control panel. (release the program button) → Pressure **Program** button to set the desired level. At any pressure of **Program** button hardness level is incremented.

Hardness level 1 returns after hardness level 6.

Note: if it is the first hardness set, hardness level is level 3.

- Level 1: Led1-Led5(Int 70C-Prewash)
- Level 2: Led2-Led5(Super 50'-Prewash)
- Level 3: Led3-Led5(Eco 50 C-Prewash)
- Level 4: Led4-Led5(Quick 30-Prewash)
- Level 5: Led1-Led4- Led5(Int 70C-Quick 30'- Prewash)
- Level 6: Led2-Led4- Led5 (Super 50'-Quick 30'- Prewash)

→ By switching off the machine, the new level is setted.

### 6.3 Water hardness set (D12\_7):

(int65°C Led26 ; Eco 50 C: Led2, Prewash:Led3)

- When the door is open;
- By pressing the Program Button, switch on the machine.
- Continue to press the Program button **for 3"**
- **When water hardness set is recognized, all leds blink once**

- Led26-Led2-Led3 will be ON and OFF and the last setted Level will be shown on the control panel. (release the program button) Note: if it is the first hardness set, hardness level is level 3.

By pressing the program button each time, the water hardness level is adjusted to an upper level and after level 6, again the program button is pressed the level is become 1.

Combination of leds for water hardness adjustment:

- Level 1: Led26 (int65°C)
- Level 2: Led2 (Eco 50 C)
- Level 3: Led3 (Prewash)
- Level 4: Led26-Led3 (int65°C- Prewash)
- Level 5: Led2-Led3 ( Prewash- Eco 50 C)
- Level 6: Led26 –Led2-Led3 (Prewash- Eco 50 C- int65°C)
- By switching off the machine, the new level is setted.

## 6.4 Water hardness set (D22\_7):

- While the door is open and the machine is switched OFF.
- By pressing the **Program** Button, Switch ON the Machine.
- Continue to press the **Program** Button for 3".
- If "Hardness Set" is reconized, "S" and "L" will be shown sequentially in the display for 2sec. And the last setted level will be shown in the display.

**Note:** if it is the first hardness set, hardness level is level 3 ; firstly "3" will be on 1sec, than "L" will be on 0.5sec and they will be shown sequentially in the display.

Level 1: firstly "1" will be on 1sec, than "L" will be on 0.5sec and they will be shown sequentially in the display.

Level 2: firstly "2" will be on 1sec, than "L" will be on 0.5sec and they will be shown sequentially in the display

Level 3: firstly "3" will be on 1sec, than "L" will be on 0.5sec and they will be shown sequentially in the display

Level 4 firstly "4" will be on 1sec, than "L" will be on 0.5sec and they will be shown sequentially in the display

Level 5 firstly "5" will be on 1sec, than "L" will be on 0.5sec and they will be shown sequentially in the display

Level 6: firstly "6" will be on 1sec, than "L" will be on 0.5sec and they will be shown sequentially in the display

## 6.5 Water hardness set (D41\_2, D42\_2, D45, D32\_7 and D41\_7-D42\_7 Model)

- While the door is open and the machine is switched OFF.
- By pressing the **Program** Button, Switch ON the Machine.

Continue to press the Program Button for 3".

- If "Hardness Set" is reconized, "SI" will be shown at the display for 2sec. And the last setted level will be shown at display.

- Pressure prograam button to set the desired level.
- At any pressure of **Program** button, hardness level is incremented. Hardness level 1 returns after hardness level 6.

**Note:** if it is the first hardness set, hardness level is level 3 (L3)

Level 1: L1

Level 2: L2

Level 3: L3

Level 4: L4

Level 5: L5

Level 6: L6

- By switching off the machine, the new level is setted.

## 7. RINSE AID SET

- While the door is open and the machine is switched OFF.
- By pressing the **Program** button, Switch ON the Machine.
- Continue to press the Program Button for 5".
- For models without display: when rinse aid set is reconized, all leds blink twice
- For models with one digit display: when rinse aid set is reconized, "r" and "A" will be shown sequentially in the display for 2sec. And the last setted Level will be shown in the display.
- For models with 2,5 digit display: when rinse aid set is reconized, "rA" will be shown in the display for 2sec. Release program button. The last setting level is viewed\*.
- If it is the first rinse aid set, Default rinse aid level is 4 which corresponds to 4,5 cc.
- At any pressure of **Program** button Rinse aid level is incremented. Rinse aid level 1 returns after level 5.

For models without display; rinse aid levels are the same with water hardness levels as below:

### D13 model:

Level 1: Led1 (P1-Int 65 C)

Level 2: Led2 (P2- Super 50')

Level 3: Led3 (P3-Eco 50 C)

Level 4: Led4 (P4-Prewash)

Level 5: Led1-Led4 (P1-P4) (Int 65 C –Prewash)

**D21 model:**

- Level 1: Led1-Led5(Int 70C-Prewash)
- Level 2: Led2-Led5(Super 50'-Prewash)
- Level 3: Led3-Led5(Eco 50 C-Prewash)
- Level 4: Led4-Led5(Quick 30-Prewash)
- Level 5: Led1-Led4- Led5(Int 70C-Quick 30'- Prewash)

**D12\_7 model:**

- Level 1: Led26 (int65°C)
- Level 2: Led2 (Eco 50 C)
- Level 3: Led3 (Prewash)
- Level 4: Led26-Led3 (int65°C- Prewash)
- Level 5: Led2-Led3 ( Prewash- Eco 50 C)

**For models with display;**

Level	Display
1(0cc)	r1
2(1,5cc)	r2
3(3cc)	r3
4(4,5cc)	r4
5(6cc)	r5

**For models with one digit display;**

- Level 1: firstly "1" will be on 1sec, than "r" will be on 0.5sec and they will be shown sequentially in the display.
- Level 2: firstly "2" will be on 1sec, than "r" will be on 0.5sec and they will be shown sequentially in the display
- Level 3: firstly "3" will be on 1sec, than "r" will be on 0.5sec and they will be shown sequentially in the display
- Level 4 firstly "4" will be on 1sec, than "r" will be on 0.5sec and they will be shown sequentially in the display
- Level 5 firstly "5" will be on 1sec, than "r" will be on 0.5sec and they will be shown sequentially in the display

If the rinse aid tank is empty and user sets rinse aid level as 1(0cc), "lack of rinse aid" warning is not shown.

Sliding dispenser dosages are shown below in detail.

1 rinse aid dosage is performed when dispenser is ON during 8" and OFF during 8". =>1,5cc

2 rinse aid dosages are performed 8" ON-8" OFF-8" ON-8" OFF=>3cc

3 rinse aid dosages are performed 8" ON-8" OFF-8" ON-8" OFF-8" ON-8" OFF=>4,5cc

4 rinse aid dosages are performed 8" ON-8" OFF-8" ON-8" OFF-8" ON-8" OFF-8" ON-8" OFF =>6cc

<i>Action</i>		<i>Old</i>		<i>New(Sliding dispenser)</i>	
Detergent cover opening:		5"		0.3"	
Rinse aid dose:	Dose setting:	Manual in the dispenser		Automatic in the software	
	Dose quantity and time to delivery	1 - 1cc	25"ON; 2"OFF; 25"ON For each setting from 1 to 6	1 - 0cc	OFF
		2 - 2cc		2 - 1.5cc	8"ON; 8"OFF
		3 - 3cc		3 - 3cc	8"ON; 8"OFF
		4 - 4cc		4 - 4.5cc	8"ON; 8"OFF
	5 - 5cc		5 - 6cc	8"ON; OFF	
	6 - 6cc		n/a	n/a	
Standard dose of rinse aid setting by manufacturer		3 (set by manually)		(4-4,5cc set by software)	

## 8. IONIZER

Ionizer function can be activated/deactivated with specified button combinations. Also, when machine is turned off and then on, ionizer function is cancelled. Ionizer cycle is as follow: 5' ON, 55' OFF, 5' ON, 55' OFF,... After 24 hours is completed, ionizer function is deactivated automatically by software. During 5' ON; ionizer component , mini fan and turbo fan work together. During 55", they do not work.

Ionizer must not work within a program.

When the door is opened, ionizer+mini fan+turbo fan stops. They do not work. Ionizer cycle pauses.

To continue, the door must be closed.

Ion led and inner light are on when the door is opened. Ion led lights up like dimming.

**For 60cm D13-D14\_5 - D21-D41\_5 and 45cm D12:**

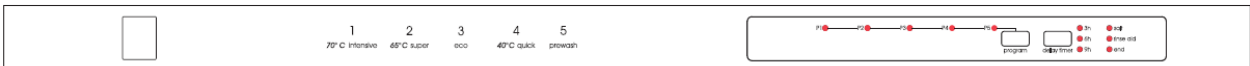
### D13



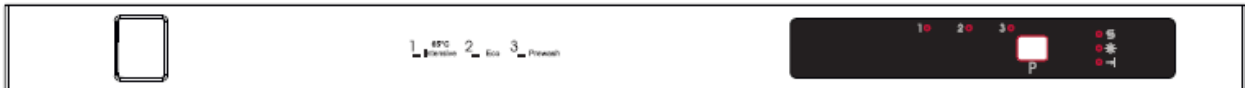
### PROFESYONEL - D14



### D21



### D12



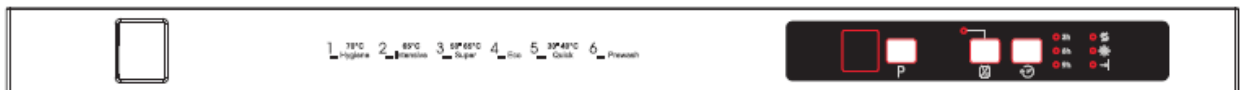
### PROFESYONEL - D41



When machine is ON, press Program button for 6". Between 3 and 6 seconds, drain is executed. After 6<sup>th</sup> second, only ionizer function will be on. The first two program leds P1 and P2 is ON when ionizer is recognized.

**For D22\_7**

### D22



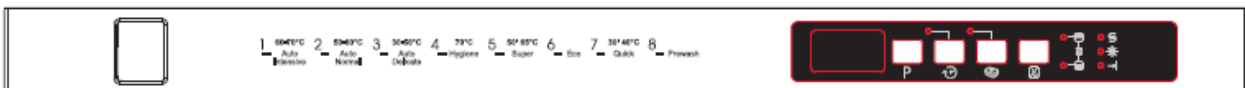
When machine is ON, press Program button for 6". Between 3 and 6 seconds, drain is executed. After 6<sup>th</sup> second, only ionizer function will be on. When ionizer is recognized, "I", "o" and "n" will be shown sequentially in the display.

**For 60&45cm D4 models and D32\_7 model**

### D41 / D4A



### D42 / D41



## D32

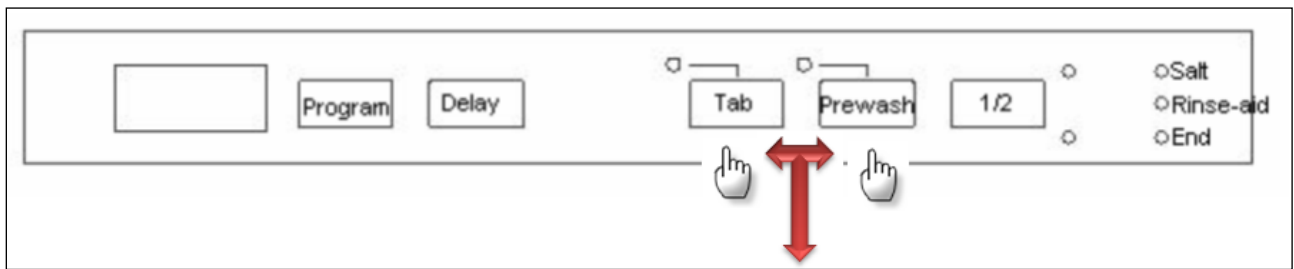


When machine is ON, press Program button for 6". Between 3 and 6 seconds, drain is executed. After 6<sup>th</sup> second, only ionizer function will be on. Display shows "Ion" when ionizer is recognized.

## 9. INNER LIGHT FUNCTION:

Inner light is available only D41\_2, D42\_2, D45, D41\_5, D21\_2 (60 cm) and D41\_7-D42\_7 (45 cm) models.

### D41\_2 and D42\_2, D45 (60 cm):



The door must be at OPEN position during activation and deactivation of inner light modes.

### How to change from "ECO MODE" to "NORMAL MODE" for Inner Light option in 60cm D41 models :

\* First open the dishwasher door and energize the machine via main switch (if it is in OFF position).

\* Press "Tablet" and "Prewash\*" buttons simultaneously for 3 seconds.

**\*For D45 model, Extra silent button is pressed instead of Prewash.**

\* "ILO" will be shown in the digit display for 2 seconds to show that the "Normal Mode" is selected for inner light option. Then display returns its usual position. (Ex: 3" Pn, 1" time).

\* After "Normal Mode" is selected, the inner light will be ON as long as the machine is energized and machine door is open.

### How to change from "NORMAL MODE" to "ECO MODE" for Inner Light option in 60cm D41 models :

\* First open the dishwasher door and energize the machine via main switch (if it is in OFF position).

\* Press "Tablet" and "Prewash" buttons simultaneously for 3 seconds.

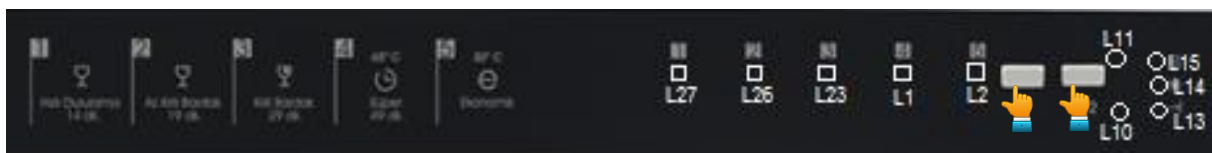
\* "IL1" will be shown in the digit display for 2 seconds to show that the "Eco Mode" is selected for inner light option. Also inner light turns OFF and ON again (blinks momentarily) to show that this selection is activated. Then display returns its usual position. (Ex: 3" Pn, 1" time).

\* After "Eco Mode" is selected, the inner light will be ON for 4min after machine door is opened and then turns OFF.

If any user intervention occurs such as pressing buttons, Eco Mode cycle starts from beginning (inner light is ON for 4min and then becomes OFF again.) Note: Factory setting for inner light are set to "IL1".

**NOTES:** For FI productions, the inner light setting should be allowed only if the door is open condition and before starting program. During program, it can not be allowed to set inner light.

### D41\_5 (Professional Glass Washing)



The door must be at OPEN position during activation and deactivation of inner light modes.

**How to change from "ECO MODE" to "NORMAL MODE" for Inner Light option in 60cm D41\_5 model :**

- \* First open the dishwasher door and energize the machine via main switch (if it is in OFF position).
- \*Program and 1/2Load button should be pressed for 3" at the same time.
- \*"Led 27" and "Led 26" will be ON in the display for 2 seconds to show the "Normal Mode" is selected for inner light option. Then it returns the last programme that user select before.
- \*After "Normal Mode" is selected, the inner light will be ON as long as the machine is energized and machine door is open.

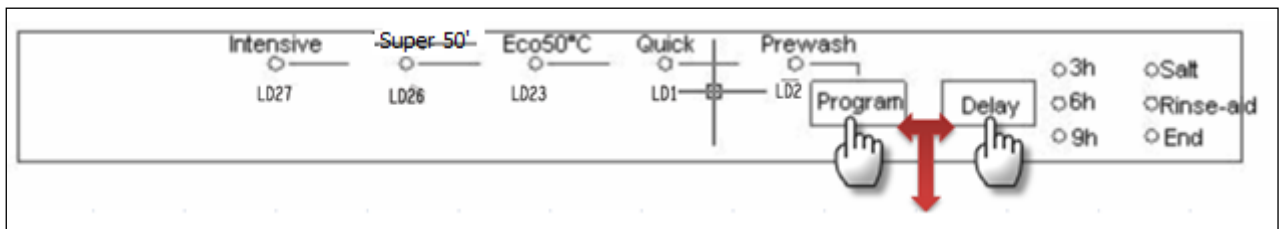
**How to change from "NORMAL MODE" to "ECO MODE" for Inner Light option in 60cm D41\_5 model :**

- \* First open the dishwasher door and energize the machine via main switch (if it is in OFF position).
- \* Program and 1/2Load button should be pressed for 3" at the same time.
- \*"Led 23", "Led 27" and "Led 26" will be ON in the display for 2 seconds to show that the "Eco Mode" is selected for inner light option. Also inner light turns OFF and ON again (blinks momentarily) to show that this selection is activated. Then it returns the last programme that user select before.
- \*After "Eco Mode" is selected, the inner light will be ON for 4min after machine door is opened and then turns OFF.
- \*If any user intervention occurs such as pressing buttons, Eco Mode cycle starts from beginning (inner light is ON for 4min and then becomes OFF again)

Note: Factory setting for inner light are set to 'ECO MODE'.

**NOTES:** For FI productions, the inner light setting should be allowed only if the door is open condition and before starting program. During program, it can not be allowed to set inner light.

**D21\_2(60cm):**



The door must be at OPEN position during activation and deactivation of inner light modes.

**How to change from "ECO MODE" to "NORMAL MODE" for Inner Light option in 60cm D21 model :**

- \* First open the dishwasher door and energize the machine via main switch (if it is in OFF position).
- \*Press 'Program'and 'Delay'buttons simultaneously for 3 seconds.
- \* "Led 27" and "Led 26" will be ON in the display for 2 seconds to show the "Normal Mode" is selected for inner light option. Then it returns the last programme that user select before.
- \*After "Normal Mode" is selected, the inner light will be ON as long as the machine is energized and machine door is open.

**How to change from "NORMAL MODE" to "ECO MODE" for Inner Light option in 60cm D21 model :**

- \* First open the dishwasher door and energize the machine via main switch (if it is in OFF position).
- \*Press 'Program'and 'Delay'buttons simultaneously for 3 seconds.
- \*"Led 23", "Led 27" and "Led 26" will be ON in the display for 2 seconds to show that the "Eco Mode" is selected for inner light option. Also inner light turns OFF and ON again (blinks momentarily) to show that this selection is activated. Then it returns the last programme that user select before.
- \*After "Eco Mode" is selected, the inner light will be ON for 4min after machine door is opened and then turns OFF.
- \*If any user intervention occurs such as pressing buttons, Eco Mode cycle starts from beginning (inner light is ON for 4min and then becomes OFF again)

Note: Factory setting for inner light are set to 'ECO MODE'.

**NOTES:** For FI productions, the inner light setting should be allowed only if the door is open condition and before starting program. During program, it can not be allowed to set inner light.

### D22\_3(60cm)

The door must be at OPEN position during activation and deactivation of inner light modes.



#### How to change from "ECO MODE" to "NORMAL MODE" for Inner Light option in 60cm D21 model :

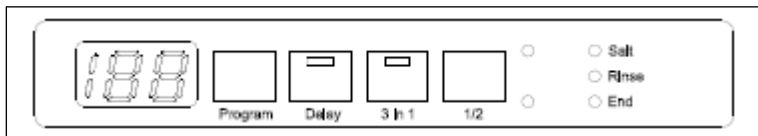
- \* First open the dishwasher door and energize the machine via main switch (if it is in OFF position).
- \* Press 'Program' and 'Delay' buttons simultaneously for 3 seconds.
- \* "0" will be shown in the display for 2 seconds to indicate the "Normal Mode" is selected for inner light option. Then it returns the last programme that user select before.
- \* After "Normal Mode" is selected, the inner light will be ON as long as the machine is energized and machine door is open.

#### How to change from "NORMAL MODE" to "ECO MODE" for Inner Light option in 60cm D21 model :

- \* First open the dishwasher door and energize the machine via main switch (if it is in OFF position).
- \* Press 'Program' and 'Delay' buttons simultaneously for 3 seconds.
- \* "1" will be shown in the display for 2 seconds to indicate that the "Eco Mode" is selected for inner light option. Also inner light turns OFF and ON again (blinks momentarily) to show that this selection is activated. Then it returns the last programme that user select before.
- \* After "Eco Mode" is selected, the inner light will be ON for 4min after machine door is opened and then turns OFF.
- \* If any user intervention occurs such as pressing buttons, Eco Mode cycle starts from beginning (inner light is ON for 4min and then becomes OFF again)

**Note:** Factory setting for inner light are set to 'ECO MODE'.

### D41\_7-D42\_7 (45 cm):



The door must be at OPEN position during activation and deactivation of inner light modes.

#### How to change from "ECO MODE" to "NORMAL MODE" for Inner Light option in 45cm

##### D41&D42 models :

- \* First open the dishwasher door and energize the machine via main switch (if it is in OFF position).
- \* Press '3in1' and '1/2' buttons simultaneously for 3 seconds.
- \* "ILO" will be shown in the digit display for 2 seconds to show that the "Normal Mode" is selected for inner light option. Then display returns its usual position. (Ex: 3" Pn, 1" time).
- \* After "Normal Mode" is selected, the inner light will be ON as long as the machine is energized and machine door is open.

#### How to change from "NORMAL MODE" to "ECO MODE" for Inner Light option in 45cm D41&D42 models :

- \* First open the dishwasher door and energize the machine via main switch (if it is in OFF position).
- \* Press '3in1' and '1/2' buttons simultaneously for 3 seconds.



\*Press "3in1" and "1/2" buttons simultaneously for 3 seconds.

\*"IL1" will be shown in the digit display for 2 seconds to show that the "Eco Mode" is selected for inner light option. Also inner light turns OFF and ON again (blinks momentarily) to show that this selection is activated. . Then display returns its usual position. (Ex:3" Pn, 1" time).

\*After "Eco Mode" is selected, the inner light will be ON for 4min after machine door is opened and then turns OFF.

\*If any user intervention occurs such as pressing buttons, Eco Mode cycle starts from beginning (inner light is ON for 4min and then becomes OFF again)

**Note:** Factory setting for inner light are set to "IL1".

**NOTES:** For FI productions, the inner light setting should be allowed only if the door is open condition and before starting program. During program, it can not be allowed to set inner light.

## 10. Voice Set Up

### For D41\_2, D42\_2, D45

-First energize the machine via main switch (if it is in OFF position).

- Press both "Prewash\*" and "1/2 load" buttons for 3" at the same time.

**\*For D45 model, Extra silent button is pressed instead of Prewash.**

- If voice controlling is done for the first time, at the end of 3 seconds, "S3" is shown on the display and display card gives a long sound. (level of 3="S3")(Factory setting is set to "S3")
- If voice controlling is done before, At the end of 3 seconds, last recorded voice level is shown on the display (among "S0" to "S3") and display card gives a long sound.

-User can increase or decrease the voice level with "Prewash" and "1/2 load" buttons. The

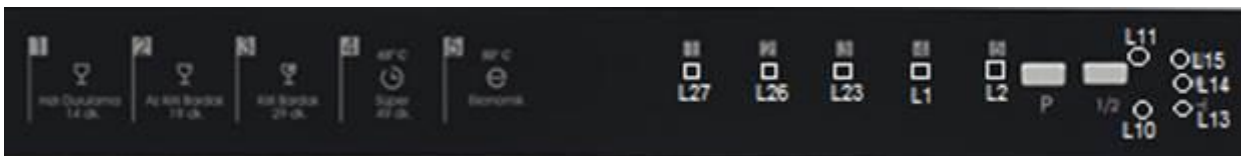
characters must be as follow; -By each pressing "1/2 Load" button;

- Display screen changes from "S0" to "S3".
- Level of sound increases as stepped way;

By each pressing "Prewash" button;

- Display screen changes from "S3" to "S0".
- Level of sound decreases as stepped way.

Machine is switched off in order to record selected level or exit from Voice Set Up.



-First energize the machine via main switch (if it is in OFF position)

-To enter voice set up, Press "1/2 Load" button for 3 seconds.

-If voice set is done for the first time, "S3" is indicated by turning on leds 23,1 and 2.

-To increase the level, use 1/2 Load button.

-To decrease, use Program button.

-Factory setting is set to "S3"

Voice level is indicated with related leds as in below table:

S3	Led 1, Led2, Led23, Led26
S2	Led1, Led2, Led 23
S1	Led1, Led2
S0	Led 2

Machine is switched off in order to record selected level or exit from Voice Set Up.

## For D41\_7, D42\_7,D32\_7

-First energize the machine via main switch (if it is in OFF position).

- Press both "Delay" and "Tablet" buttons for 3" at the same time.
- If voice controlling is done for the first time, at the end of 3 seconds, "S3" is shown on the display and display card gives a long sound. (level of 3="S3")(Factory setting is set to "S3")
- If voice controlling is done before, At the end of 3 seconds, last recorded voice level is shown on the display (among "S0" to "S3") and display card gives a long sound.

-User can increase or decrease the voice level with "Delay" and "Tablet" buttons. The characters must be as follow; -By each pressing "Tablet" button;

- Display screen changes from "S0" to "S3".
- Level of sound increases as stepped way;

By each pressing "Delay" button;

- Display screen changes from "S3" to "S0".
- Level of sound decreases as stepped way.

Machine is switched off in order to record selected level or exit from Voice Set Up.

## For D22\_7

-First energize the machine via main switch (if it is in OFF position).

- Press both "Half Load" and "Delay" buttons for 3" at the same time.
- If voice controlling is done for the first time, at the end of 3 seconds, "S3" is shown on the display and display card gives a long sound. (level of 3="S3")(Factory setting is set to "S3")
- If voice controlling is done before, At the end of 3 seconds, last recorded voice level is shown on the display (among "S0" to "S3") and display card gives a long sound.

-User can increase or decrease the voice level with "Half Load" and "Delay" buttons. The characters must be as follow; -By each pressing " Delay" button;

- Display screen changes from "S0" to "S3".
- Level of sound increases as stepped way;

By each pressing " Half Load" button;

- Display screen changes from "S3" to "S0".
- Level of sound decreases as stepped way.

Machine is switched off in order to record selected level or exit from Voice Set Up.

### NOTES:

\*SOUND levels are 3-2-1 and 0.

\*Buzzer is deactivated at "0" level. Soundless level is"0".

\*Default level and highest level must be "3".

\*From level sound "3" to "1", loudness level is reduced by stages depending on level sound.

## 11. SERVICE TEST

Only service can execute this procedure.

- During the first 6" of test, if a failure code is stored in memory, its codification is shown. Also at the end of the test if an error occurs its error code is visualized.

- Also at the end of the test if an error does not occur during service test and completes the cycle without error, any codification is never shown. The last failure code is never shown anymore. Actually, last failure code is erased after completing the test successfully.

- In models having screen during the service test, "SP" is shown.

Step		Time	Tested Load
0	Show code	6"	Before start, the code of last error is visualized (see below)
1	Drain	6"	Drain pump.
2	Fill (3l/2,5l)*	~ 1'	Flow meter; Inlet Valve;
3/√	<b>Turb. Calibration</b>		<b>Turbidity Calibration (only D4)</b>
4	Fill + Wash (0,5/1lt)**		Flow meter; Inlet Valve; Pressure Switch;
5	Wash	1'	Circulation pump; detergent dispenser. "Deterjan dispenseri tam 1 dk değil; Step 5 in 10. saniyesinde sadece 5 sn boyunca aktif olması yeterlidir. Means that "Detergent dispenser is active only during 5 sec."
6	Wash + Heat ***	5'	Heater (PSW); NTC; diverter (position).
8 9	Reg. Valve + Turbo Fan	1'	Regeneration Valve + Turbo Fan <b>(Turbo Fan only D4)</b>
10	(Resin wash) water inlet valve + drain pump	~1' 20"	Water inlet valve (3 lt)+drain pump;to wash resin and to drain out any possible salt from the machine.
11	Drain	20"	Drain pump + circulation pump (until pressure switch empty level)

\* 3lt in (D13\_2 , D21\_2 ,D12\_7, D22\_7, D32\_7) ;  
2,5lt in (D41\_2, D42\_2, D41\_7-D42\_7).

\*\* 0,5lt in (D13\_2 , D21\_2 ,D12\_7, D22\_7, D32\_7); 1lt in (D41\_2, D42\_2, D41\_7-D42\_7).

\*\*\* In service test, the unsuccessful heating failure routine works with reduced time of recognize (first measure at 2'00", second measure (4'40"))

If during the service test, the door is opened, start/pause led blinks (in D4 also "SP" is shown).

If an intervention occurs in step 6 of service program, 5 min time out starts from the beginning (OK). If service program operates with hot water or invention occurs several times, NTC safety may work because final temperature set does not exist. In these and similar situations, max temperature is 60°C. Heating is performed until 60°C.

### 11.1 Start of service test D13\_2, D21\_2, D41\_5 (60cm);

While the door is open and the machine is OFF:

- By pressing the Program Button, Switch ON the machine while the door is opened.
- Continue to press the Program Button for **8 sec.**
- **when service test is recognized, all leds blink three times**
- **If there is no error occurs before, nothing is visualized then close the door -start service program automatically.**
- If there occurs error before, after showing the last error code illuminated with some leds, close the door. -start service program automatically.

**Note:** To skip the service test, Open door and switch off and on machine or open door and press Program Button for 3secs to perform reset.

### 11.2 Start of service test D41\_2 , D42\_2, D45 (60cm);

While the door is open and the machine is switched OFF.

- By pressing the Program Button, Switch ON the machine while the door is opened.
- Continue to press the Program Button **for 8 sec.**
- All leds will blink once and the "SP" will be shown in the display for 2 secs.
- The last error code is shown on display with all leds blinking.
- or " -- " (D4,D3 60&45) is shown on screen if it does not have any failure before. (D22-7 " -" is shown ). - Close the door .Then service program will start automatically. (After showing the last error code for 6sec like in the freestanding models- "SP" will be shown until the end of test program)
- **If there is no error at the end of service test, machine goes to END position. If there is no error in the next service program, "—" is shown at the beginning and end of the service test.**

- Last recorded error is not shown at the end of a error-free service test.
- If there is no error in D1,D2,D12\_7 models, service test starts without showing last error.
- -The last error code memorized before is never shown again if service test is completed successfully and "--" is shown in models D41,D32\_7. (D22-7 "-").

For ex: Service man performs service program → Service test detects F5 error at the end of the control → Then F5 problem is fixed → again service test is executed → This time, if service test is completed successfully (without having no error) → At the end of the test, it indicates "--" that means there is no found any error during the test.

Note: To skip the service test, Open door and switch off and on machine or open door and press

Program Button for 3secs to perform reset. **Start of service test D12 7 (45cm):**

While the door is open and the Machine is switched OFF;

- By pressing the Program Button, switch on the machine.
- Continue to press the Program button for 8"
- when service test is recognized, all leds blink three times
- If there occurs error before, after showing the last error code illuminated with some leds close the door or without showing anything if there is no error close the door.
- The service program will start automatically.

**-Start of service test D22 7 (45cm):**

While the door is open and the machine is OFF:

- By pressing the Program Button, Switch ON the machine.
- Continue to press the Program Button for 8sec.
- when service test is recognized, all leds blink ,firstly "S" will be on 1sec, than "P" will be on 0.5sec.
- If there occurs error before, the last error code shown with "F" 0.5 sec then "dedicated code number" 1 sec (for ex: "F" then "5").
- or is shown on screen if it does not have any failure before with "--".
- Close the door.
- The service program will start automatically.

Note: To skip the service test, Open door and switch off and on machine or open door and press Program Button for 3secs to perform reset.

**-Start of service test D32 45cm model**

While the door is open and the Machine is switched OFF.

- By pressing the Delay button, switch ON the machine.
- Continue to press the Program Button for 8sec.
- All leds will blink once and the "SP" will be shown in both displays for 2secs.
- "--" is shown on screen if it does not have any failure before.
- or After showing the last error code for 6sec like in the freestanding models- "SP" will be shown until the end of test program)
- The service program will start automatically.

Note: To skip the service test, Open door and switch off and on machine or open door and press Program Button for 3secs to perform reset.

**-Start of service test D42 45cm model**

While the door is open and the Machine is switched OFF.

- By pressing the Delay button, switch ON the machine.
- Continue to press the Program Button for 8sec.
- All leds will blink once and the "SP" will be shown in both displays for 2secs.
- "--" is shown on screen if it does not have any failure before.
- If there is no error at the end of service test, machine goes to end position.

- or after showing the last error code for 6sec like in the freestanding models- "SP" will be shown until the end of test program).

- Close the door then service program will start automatically.

Note: To skip the service test, Open door and switch off and on machine or open door and press Program Button for 3secs to perform reset.

## 12. SERVICE CODES

### D1 UI(60cm D13):

Name	L1(Intensive)	L2(Super 50')	L3(Eco)	L4(Prewash)
Overflow	-	Blink	Blink	Blink
Leakage	-	Blink	Blink	-
Drain time out	-	-	Blink	Blink
Re-Fill time out	Blink	Blink	-	-
Presence Flow meter impulses	-	Blink	-	Blink
Absence of flowmeter impulses with full	Blink	Blink	-	Blink
Absence of flowmeter impulses with empty	Blink	Blink	-	-
NTC cc/ca	Blink	-	-	Blink
Over Heating	Blink	-	Blink	-
Unsuccesful heating	Blink	-	Blink	Blink
Salt Parameter incorrect	Blink	Blink	Blink	-
CK Parameter	Blink	Blink	Blink	Blink
Turbidity Sensor	Blink	-	-	-

### D2 UI(60cm D21):

Name	L1(Intensive)	L2(Super 50')	L3(Eco)	L4(Quick 30')	L5(Prewash)
Overflow	-	Blink	Blink	Blink	Blink
Leakage	-	Blink	Blink	-	Blink
Drain time out	-	-	Blink	Blink	Blink
Re-Fill time out	Blink	Blink	-	-	Blink
Presence Flow meter impulses	-	Blink	-	Blink	Blink
Absence of flowmeter impulses with full	Blink	Blink	-	Blink	Blink
Absence of flowmeter impulses with empty	Blink	Blink	-	-	Blink
NTC cc/ca	Blink	-	-	Blink	Blink
Over Heating	Blink	-	Blink	-	Blink
Unsuccesful heating	Blink	-	Blink	Blink	Blink
Salt Parameter incorrect	Blink	Blink	Blink	-	Blink
CK Parameter	Blink	Blink	Blink	Blink	Blink
Turbidity Sensor	Blink	-	-	-	-

## D4 UI and D52 UI

N°	Name	SERVICE	
		All leds	Display
	Overflow	Blink	FO
	Leakage	Blink	F1
	Drain time out	Blink	F2
	Re-Fill time out	Blink	F5
	Presence Flow meter imp.	Blink	F3
	Absence of flowmeter impulses with full	Blink	F4
	Absence of flowmeter impulses with empty	Blink	F5
	NTC ca/cc	Blink	F6
	Overheating	Blink	F7
	Unsuccessful heating*	Blink	F8
	Diverter opened	Blink	F9
	Turbidity Error	Blink	FA
	Salt Parameter incorrect	Blink	SE
	CK Parameters	Blink	FE
	High voltage/Low voltage	Blink	L0/HI

## D50 UI (45cm D12\_7)

Name	P1(Intensive)	P2(Eco)	P3(Prewash)	End
Overflow	-	Blink	Blink	Blink
Leakage		Blink	Blink	-
Drain time out	-	-	Blink	Blink
Presence Flow meter impulses	-	Blink	-	Blink
Absence Flow meter imp.	Blink	Blink	-	Blink
Empty Level	Blink	Blink	-	-
Re-Fill time out	Blink	Blink	-	-
NTC ca/cc	Blink	-	-	Blink
Overheating	Blink	-	Blink	-
Unsuccessful heating	Blink	-	Blink	Blink
Parameter set salt incorrect	Blink	Blink	Blink	-
CK Parameters	Blink	Blink	Blink	Blink
High voltage/Low voltage	Blink	Blink	Blink	-
Turbidity Sensor	Blink	-	-	-

## D51 UI

D21_45cm model			
N°	Name	SERVICE	
		All leds	*Display
	Overflow	Blink	F0
	Leakage	Blink	F1
	Drain time out	Blink	F2
	Re-Fill time out	Blink	F5
	Presence Flow meter imp.	Blink	F3
	Absence of flowmeter impulses with full	Blink	F4
	Absence of flowmeter impulses with empty	Blink	F5
	NTC ca/cc	Blink	F6
	Overheating	Blink	F7
	Unsuccessful heating*	Blink	F8
	Diverter opened	Blink	F9
	Turbidity Error	Blink	FA
	Salt Parameter incorrect	Blink	SE
	CK Parameters	Blink	FE

\* XY: firstly "X" will be on 1sec, than "Y" will be on 0.5sec and they will be shown sequentially in the display.

Means that:

-During washing cycle, If the service man wants to enter into ;Service test, End test or Hardness set, machine stops the program that is running and, If entered into;

- Hardness set; cut off the washing cycle and directly goes into hardness set.
- Service test; cut off the washing cycle and directly starts service program.
- End test; cut off the washing cycle and directly must perform End Test program .
- **MACHINE ENTERS EP BEFORE USER STOP PRESSING END TEST SECRET COMBINATION.**

## 13. FAILURE ROUTINES ( SOFTWARE CLASS "A"):

### 13.1 Code Failure – General intervention Table

N°	Name	Exit of failure state	Service Call
1	Switch door open	Door closing	NO
2	Delay after door closing	8" delay before restart prg in heating step	NO
3	Overflow Leakage	Overflow signal gets off	NO
		OFF/ON	YES
4	Draining time out	OFF/ON	YES
5	Presence of FLM impulses	FLM signal gets off.	NO
		OFF/ON.	YES
6	Absence of FLM impulses	PSW on Full.	NO*
		PSW on Empty. OFF/ON	NO/YES
7	Level Empty	Level doesn't reach full	NO/YES
8	Re-Fill	3 Re – fill in the same washing step	NO/YES
8	NTC ca/cc	OFF/ON	YES
8	Overheating	OFF/ON	YES
10	Unsuccessful heating	OFF/ON	YES
11	DIV opened	OFF/ON	YES
12	CK Parameters	OFF/ON	YES
13	AUTO DOOR FAILURE	OFF/ON	YES

\*Cycle could be executed with a filling time.

## 13.2 Description of the failures

### 13.2.1 Opened DS

*Recognize:* if door is opened with a started program.  
*Action:* Wait.

*Exit:* Closing door.

*Service:* NO

### 13.2.2 Delay in re-start program

*Recognize:* if door is opened and re-closed in a heating step.  
*Action:* re-start program without any delay if temp. is less than 45°C.  
 Wait 8" before restart program if temp. is equal or more than 45°C.  
*Exit:* Closing door.  
*Service:* NO

### 13.2.3 Overflow/Leakage

*Recognize:* 5" with overflow PSW sensing = on.  
*Action:* Stop program flow. Open all the devices.  
*Exit:* If overflow signal gets off until **failure routine** finishes (cause is overflow):  
 washing program restarts.

It re-fills water according to **Re-Fill routine** and it continues to wash.

If overflow signal persists until **failure routine** (cause is leakage): OFF/ON.

Only for leakage

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	-	Blink	Blink	-	...	...
<i>Vers. D2:</i>	-	Blink	Blink	-	Blink	...
<i>Vers. D4:</i>	All leds blink					F1

*Service:* NO if overflow.  
 YES if leakage.

### 13.2.4 Draining timeout

*Recognize:* 180" with DP ON and CP ON with PSW sensing in full level position.  
*Action:* Stop program flow. Open all the devices.  
*Exit:* OFF/ON.

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	-	-	Blink	Blink	...	...
<i>Vers. D2:</i>	-	-	Blink	Blink	Blink	...
<i>Vers. D4:</i>	All leds blink					F2

*Service:* YES



### 13.2.5 Presence of FLM impulses and INVAL switched OFF

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	-	Blink	-	Blink	...	...
<i>Vers. D2:</i>	-	Blink	-	Blink	Blink	...
<i>Vers. D4:</i>	All leds blink					F3

When the triac valve is OFF and flowmeter gives some impulses (more than 500cl) enter in the failure routine and drain all water (WIV 12secOFF/12sec ON) try to load again correct amount of water inside the machine if failure persists: drain all water (WIV 12secOFF/12secON) Showfailure code (End of routine) if impulses still persist Drain Pump is OFF 100sec Drain pump is ON 60sec Drain Pump is OFF 100sec → → ↓↑↑↑←←←←←←←←←←←←←←←←←←←←←←←←↓Continue this loop untill the flowmeter pulsess stop

*Action:* Go to **Failure routine**.  
*Exit:* OFF/ON.

### 13.2.6 Absence of FLM impulses. It is only shown in service mode.

Procedure : Take 50" water --> start circulation pump --> If PSW is FULL: take additional 60"--> Continue with the washing cycle. If PSW is not FULL after 50" then go on taking water for total time out 150" --> If PSW is FULL in the 150" time out then take 60" more water (start 60" where PSW level become FULL).

*Recognize:* After 50" (time out) of load without impulses by the FLM, CP Starts. If PSW goes to full level: fill for Full+60" and the washing program continues.

*Action:* -  
*Exit:* -  
*Service:* NO.

*Note:* It is only shown in service mode.

Service test	L1	L2	L3	L4	L5	Display(service test)
<i>Vers. D1:</i>	Blink	Blink	-	Blink	...	...
<i>Vers. D2:</i>	Blink	Blink	-	Blink	Blink	...
<i>Vers. D4:</i>	All leds blink					F4

If another failure is already recognized, this failure is not stored in memory.

### 13.2.7 Level Empty without Flow meter impulses (perhaps Tap close or upside down pan): Procedure:

Take 50" water --> start circulation pump --> If PSW is not FULL after 50" then go on taking water for total time out 150" --> if again PSW is OFF/EMPTY level - -> Then enter in the failure routine and then show the related error code as described in failure routine.

*Recognize:* After water load starts, if pressure switch doesn't go to full level in 150".  
*Action:* Go to **Failure routine**.  
*Exit:* OFF/ON.

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	Blink	Blink	-	-	...	...
<i>Vers. D2:</i>	Blink	Blink	-	-	Blink	...
<i>Vers. D4:</i>	All leds blink					F5

*Service:* NO if tap is closed or upside down pan is present.  
 YES in the other cases.

**1) If there is no Flowmeter connection problem but PSW persist not to activate;**

- In Fill step , required water will be taken into basin ( For ex: it takes 3,3lt.)
- In Fill+Wash step, if PSW does not activate , WIV and CP works together for 30 sec, but PSW still persist not to activate ; (not reach full level), WIV and CP continuous to perform and taking water for total time out 70". If PSW does not go to full level during this stage, then perform drain for 30 sec and show related error code as described in failure routine. (F5).

**2) Flowmetre cable is removed+PSW does not go to full level:**

- Fill step is performed for 50 sec, later on for 60 sec Fill+Wash step is executed. If PSW does not go to full level, time-out is prolonged from 60 sec to 100 sec. IF PSW persist to not to activate during this time-out (100sec); it enters into failure routine and gives (F5).

**13.2.8 Rarely flow meter impulses (perhaps low water pressure).**

General Procedure:

With rarely flow meter impulses (time out of absence of flow meter impulses doesn't expire)> if it doesn't reach the **first quantity** of required water (2,5l for 60cm diverter models) within the time out (420" for 60cm diverter models) > Go to the Failure routine and then show failure code.

Procedure for PSW full level is reached:

If it reaches first quantity level within the dedicated time > it continues to take water to reach required level of water (**second quantity**) within timeout 100" > if it doesn't reach the **second quantity** of required water according to the washing cycle within the time out (100") , but PSW reaches the **FULL LEVEL** > Hence stop water intake and continue washing with the following steps and do not show any failure.

*Action:* Go to **Failure routine**.

*Exit:* OFF/ON.

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	Blink	Blink	-	-	...	...
<i>Vers. D2:</i>	Blink	Blink	-	-	Blink	...
<i>Vers. D4:</i>	All leds blink					F5

*Service:* Not necessary if the reason is a momentary.  
YES in the other cases.

**13.2.9 Level Empty and rarely Flow meter**

**impulses:** Procedure for PSW Empty level persists:

If it reaches first quantity level within the dedicated time > it continue to take water to reach required level of water (**second quantity**) within timeout 100" > if it doesn't reach the FULL level in this step and PSW is still at **EMPTY LEVEL** > Continue for more 30" to reach FULL level > If full level is reached, continue with the following steps without failure, but if it cannot reach the FULL level also within 30"> go to the failure routine and then show related failurecode.

*Recognize:* With rarely flow meter impulses (time out of absence of flow meter impulses doesn't expire) it doesn't reach the second quantity of required water related to the washing cycle) within the time out (100")

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	Blink	Blink	-	-	...	...
<i>Vers. D2:</i>	Blink	Blink	-	-	Blink	...
<i>Vers. D4:</i>	All leds blink					F5

*Action:* Go to **Failure routine**.

*Exit:* OFF/ON.

*Service:* Not necessary if the reason is a momentary.  
YES in the other cases.

### 13.2.10 Level Empty and regular/rarely Flow meter impulses.

*Recognize:* With flow meter impulses (time out of absence of flow meter impulses doesn't expire) it reaches the second quantity of required water related to the washing cycle) but it doesn't reach the full level within the time out (30").

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	Blink	Blink	-	-	...	...
<i>Vers. D2:</i>	Blink	Blink	-	-	Blink	...
<i>Vers. D4:</i>	All leds blink					F5

*Action:* Go to **Failure routine**.

*Exit:* OFF/ON.

*Service:* Not necessary if the reason is a momentary.  
YES in the other cases.

### 13.2.11 Re-Fill:

Re-Fill routine:

**When Flowmeter OK Procedure:** Drain >take 3lt water(time out 420" in 60cm diverter model ) > start circulation Pump and take additional 1 lt (total 4lt) (time out 100") >Continue the washing cycle from the point where it remained.

**When Flowmeter NOTOK Procedure:** like Full without flowmeter condition.

Take 50" water --> start circulation pump --> If PSW ON: take additional 60".

If psw is not FULL after 50" then go on taking water for total time out 150" if again PSW is OFF then --> enter failure routine and show related error code. may be tab is closed. If PSW is FULL in the 150" time out then take 60" more water (from the point where PSW level become FULL).

*Recognize:* During a washing step, if pressure switch goes from full level to empty level **Failure routine**

start. Wash restarts with the **Re-Fill routine** (3l+1l). If pressure switch goes from full level to empty

level for 3 times during the same washing step failure is recognised.

*Action:* Go to **Failure routine**.

*Exit:* OFF/ON.

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	Blink	Blink	-	-	...	...
<i>Vers. D2:</i>	Blink	Blink	-	-	Blink	...
<i>Vers. D4:</i>	All leds blink					F5

*Service:* NO if the problem is an upside down pot. Not necessary if the reason is a momentary (ex. an upside down pot). YES in other situations.

### 13.2.12 NTC open or short-circuit

*Recognize:* Recognition of open or short-circuit NTC. Test is executed during all the program flow.  
*Action:* Stop program flow. Go to **Failure routine**.  
*Exit:* OFF/ON.

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	Blink	-	-	Blink	...	...
<i>Vers. D2:</i>	Blink	-	-	Blink	Blink	...
<i>Vers. D4:</i>	All leds blink					F6

*Service:* YES

\*Note: NTC measurement must be taken during heating step. (first measurement after 2' min of starting of the heat step → then second measurement after 5' min → third measurement after 5'....)

\*not: D13\_5 model 19dklık bardak yıkama programında kural 1+5 olarak geçerli olacaktır.

### 13.2.13 Overheating

*Recognize:* Water temperature  $\geq 77^{\circ}\text{C}$ . The test is done during all the cycle.  
*Action:* Stop program flow. Go to **Failure routine**. Open all the devices.  
*Exit:* OFF/ON.

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	Blink	-	Blink	-	...	...
<i>Vers. D2:</i>	Blink	-	Blink	-	Blink	...
<i>Vers. D4:</i>	All leds blink					F7

*Service:* YES

### 13.2.14 Unsuccessful heating

*Recognize:* During the heating phases, after the first 420", if water temperature increases less than 2°C (difference from 58°C and 60°C) or if it is less than 0°. The first valid value to check is read after 120" from the beginning of the heating step.  
*Action:* Skip the heating step. The test is repeated in all the heating steps. If in a following step, the heating is OK the failure is cleared. The failure is shown at the end of the program.  
*Exit:* OFF/ON.

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	Blink	-	Blink	Blink	...	...
<i>Vers. D2:</i>	Blink	-	Blink	Blink	Blink	...
<i>Vers. D4:</i>	All leds blink					F8

*Service:* YES

- Open-wait and close door or pause the program in heating step: if temperature is not increased 2°C in 5 minutes, heater turns off.

### 13.2.15 DIV open

*circuit : Recognize:* 30" with motor of DIV ON and DIV sensing doesn't change.  
*Action:* Stop program flow. Go to **Failure routine**  
*Exit:* OFF/ON.

	L1	L2	L3	L4	L5	Display
<i>D41_5</i>	-	Blink	Blink	Blink	Blink	F9
<i>Vers. D4:</i>	All leds blink					F9

*Service:* YES

- Having diverter models, if machine is powered off/on, diverter starts from lower position(lower spray arm works).
- If user open/close the door, diverter direction does not change.
- While diverter is energized, If user make Power Off/On, diverter must start with lower condition.

### 13.2.16 Parameters Check Sum

*Recognize:* When parameter Check sum is uncorrected  
*Action:* Stop program flow. Go to **Failure routine.**  
*Exit:* OFF/ON.

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	Blink	Blink	Blink	Blink	...	...
<i>Vers. D2:</i>	Blink	Blink	Blink	Blink	Blink	...
<i>Vers. D4:</i>	All leds blink					FE

*Service:* The problem would disappear after switch OFF/ON of the dishwasher. If it doesn't disappear YES.

### 13.2.17 Turbidity

	L1	L2	L3	L4	L5	Display
<i>Vers. D1-D2</i>	Blink	-	-	-	-	FA

*Service:* NO

### 13.2.18 Salt Parameter incorrect **It is only shown in service mode.**

'SE' error is shown only at the beginning of the first service test.

*Recognize:* When salt setting is not set by the user.  
*Action:* when service user first perform service program, please show "SE" error.  
*Exit:* OFF/ON.

*Service:* The problem would disappear after setting water hardness level and re-start service program. After service test is completed with success, if service user again performs service test, SE error is never shown again.

	L1	L2	L3	L4	L5	Display
<i>Vers. D1:</i>	Blink	Blink	Blink	...	...	...
<i>Vers. D2:</i>	Blink	Blink	Blink	...	Blink	...
<i>Vers. D4:</i>	All leds blink					SE

### 13.2.19 Before running the program) Circulation pump cable is disconnected and PSW cable is disconnected

Turn off the machine. Disconnect the circulation pump cable. Turn on the machine and start a program. Because pressure switch is not active in washing step, water inlet valve and circulation pump time out increases from 60 sec. to 100 sec. During 30" drain is performed as pressure switch is not active and related failure code is shown.

**-During washing, If PSW goes empty level(re-fill situation)**

Turn off the machine. Disconnect the pressure switch connector and connect external micro switch to provide manual control. Start a program. Machine directly discharges the water and starts that step by taking water. Related failure code is shown after this procedure is repeated 3 times.

**13.2.20 "SE" failure**

Parameter set salt incorrect	SE	In the normal work this failure is not visualized.
------------------------------	----	--

, if service man does not set water hardness;first perform of service test, it must show "SE" error due to not to set the hardness. -But at first, service man set the hardness and then execute the service test, at the end of it, it must not show error code "SE".

- After setting water hardness set, "SE" error is never shown to user anymore.

**13.2.21 VOLTAGE SENSING:**

- When main supply voltage is above 285VAC, voltage sensing circuit perceives high voltage and program is stopped by software. After main supply voltage is below 275VAC, program is started again.
- If main supply voltage exceeds 285 VAC during 10 sec, it saves to HIGH VOLTAGE ERROR but sw does not enter into failure routine and does not show failure to end user.
- If main supply voltage is above 285 VAC during 3 hours, it saves to HIGH VOLTAGE ERROR and sw enters into failure routine by showing error code.

When main supply voltage is below 145VAC, voltage sensing circuit perceives low voltage and program is stopped by software. When main supply voltage is above 155VAC, program is started again.

- If main supply voltage goes down to under 145 VAC during 10 sec, it saves to LOW VOLTAGE ERROR but sw does not enter into failure routine and does not show failure to end user.
- If main supply voltage falls to under 145 VAC during 3 hours, it saves to LOW VOLTAGE ERROR and sw enters into failure routine by showing error code.

If voltage is low or high during 10 seconds:

- Display does not shows LO, Take memory LO for show at the beginning of service test.
- Display does not shows HI, Take memory HI for show at the beginning of service test.

**13.2.22 Auto Door Failure**

*Recognize:* When auto door mechanism is activated, the door is not opened

*Action:* Go to **Failure routine.**  
*Exit:* OFF/ON.

	Auto Door Failure
D45	FC

## 14. Failure codes

### 14.1 D13\_2

**Note:** D14\_5 has the same failure codes as D13\_2.

Name	L1(Intensive)	L2(Super 50')	L3(Eco)	L4(Prewash)
Overflow	-	Blink	Blink	Blink
Leakage	-	Blink	Blink	-
Drain time out	-	-	Blink	Blink
Re-Fill time out	Blink	Blink	-	-
Presence Flow meter impulses	-	Blink	-	Blink
Absence of flowmeter impulses with full	Blink	Blink	-	Blink
Absence of flowmeter impulses with empty	Blink	Blink	-	-
NTC cc/ca	Blink	-	-	Blink
Over Heating	Blink	-	Blink	-
Unsuccesful heating	Blink	-	Blink	Blink
Salt Parameter incorrect	Blink	Blink	Blink	-
CK Parameter	Blink	Blink	Blink	Blink
Turbidity Sensor	Blink	-	-	-

### 14.2 D21\_2 :

Name	L1(Intensive)	L2(Super 50')	L3(Eco)	L4(Quick 30')	L5(Prewash)
Overflow	-	Blink	Blink	Blink	Blink
Leakage	-	Blink	Blink	-	Blink
Drain time out	-	-	Blink	Blink	Blink
Re-Fill time out	Blink	Blink	-	-	Blink
Presence Flow meter impulses	-	Blink	-	Blink	Blink
Absence of flowmeter impulses with full	Blink	Blink	-	Blink	Blink
Absence of flowmeter impulses with empty	Blink	Blink	-	-	Blink
NTC cc/ca	Blink	-	-	Blink	Blink
Over Heating	Blink	-	Blink	-	Blink
Unsuccesful heating	Blink	-	Blink	Blink	Blink
Salt Parameter incorrect	Blink	Blink	Blink	-	Blink
CK Parameter	Blink	Blink	Blink	Blink	Blink
Turbidity Sensor	Blink	-	-	-	-

### 14.3 D41\_2,D42\_2:

N°	Name	NORMAL		SERVICE	
		All leds	Display	All leds	Display
	Overflow	-	-	Blink	F0
	Leakage	Blink	F1	Blink	F1
	Drain time out	Blink	F2	Blink	F2
	Re-Fill time out	Blink	F5	Blink	F5
	Presence Flow meter imp.	Blink	F3	Blink	F3
	Absence of flowmeter impulses with full	-	-	Blink	F4
	Absence of flowmeter impulses with empty	Blink	F5	Blink	F5
	NTC ca/cc	Blink	F6	Blink	F6
	Overheating	Blink	F7	Blink	F7
	Unsuccessful heating*	Blink	F8	Blink	F8
	Diverter opened	Blink	F9	Blink	F9
	Turbidity Error	-	-	Blink	FA
	Salt Parameter incorrect	-	-	Blink	SE
	CK Parameters	Blink	FE	Blink	FE
	High voltage/Low voltage	Blink	L0/HI	Blink	L0/HI

### 14.4 D45

N°	Name	NORMAL		SERVICE	
		All leds	Display	All leds	Display
	Overflow	-	-	Blink	F0
	Leakage	Blink	F1	Blink	F1
	Drain time out	Blink	F2	Blink	F2
	Re-Fill time out	Blink	F5	Blink	F5
	Presence Flow meter imp.	Blink	F3	Blink	F3
	Absence of flowmeter impulses with full	-	-	Blink	F4
	Absence of flowmeter impulses with empty	Blink	F5	Blink	F5
	NTC ca/cc	Blink	F6	Blink	F6
	Overheating	Blink	F7	Blink	F7
	Unsuccessful heating*	Blink	F8	Blink	F8
	Diverter opened	Blink	F9	Blink	F9
	Turbidity Error	-	-	Blink	FA
	Salt Parameter incorrect	-	-	Blink	SE
	CK Parameters	Blink	FE	Blink	FE
	High voltage/Low voltage	Blink	L0/HI	Blink	L0/HI
	AUTO DOOR FAILURE	-	-	Blink	FC



## 14.5 D41\_5

	Name	L1	L2	L3	L4	L5
F1	Overflow	-	-	-	-	-
	Leakage	-	Blink	Blink	-	Blink
F2	Drain time out	-	-	Blink	Blink	Blink
F5	Re-Fill time out	Blink	Blink	-	-	Blink
F3	Presence Flow meter impulses	-	Blink	-	Blink	Blink
F4	Absence of flowmeter impulses with full	-	-	-	-	-
F5	Absence of flowmeter impulses with empty	Blink	Blink	-	-	Blink
F6	NTC cc/ca	Blink	-	-	Blink	Blink
F7	Over Heating	Blink	-	Blink	-	Blink
F8	Unsuccessful heating	Blink	-	Blink	Blink	Blink
F9	Diverter opened	-	Blink	Blink	Blink	Blink
SE	Salt Parameter incorrect	Blink	Blink	Blink	-	Blink
	CK Parameter	Blink	Blink	Blink	Blink	Blink
	High voltage/Low voltage	Blink	Blink	Blink	-	-

## 14.6 D22\_7 :

N°	Name	NORMAL		SERVICE	
		All leds	Display	All leds	Display
	Overflow	-	-	Blink	FO
	Leakage	Blink	F1	Blink	F1
	Drain time out	Blink	F2	Blink	F2
	Re-Fill time out	Blink	F5	Blink	F5
	Presence Flow meter imp.	Blink	F3	Blink	F3
	Absence of flowmeter impulses with full	-	-	Blink	F4
	Absence of flowmeter impulses with empty	Blink	F5	Blink	F5
	NTC ca/cc	Blink	F6	Blink	F6
	Overheating	Blink	F7	Blink	F7
	Unsuccessful heating*	Blink	F8	Blink	F8
	Diverter opened	Blink	F9	Blink	F9
	Turbidity Error	-	-	Blink	FA
	Salt Parameter incorrect	-	-	Blink	SE
	CK Parameters	Blink	FE	Blink	FE
	High voltage/Low voltage	Blink	L0/HI	Blink	L0/HI

### 14.7 D12\_7 :

Name	P1(Intensive)	P2(Eco)	P3(Prewash)	End
Overflow	-	Blink	Blink	Blink
Leakage		Blink	Blink	-
Drain time out	-	-	Blink	Blink
Presence Flow meter impulses	-	Blink	-	Blink
Absence Flow meter imp.	Blink	Blink	-	Blink
Empty Level	Blink	Blink	-	-
Re-Fill time out	Blink	Blink	-	-
NTC ca/cc	Blink	-	-	Blink
Overheating	Blink	-	Blink	-
Unsuccessful heating	Blink	-	Blink	Blink
Parameter set salt incorrect	Blink	Blink	Blink	-
CK Parameters	Blink	Blink	Blink	Blink
High voltage/Low voltage	Blink	Blink	Blink	-
Turbidity Sensor	Blink	-	-	-

### 14.8 D32\_7 :

N°	Name	NORMAL		SERVICE	
		All leds	Display	All leds	Display
	Overflow	-	-	Blink	FO
	Leakage	Blink	F1	Blink	F1
	Drain time out	Blink	F2	Blink	F2
	Re-Fill time out	Blink	F5	Blink	F5
	Presence Flow meter imp.	Blink	F3	Blink	F3
	Absence of flowmeter impulses with full	-	-	Blink	F4
	Absence of flowmeter impulses with empty	Blink	F5	Blink	F5
	NTC ca/cc	Blink	F6	Blink	F6
	Overheating	Blink	F7	Blink	F7
	Unsuccessful heating*	Blink	F8	Blink	F8
	Turbidity Error	-	-	Blink	FA
	Salt Parameter incorrect	-	-	Blink	SE
	CK Parameters	Blink	FE	Blink	FE
	High voltage/Low voltage	Blink	LO/HI	Blink	LO/HI

## 14.9 D41\_7-D42\_7 :

N°	Name	NORMAL		SERVICE	
		All leds	Display	All leds	Display
	Overflow	-	-	Blink	FO
	Leakage	Blink	F1	Blink	F1
	Drain time out	Blink	F2	Blink	F2
	Re-Fill time out	Blink	F5	Blink	F5
	Presence Flow meter imp.	Blink	F3	Blink	F3
	Absence of flowmeter impulses with full	-	-	Blink	F4
	Absence of flowmeter impulses with empty	Blink	F5	Blink	F5
	NTC ca/cc	Blink	F6	Blink	F6
	Overheating	Blink	F7	Blink	F7
	Unsuccessful heating*	Blink	F8	Blink	F8
	Diverter opened	Blink	F9	Blink	F9
	Turbidity Error	-	-	Blink	FA
	Salt Parameter incorrect	-	-	Blink	SE
	CK Parameters	Blink	FE	Blink	FE
	High voltage/Low voltage	Blink	L0/HI	Blink	L0/HI

### LOW VOLTAGE FAILURE:

- With the L1 + L2 LEDs, L3 will turn on at 1 second intervals.
- "LO" will be shown in models with display.

### HIGH VOLTAGE FAILURE

- L1 and L2 + L3 LEDs will turn on at 1 second intervals.
- "HI" will be shown in models with display.

## 15. VESTEL END TEST PROGRAM

End test is divided in two parts: End test 1 (functionally test) and End test 2 (heating and leakage test).

### 15.1 End test 1

- While the door is closed.
- By pressing the Program Button, switch ON the machine.
- Continue to press the Program Button for 3 sec.
- All leds will blink once. Hear the beeping.
- The End test will start automatically.

**Note:** To skip the End test, open door and press program button for 3" to perform the reset option and close door. After resetting, the machine is ready for use.



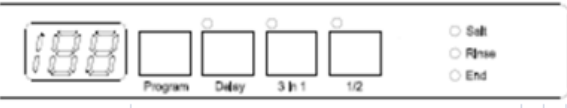

If it occurs diverter or turbidity failure in END test 1 program, please implement below modifications as it is in current D models.

- Diverter failure: Stop circulation pump just after detergent dispenser activation at step 41 until the end of program if electronic card can not detect diverter position during end test 1.
- Turbidity failure: Start circulation pump just after turbidity sensor check (at step 92) for 6 sec, if electronic card realize Turbidity sensor failure during turbidity test.
- If we open/close the door during end test, End test continuous from the point on which we open/close the door. End test combinations keeps performing.
- Condition of flowmeter cable is broken in END test1 : Until End Test 1 is completed, WIV must be ON.
- End Test 1 Power ON/OFF condition: End Test 1 must start from the beginning.
- If Power OFF/ON or open/close the door occurrence in End test 2: it continuous from the point where we power ON/Off. But other program or option buttons are pressed in course of End test 2 (Ex: Half load), machine does not perceive this command. After End test 2 is completed, machine must be ready condition and when we touch program button, Eco program must come out on screen due to eco design regulations.
- If End test2 program is cancelled, program must go to END
- If even there is not any water in the tank , End test1 completes the cycle in required time without any error.
- If even there is not any water in the tank at the beginning of End test2; it starts automatically. If PSW is not activated first one min of END test2 ; After 1 min, machine goes to END.
- Open/close the door during End test1: End test 1 continuous from the point where it stays. End test 1 led combination progression proceeds even if the door is open.
- After end test 2, Eco program must shown as default even machine is not powered off/on.
- When first flashed to e-card and energized the machine → End test 1 starts automatically.

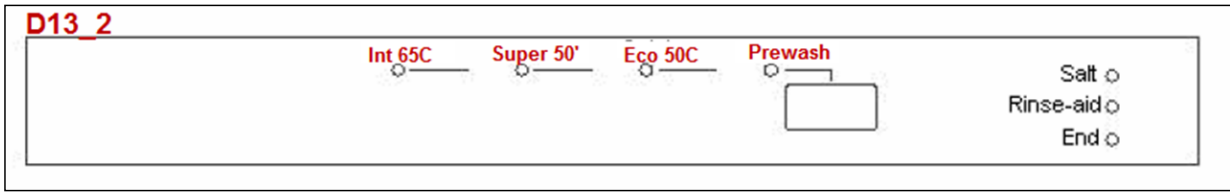
## END TEST CODIFICATIONS 60&45 cm:

### 45 cm:

All leds ON-then;

<p><b>D12_45cm</b></p>  <p>1st combination Intensive 65C 2nd combination Prewash</p>	<p><b>D22_45cm</b></p>  <p>1st combination 3h - Salt - Rinse 2nd combination End - Salt - Rinse 1st digit 18</p>
<p><b>D32_45cm</b></p>  <p>All led ON 1st combination Delay 2nd combination 3 in 1 &amp; 1/2 1st digit 188 2nd digit 188 3rd digit 188</p>	<p><b>D42_45cm</b></p>  <p>1st combination 1/2 upper 2nd combination 1/2 lower 1st digit 188 2nd digit 188 3rd digit 188 Diverter led resu Delay led Turbidity led resu Delay led</p>

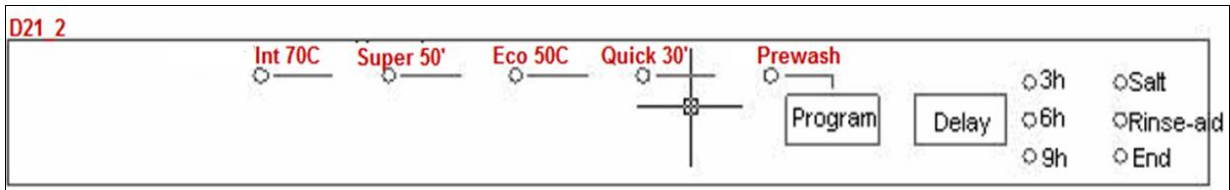
**60 cm:**



All leds ON

1 st combination: Int 65 C led

2 nd combination: Prewash led.



ALL leds ON

1 st combination: Int 70 C led.

2 nd combination: Prewash led+Quick 30' led.

**D41-D42:**



D41:

All leds ON

1 st combination Tablet led

2 nd combination Upper load basket led

D42:

All leds ON

1 st combination Tablet

2 nd combination END led.

**15.1 End test 2**

When the electronic card is switched On after end of ent test 1, it starts with end test2.

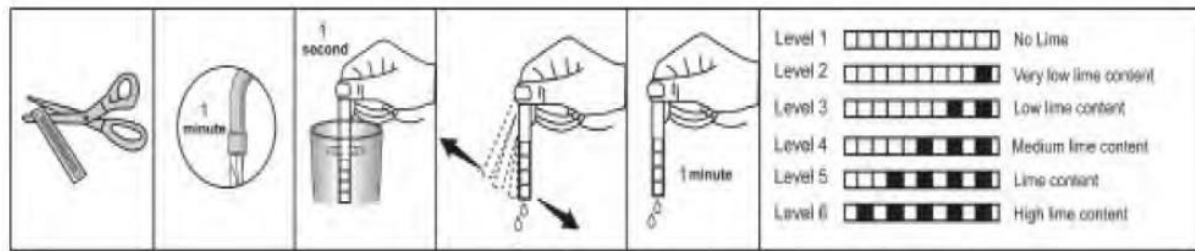
- 4" of pause
- Heating to reach 62°C with 13' of time out
- Only circulation pump is on for 10" sec
- Drain + Regeneration valve is on 20"
- Memorize and End test 2 is finished.

During this phase, failure routine of unsuccessful heating works. If the water temperature doesn't increase, the DP will be on. When the electronic card is switched On after end test 2, it will be in Washing mode.

## 16. MEASUREMENT THE WATER HARDNESS

### TEST STRIP;

Open the testing strip.	Run water through your tap for 1 min.	Keep the testing strip in water for 1 sec.	Shake the testing strip after taking it out of water.	Wait for 1 min.	Make your machine's water hardness setting according to the result obtained through the testing strip.
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The washing effectiveness of your machine depends on the softness of the tap water. For this reason, your machine is equipped with a system that reduces the hardness in mains water supply. The washing effectiveness will increase when the system is correctly set. To make the system setting, use the testing strip, if it is available, and find the hardness of the mains water supply.

## 17. FAILURE CODES (Possible Problems)

### F1 (ALARM IS ACTIVE FOR OVERFLOW)

#### FLOATER

- Floater switch can be out of order or have a problem with the cable connection.

#### TUB

- There can be a water leakage from the tub

#### ELECTRONIC CARD

- Electronic card can be out of order.

### F2 (THE WASTE WATER IN THE MACHINE CANNOT BE DISCHARGED)

#### DRAIN HOSE

- Water outlet hose is clogged
- Check of the water outlet hose position.

### DRAIN PUMP

- Check the drain pump resistance and power values
- There can be a problem with cable connection of the drain

### PRESSURE SWITCH

- Pressure switch of the heater casing group can have a mechanical or cable connection problem.

## **F3 (ERROR OF CONTINUOUS WATER INPUT)**

### WATER INLET VALVE

- Water inlet valve can be out of order or can not be closed.

### ELECTRONIC CARD

- Electronic card can be out of order.

## **F4 (FLOWMETER FAULTY)**

### FLOWMETER

- Flowmeter can be out of order.
- Cable connection of flowmeter can be faulty.

### ELECTRONIC CARD

- Electronic card can be out of order.

## **F5 (INADEQUATE WATER SUPPLY)**

### WATER TAP

- Make sure the water input tap is totally open and that there is no water cut.

### WATER INLET HOSE

- Close the water input tap, separate the water input hose from the tap and clean the filter at the connection end of the hose.

- Water inlet valve filter can be clogged.

- Water inlet valve can be out of order. There can be a problem with the cable connection of water inlet valve.

#### FLOATER

- Floater switch can be out of order or have a problem with the cable connection.

#### PRESSURE SWITCH

- Pressure switch of the heater can have a mechanical or cable connection problem.

#### CIRCULATION PUMP

- Circulation pump can be out of order or have a problem with the cable connection. External part can be blocked to the circulation pump.

### **F6 (NTC FAULTY)**

#### NTC

- Ntc can be out of order.
- Ntc cable connection can be faulty. Ntc can be short or open circuit.

#### ELECTRONIC CARD

- Check the power and resistance value of heater.
- Check the cable connection of the heater.

### **F7 (EXTREME HEATING UP FAULTY)**

#### NTC

- If the water temperature inside machine higher than 77°C, ntc can be out of order.

#### ELECTRONIC CARD

- Electronic card can be out of order.

### **F8 (INADEQUATE HEAT)**

#### HEATER

- Check the power and resistance values.
- Check the cable connection of the heater.

#### ELECTRONIC CARD



- Check the electronic card

## **F9 (DIVERTER POSITION PROBLEM)**

### DIVERTER

- Check the values of the diverter.
- Check the cable connection of the diverter.

### ELECTRONIC CARD

- Check the electronic card

## **FA (TURBIDITY SENSOR FAULTY)**

### TURBIDITY SENSOR

- There can be some soil around the turbidity sensor.
- Check the cable connection of the turbidity sensor.

### ELECTRONIC CARD

- Check the electronic card.

## **10.1 POOR DRYING**

- a) The programme which hasn't got a drying phase; could be selected the customers should be informed about the programmes.
- b) There might be lack of rinse aid compartment.
- c) There can be mechanical or electrical problem with the detergent dispenser.
- d) There can be a problem on the PCB card.

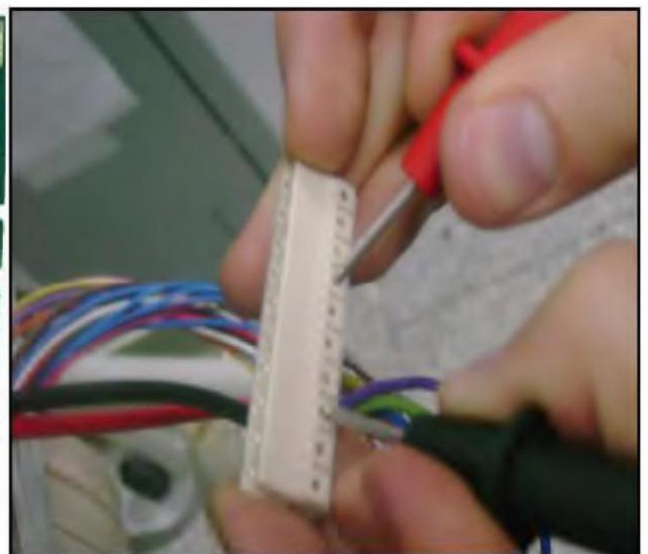
## 18. REPAIR TECHNIQUES COMPONENTS AND RESISTANCE VALUES

COMPONENTS	C		T		NOTES
ON / OFF SWITCH	0 Ω on component		0 Ω on component		ON/OFF button is pressed
DOOR SWITCH	CN2.9 - CN2.2 0 Ω		KN2.8 - KN2.10 0 Ω		Door is close
PRESSURE SWITCH	CN2.10 - CN2.2	0 Ω ∞Ω	KN2.9 - KN2.10	0 Ω ∞Ω	Full fill water no water
DRAIN PUMP / HANYU	CN2.2 - CN2.4 220 Ω % ±10		KN2.4 - KN2.10 220 Ω % ±10		
DRAIN PUMP / LEILI	CN2.2 - CN2.4 141 Ω % ±10		KN2.4 - KN2.10 141 Ω % ±10		
WATER INLET VALVE	CN2.6 - CN2.9 4200 Ω ± %10 (20°C)		KN2.6 - KN2.8 4200 Ω ± %10 (20°C)		
REGENERATION VALVE	CN2.2 - CN2.7 3560 Ω ± %10(25°C)		KN2.2 - KN2.10 3560 Ω ± %10(25°C)		
SALT SENSOR	CN5.1 - CN5.2	0 Ω NO SALT ∞Ω THERE IS	KN50.10 - KN 50.11	0 Ω NO SALT ∞Ω THERE IS SALT	Measure just on the electronic component
HEATER	29.1 ± 1,5 Ω		29.1 ± 1,5 Ω		Measure just on the component
DETERGENT DISPENSER	2300 Ω ± %10 (25 C°)		2300 Ω ± %10 (25 C°)		Measure just on the component
CIRCULATION PUMP	CN2.3 - CN2.9		KN2.3 - KN 2.8		Primary winding Secondary winding (from the component)
SET NTC SENSOR	CN 3.2 CN 3.1		KN 50.1 KN 50.2		
FAN MOTOR	CN 6.2 - CN 2.9		KN 6.2 - KN 2.8		
DIVERTER	CN 6.1 - CN 2.9 10500 ± %7 Ω		KN 6.1 - KN 2.8 10500 ± %7 Ω		
RINSE AID SENSOR	CN 5.3 - CN 5.2	0 Ω NO RINSE AID ∞Ω THERE IS RINSE	KN 50.8 - KN 50.9	0 Ω NO RINSE AID ∞Ω THERE IS RINSE AID	Rinse aid off Rinse aid on
FLOATER (MICROSWITCH)	CN2.1 - CN 2.5 CN2.1 - CN 2.4	0 Ω ∞Ω	KN2.5 - KN 2.10 KN2.4 - KN 2.5	0 Ω ∞Ω	Microswitch is inactive (no water ) microswitch is active (there is water)

### MEASURING THE COMPONENTS FROM THE ELECTRONICAL CARD

You might measure the components either connectors of electronic card or directly on the component.

Measuring from the connectors of electronic card gives definite result to define the repair. If you know the specialities and values of tester, you can easily determine the repair.



**Example;**

Probes of the tester should be applied on to the related connectors of the electronic card; control the values according to the resistance value table.