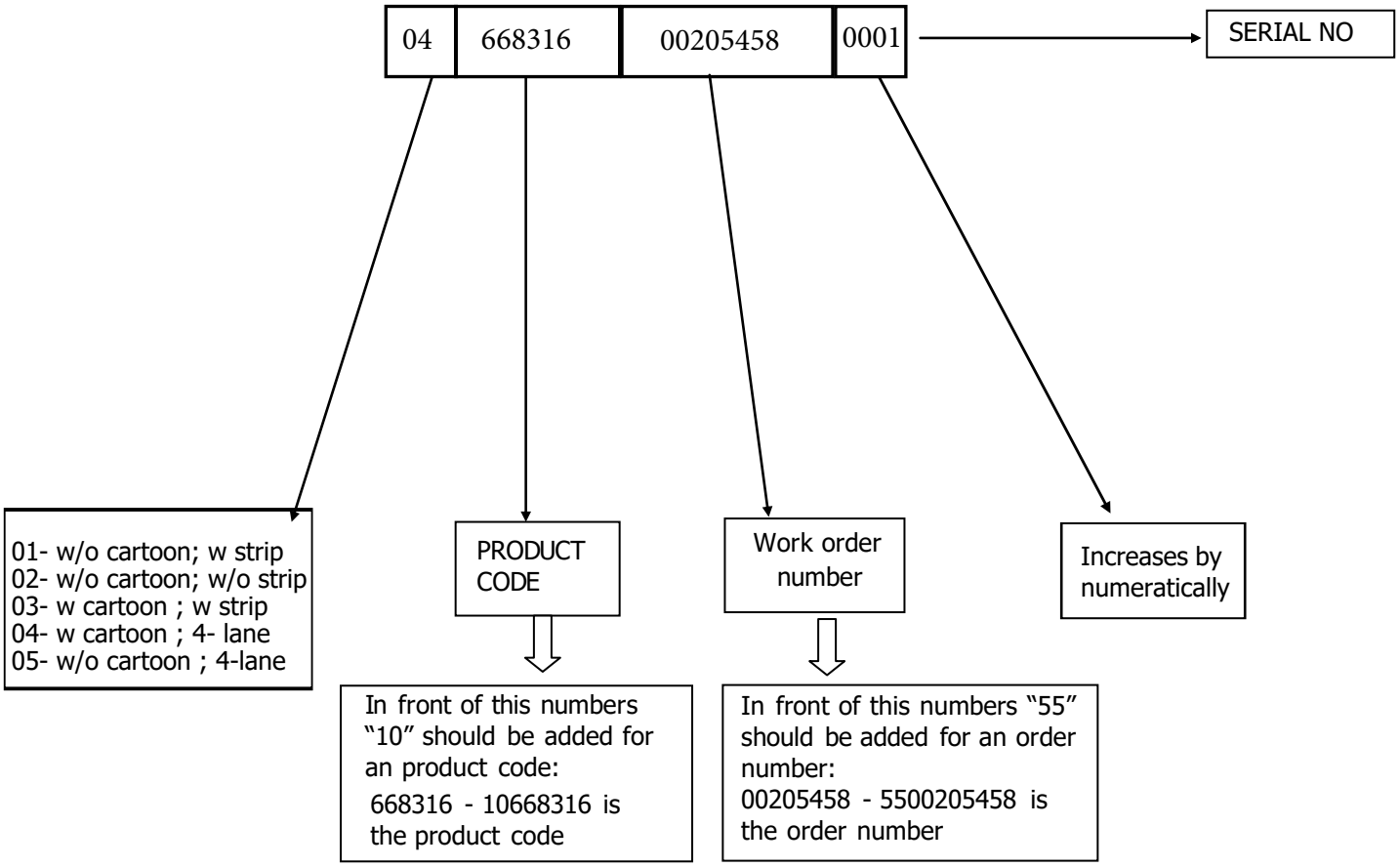
DISHWASHER
SERVICE MANUAL

FREESTANDING
(SERIES T21)

SOGEDIS	**INFORMATION SHEET**	SOGEDIS

BARCODE STICKER CODE EXPLANATION / DISHWASHER:



TOOLS FOR DISASSEMBLE

Phillips screwdriver

*All kinds of star-head screws,
*in the phillips screws of the internal components,

Plier

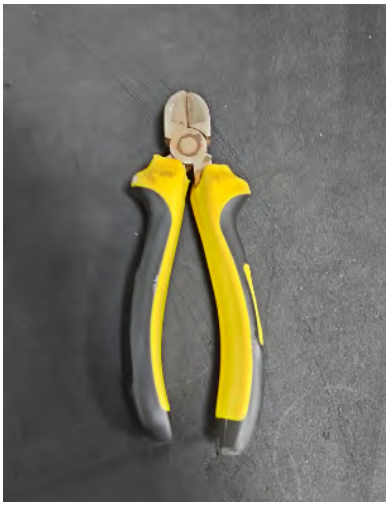
*It is used to bend all kinds of sheet metal ends.

Multimeter

*Resistance values of all kinds of internal components,
*Electronic card resistors,
*It is used to measure the resistance of display cards.

Flat Screwdriver

It is used to remove all kinds of aesthetic parts (side panels, front panels and external aesthetic parts of the machine).



Side Cutter

It is used to cut cables of internal components or any hard part.

Chargeable Drill

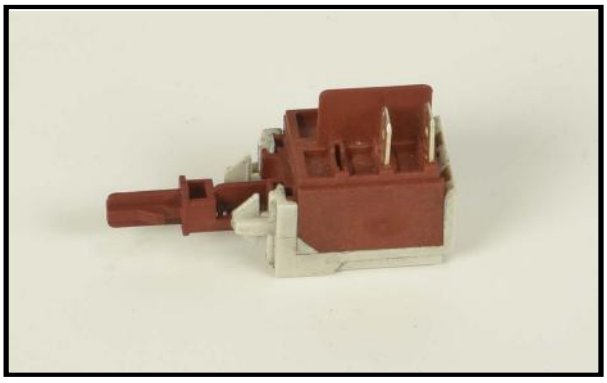
It is the most important tool used to remove and install all kinds of screws in the machine.

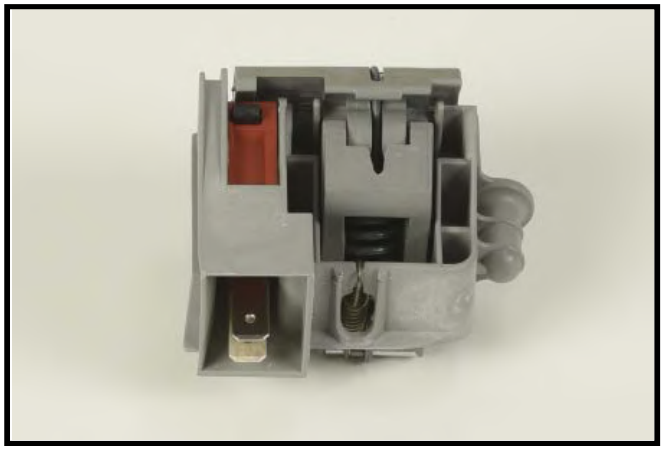
ELECTRICAL COMPONENTS

BUTTON (ON / OFF SWITCH)

Button is assambled in the control panel unit. ON /OFF (two pole)

Voltage 250 V
Currency 16 (4) A





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.

Currency 16 (4) A

CIRCULATION PUMP

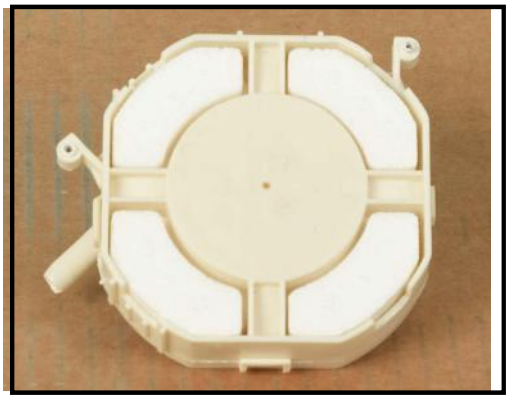
Voltage	220/240
Frequency	50HZ
Total Power	90W
Coil Isolation Class	F
Thermal Protector	150°C
Pump Outlet Pressure	300mbar
Pump Flowrate	60 lt/min

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

Measurement of the primary windings of the washing pump(118.2-135.9 Ω)

Measurement of the secondary windings of the washing pump (white cable – blue cable) (117.9-135.6 Ω)

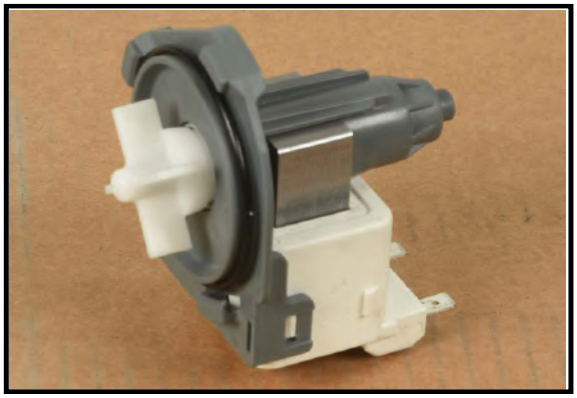
FLOATER



CAPACITOR

2,5 µ F - 450 V class S2

Capacitor is permanently connected to the circulation pump coils.



DRAIN PUMP

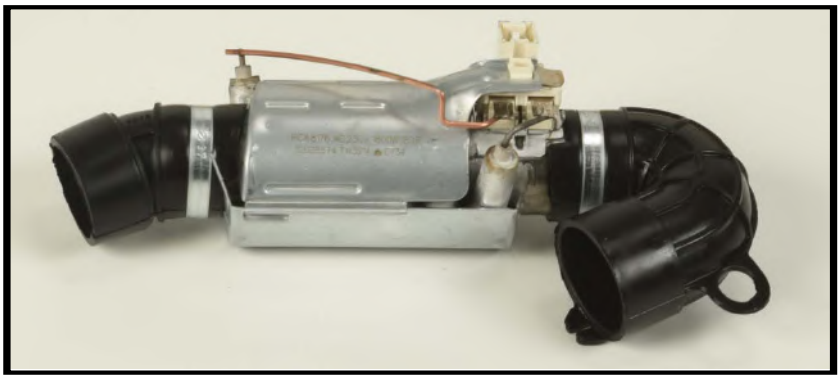
Voltage	220/240 volt
Frequency	50Hz
Flowrate	30W
Coil Resistance / Hanyu	220Ω % ±7
Coil Resistance / Leılı	141Ω % ±7
Coil Isolation Class	F
Thermal Protector	120°C

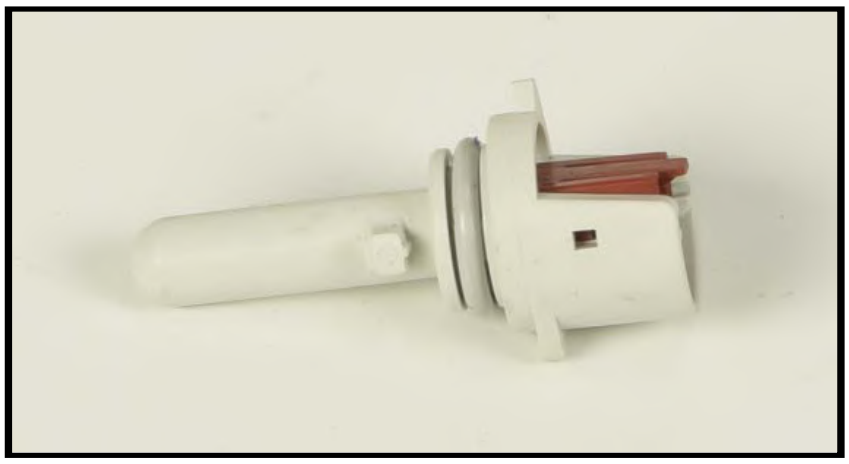
HEATER

Voltage220/240 volt

Total power

1800W 27.6-30.6 ohm

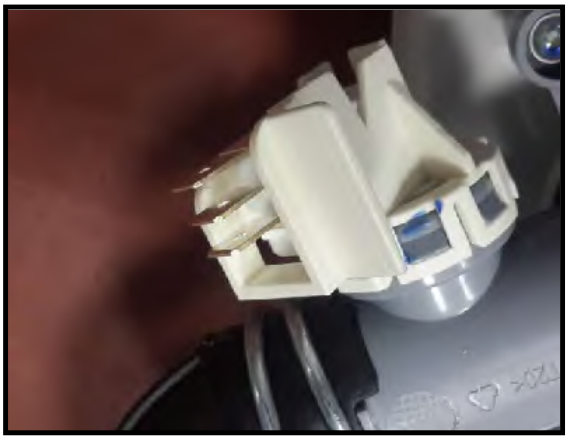




NTC

+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

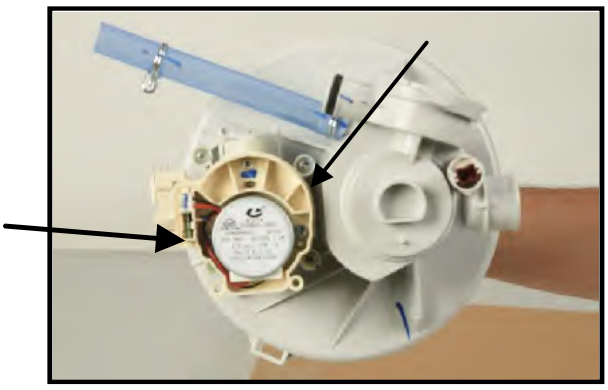
PRESSURE SWITCH



Voltage 220/240 v

Frequency 50/60 Hz 16 A

- 3 Pins



DIVERTER

There is diverter at freestanding models It is assembled to the Heater Casing Group.

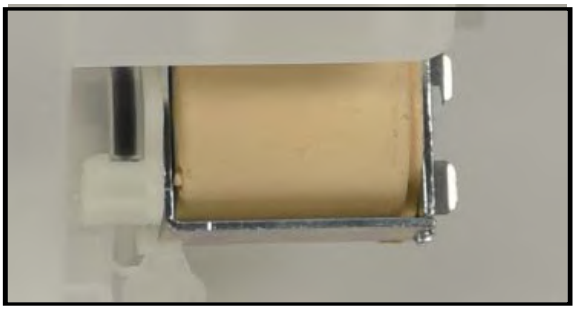
Voltage	220/240 V
Frequency	50 Hz
Power	8W
Resistance	10500 ± %5 Ω

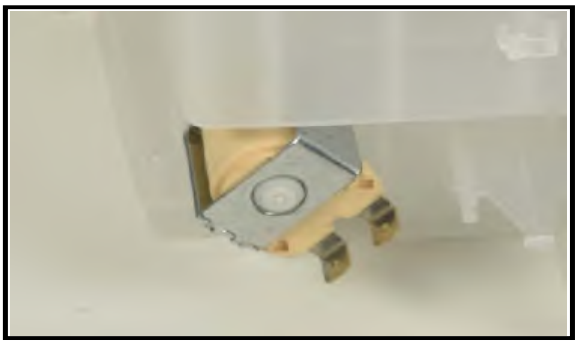
WATER INLET VALVE

Single inlet and single outlet standard single coil selenoid valve.

Voltage	220 - 240
Total Power	6W
Flowrate	2,5 ±% 15 lt/dk
Coil Isolation Class	H
Resistance	4200 ±%10

It is assembled to the basement and connect to the airbreak by hose.





REGENERATION VALVE

Voltage	220/240 V
Frequency	50/60 Hz
Total power	6 W
Resistance	3560 ± % 10 Ω°C

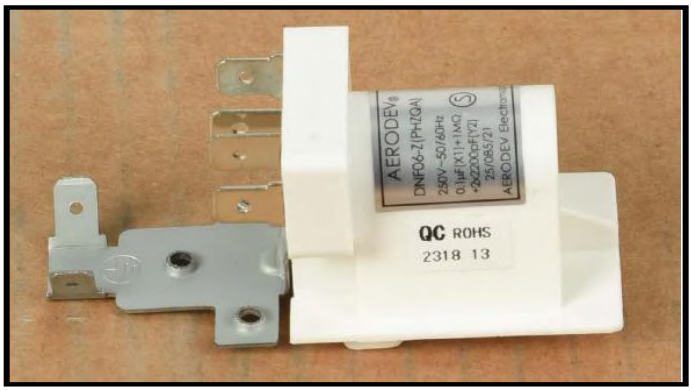
Regeneration valve is assembled on the water softener.

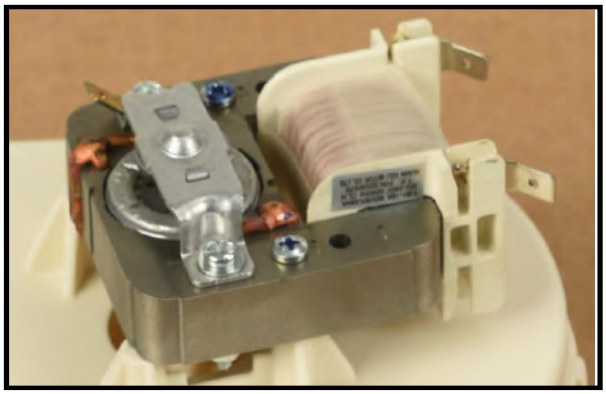
PARASITE FILTER

Voltage	220/240
Frequency	50/60 Hz

0,1 uF (X1) + 2x2,2 uF (Y2) + 1MΩ

It is used to prevent parasites from the main supply It has been assemblied to basement.





TURBO FAN MOTOR

There is a thermal protector shaded pole motor, two pole temperature is between -40-150 °C

Turbo fan resistance value: 265 ± %10 Ω (The resistance of the torbo fan is measured with the resistor switch).

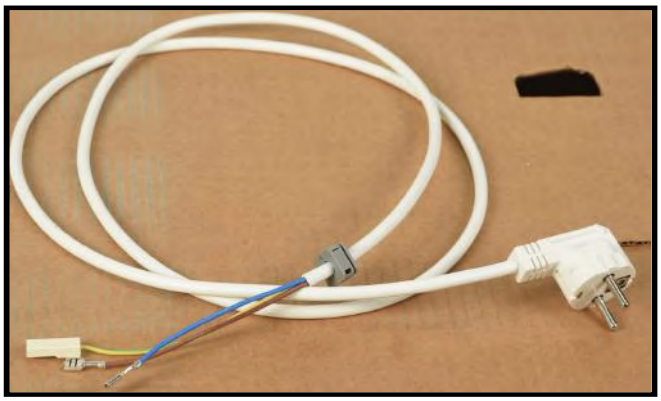
SALT SENSOR

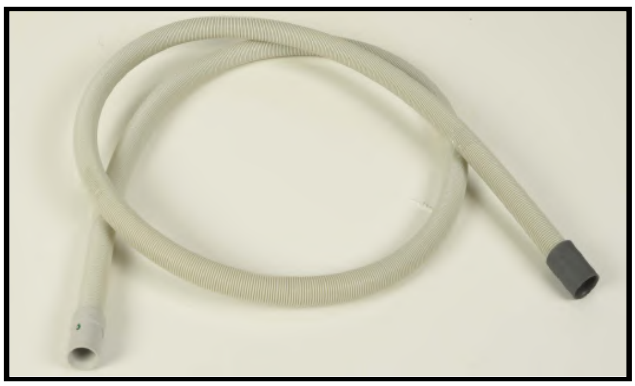
Voltage	250 V
Currency	50 mA

It is assembled to the water softener. It warns if the salt is less than requested quantity.

POWER CORD

Type	Euro 3'lü 1mm² , copper conducting
Isolation	TS 9760 HO 5VV - F
Plug	TS - IEC 60884 - 1 PVC injected
Length	1650 mm





DRAIN HOSE

Drain hose maximum height	110 cm
Drain hose minimum height	50 cm
Drain hose maximum lenght	400 cm
Total Power	15 W
Voltage	220/240 V
Frequency	50 Hz
Resistance	238.6± %5 Ω

UPPER SPRAY ARM

It distributes water from upper spray arm to dirty dishes in the upper basket.

It provides to wash the dishes in the upper basket through turning by the holes with various angles.

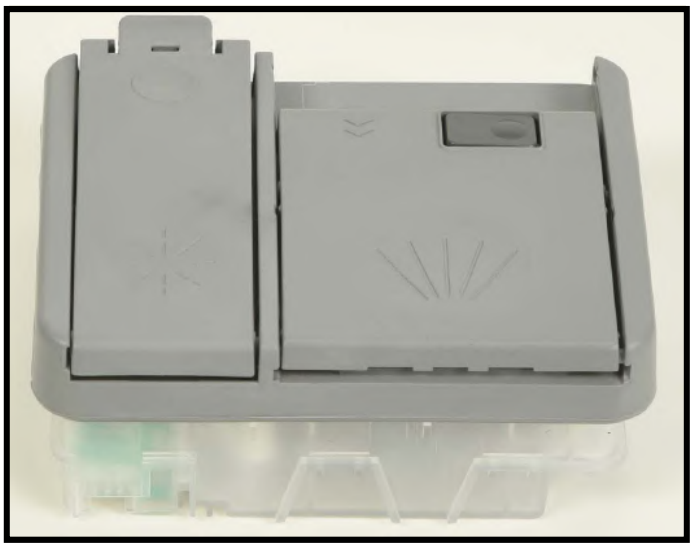
LOWER SPRAY ARM

It distributes water from lower spray arm to dirty dishes in the lower basket.

It provides to wash the dishes in the lower basket through turning by the holes with various angles.

DETERGENT / RINSE AID DISPANSER

Detergant dispenser consists of rinse aid and detergant compartment. It has been assemlied to the ınner door by the snap fits. Only one bobbin has been used for operation the system.



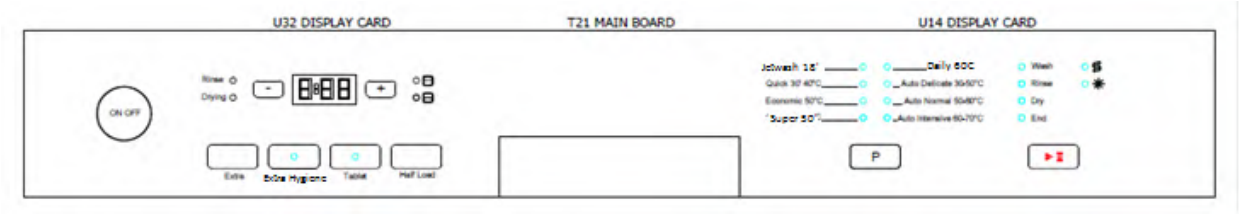
INTERFACE AND HARDWARE

Interface T21_11

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

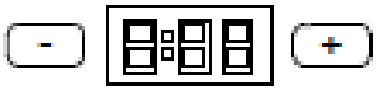
- Program button;
- Led “Rinse Aid”;
- Led “Salt”;
- “Start/Pause” button with integrated led;
- Leds according to program number;
- Program status with 4 leds; Led “Wash”; Led “Rinse”; Led “Dry”; Led “End”;
- “Half Load” button with 2 leds;
- “Extra Hygiene” option button with led;
- Extra button with 2 leds;
- “Tablet” option button with led;
- 3 Digit Display with “+” and “-”buttons

T21_11 Model



Note: Software of T21 main card will have the functionalities to use U31 & U21 displays also. Also software of T21 main card will include “half load option” (button in the main card)

DISPLAY CARD MOD. T12_11&T13_11&T14_11&T21_11



When user switch ON the Dishwasher display shows the time of the selected program in hour.
When program starts the remaining time is visualized in the same format and the led corresponding at the wash phase is on (from Wash to End).
If the user push + or – a delay time occurs in format “Hnn” (max h:24).
When program starts it visualizes the remaining delay time in the same format (1 hour steps).
When Child Lock option is switched on “CL” is shown for 2”. When Child Lock option is switched off “CL” is shown twice, each time for 2”.
When a Failure is present the code of the failure is visualized.
Ex: “F2” with leds blink.
When service run the Salt Set program “SL” is visualized for 2” and then the last value set is shown (if it’s the first time the default value “L3”). The value is chosen by pressure of +/-.

Note: T11 software will also have the functionalities of digit display card (delay start, remaining time) except Child lock function. Since child lock is activated in different combination in T11 models.

WASHING PROGRAM

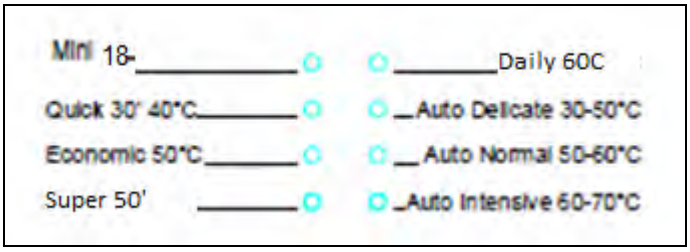
WASHING PROGRAM CROSS TABLE

Model	Mini 14’	Quick 30’ 40C	Delicate 40C	Economic 50C	Super 50’ 60C	Intensive 65C	Daily 60C	Auto Delicate 30°/50°C	Auto Normal 50°/60°C	Auto Intensive 60°/70°C
T11_11	-	-	-	X	X	X	-	-	-	-
T12_11	-	X	-	X	X	X	-	-	-	-
T13_11	X	X	X	X	X	X	-	-	-	-
T14_11	X	X	-	X	X	X	-	-	-	-
T21_11	X	X	-	X	X	-	X	X	X	X
T21_2	prewash	X	-	X	X	-	X	X	X	X
T21_4	X	X	-	X	X	-	X	X	X	X

X = present
- = not present

Program start positions T21

T21_11 Model



Selecting, Starting, Running, and Termination of a Program

Flow indicators are: T1 = Wash/Dry led.
T2 = Wash/Rinse/Dry/End leds.

Selecting and starting program at Power On: When dishwasher is switched on

	S/P	Flow ind.	End	Program led
Switch on	ON	OFF	OFF	ON
Select program	ON	OFF	OFF	ON
Pressure of S/P button	OFF	ON	OFF	ON

In model T12_11&T13_11&T21_11; the duration of the selected cycle is visualized in the display. Button reaction time must be 200msn maximum.(after pushing P button, program must be changed in 200msn maximum) Opening and closing door before program starts:

	S/P	Flow ind.	End	Program led
Door open	ON	OFF	OFF	ON
Door closed	ON	OFF	OFF	ON

Opening and closing door during program (not in dry steps):
During the program if the door is opened and re-closed without any modifications at the program button and without the pressure of S/P button, the program continues. Washing program re-starts after 8” if the measured temperature is equal or more than 45°C.

Opening and closing door during program:

	S/P	Flow ind.	End	Program led
Door open	Blink	ON	OFF	ON
Door closed	OFF	ON	OFF	ON

Opening and closing door during program during a dry step:
During dry if the door is opened and re-closed, the program ends.
In model T12_11&T13_11&T14_11&T21_11; during dry if the door is opened and re-closed, the program continues.

In model T12_11&T13_11&T14_11&T21_11;

	S/P	Flow ind.	End	Program led
Door open	Blink	ON	OFF	ON
Door closed	OFF	ON	OFF	ON

It is possible that the door is opened during a 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 continuos.
- 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 beginnin of the next washing cycle.

Selecting and starting program at door opened:
When dishwasher is switched on

	S/P	Flow ind.	End	Program led
Switch on	ON	OFF	OFF	ON
Door open	ON	OFF	OFF	ON
Select program	ON	OFF	OFF	ON
Pressure of S/P button	Blink	ON	OFF	ON
Door closed	OFF	ON	OFF	ON

Rinse Aid absence and Salt absence visualization

In all model, two leds for rinse aid absence and salt absence are present. They are driven by hardware.

Options & Models

Option	T11	T12	T13	T14	T21
Half Load (1 mode)	X	X	X	X	-
Delay Start	-	X	X	X	X
Half Load (3 modes)	-	-	-	-	X
Extra (Rinse&Drying)	-	-	-	-	X
Prewash	-	-	-	-	X
Tablet	-	-	X	X	X
Hygiene			x	x	x

Note: T21 software will also include halfload (1 mode) option.

Compatibility between Options

Options	Half Load	Extra Rinse	Extra Drying	Tablet	Delay Start	Hygiene
Half Load	-	OK	OK	OK	OK	OK
Extra Rinse	OK	-	OK	OK	OK	OK
Extra Drying	OK	OK	-	OK	OK	-
Tablet	OK	OK	OK	-	OK	OK
Delay Start	OK	OK	OK	OK	-	OK
Hygiene	OK	OK	-	OK	OK	-

Note: When incompatible options are selected, led of last selected option turns on, the other one turns off. Ex: User selected extra dry option(its led is on). Then, he selected extra hygiene. Extra dry option led turns off, extra hygiene led turns on.

Compatibility between Options&Programs(T21)

	Half Load	Hygiene	Tablet	Delay Start	E.Rinse	E.Dry
Mini 14’	X	-	-	X	-	-
Quick 30’ 40C	X	-	X	X	X	X
Economic 50C	X	X	X	X	X	X
Super 50’ 60C	X	X	X	X	X	X
Daily 60C	X	X	X	X	X	X
Auto Delicate	X	X	X	X	X	X
Auto Normal	X	X	X	X	X	X
Auto Intensive	X	X	X	X	X	X

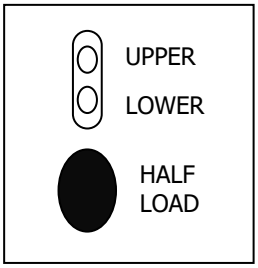
Option Selection:

-In case of Power fail during washing , options are stored in memory.
-When the machine is switched on again, the last selected options are visualized and washing must go on remaining.
-Due to Eco design requirements, each energized of the machine (by pressing ON/OFF) Eco program must be fixed as default, the options that are chosen before will be cancelled.

- In case of Power fail, options are stored in memory if it occurs in washing cycle.
- At the end of the program, when drain step is performed, only the third digit that is on the right of display will be ON. (It shows only one ‘‘0’’). Then, when the users push any button, display shows the total time of the program).
- Each energized of the machine (by pressing ON/OFF), Eco program will be set as default setting. And the options that are chosen before (i.e: child lock, delay option ex...) will be cancelled.

Half load (with 3 modes) (Alternating washing) (T21_11 models)

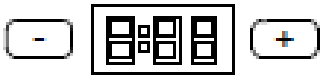
Half Load option is selected before program start by pressing the regarding option button.
When a half load option is chosen, washing program starts from main wash step (skipping the prewash step) When Half Load button is pressed:
First time: upper spray led is ON and lower spray led is OFF. Wash is executed only with upper spray arm. **Second time**: upper spray led is OFF and lower spray arm is ON. Wash is executed only with lower spray arm. **Third time**: upper spray led is ON and lower spray arm is ON.
Fourth time: upper spray led is OFF and lower spray arm is OFF. Normal wash.



Delay Start option (T12_11,T13_11,T14_11,T21_11 model)

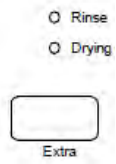
Delay start option is selected before program start by pressing “+” and “-” button in the display card. To change this option during a delay time it necessary to press s/p button and put the machine in “pause” mode. Before start program, the delay is selected with pressure of “+” and “-” buttons. The steps of increment/decrement are 1 hour. By pressing S_P, program starts and the value of the chosen delay blinks one time. Then the display shows the program duration and remaining delay time(with steps of one hour (H:01, H:02 etc)). The maximum value of the delay is 24 hours.

Note for: H01 returns after H24. In pause mode of delay, program and delay durations are shown alternately. Meanwhile, S/P blinks and program led is ON.



Extra Rinse and Extra Drying Option (T21_11 model)

Extra option is selected before program start by pressing the regarding option button.
When Extra button is pressed:
First time: Rinse led is ON and Drying led is OFF. Wash is executed with the following steps with “Rinse” functions instead of the normal.
Second time: Rinse led is OFF and Drying led is ON. Wash is executed with the following steps with “Drying” functions instead of the normal.
Third time: Rinse led is ON and Drying led is ON. Wash is executed with the following steps with both “Rinse” and “Drying” functions instead of the normal.
Fourth time: Rinse led is OFF and Drying led is OFF. Normal wash.



Pre Wash Option (T13_11, T14_11, T21_11 models)

Pre Wash option is always selectable by pressing the regarding option button. With this option a cold rinse is added at the beginning of the washing cycle.

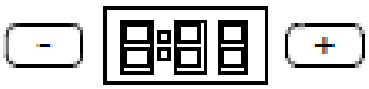
In some program this option causes alterations in the washing lineagramma (Intensive 65°C becomes Extra Intensive 70°C and Hygiene becomes Extra Hygiene).
Note: T11 and T12 software will also include “Prewash” option.

Tablet (T13_11, T14_11, T21_11 models)

Tablet option is selectable at any time. If it is pressed during a washing program the program will execute the following steps with “tablet” functions instead of the normal.
Note: T11 and T12 software will also include “Tablet” detergent option.

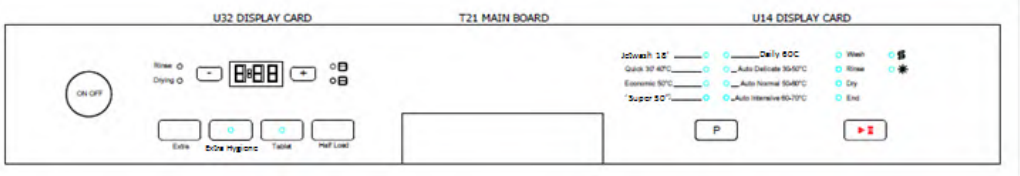
Child lock (T12_11, T13_11,T14_11, T21_11 model)

Child lock is enable/disabled by contemporary pressure of “+” and “-” buttons in the display card for 3”. When lock is enabled the “CL” is shown in the display for 2”. In T21, also wash led blinks once. When lock is disabled the “CL” is shown twice in the display for 2”.In T21, also wash led blinks twice. When lock is enabled and a button is touched “CL” is shown in the display for 2” (not for “+” or “–“button).



IONIZER

For T2x:Ionizer function is activated/deactivated by pressing “Extra” button for 3”. When it is activated, display shows “Ion”. Also, Ionizer can be deactivated by turning machine off and on.



When the door is closed and the function is selected, ionizer function will start. There is no need to press Start/Pause button. Start/Pause button led is off while ionizer is working.

Ionizer does not work together with any program or not executed in any program.

The function will follow below loop and if there is no intervention, it continues until 24 hours is completed. -During 5 minutes(Between 0-5 minutes): ionizer+mini fan+turbo fan will work.

-During 55 minutes(Between 5-60 minutes): ionizer+mini fan+turbo fan will not work.

After 24 hours, it is automatically deactivated.

When ionizer deactivated, machine is in standby position.

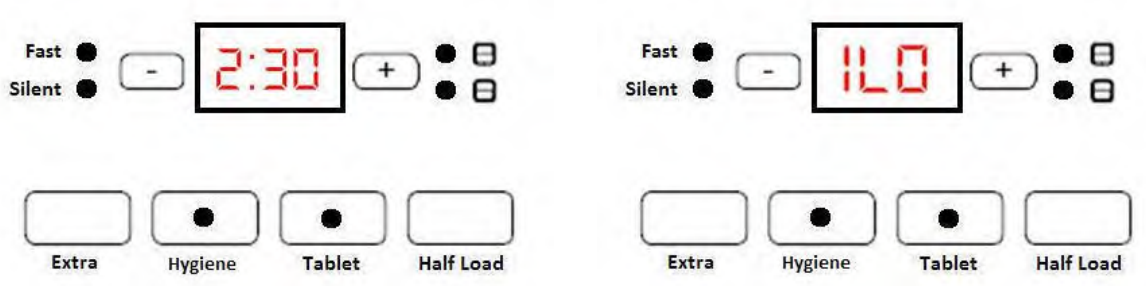
When the door is open and ionizer is activated, ionizer led and inner light become on.Also, Start/Pause led blinks. Ionizer function pauses if the door is open. To continue, the door should be closed.

INNER LIGHT OPTION: (T21_1,T21_4)

Machine must be ON position during activation and deactivation of inner light modes. Note: open or close position of the door is not important

How to change from "ECO MODE" to "NORMAL MODE" for Inner Light option

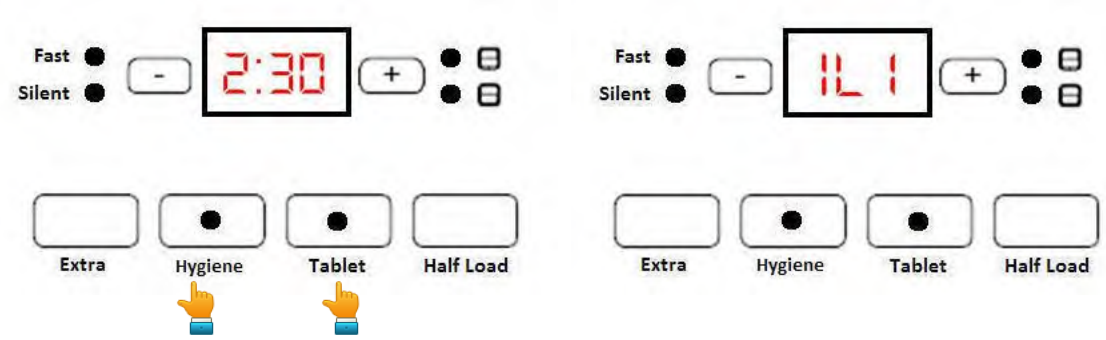
- First energize the machine via main switch (if it is in OFF position).
- Press 'Tablet and ''Hygiene" buttons simultaneously for 3 seconds.
- **"IL0**" will be shown in the display for 2 seconds to show the "Normal Mode" is selected for inner light option.



- 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

- First energize the machine via main switch (if it is in OFF position).
- Press ''Tablet'' and ''Hygiene'' buttons simultaneously for 3 seconds.
- **"IL1**" will be shown in the digit display for 2 seconds to show the "Eco Mode" is selected for inner light option.



- Also inner light turns OFF and ON again (blinks momentarily) to show this selection is activated.
- 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 is set to ''IL1''.
Note: Light Module (TY9) is introduced to execute this specialist feature.

WASHING PROGRAM DURATION (T12_11, T13_11, T14_11,T21_11 MODEL)

Before the beginning of the wash, the display card shows the duration of program.
During the wash, the display card shows the remaining time of program.
During the wash, if the user presses S/P and then presses the program selection button:

- If the new program has a corresponding step, the display shows the time of the new program without the passed time.
- If the new program has not the corresponding step (ex: it starts in a subsequence step) the entire time of the new program is shown.

SOFTWARE REQUIREMENTS

Heater

Heating relay must be switched with un-supplied
Heater. It means: - Stop Circulation Pump;

- Wait (pressure switch certainly open);
- Open/Close Heater Relay;
- Wait (Heater relay certainly
- close); Start Circulation Pump.

If Tablet is selected, heating steps must be < 58°C for steps before last rinse.

Water Fill

Action: Water Load is obtained by flow meter signals. When a fixed quantity of water is loaded, the reaching water level is checked by the activation of circulation pump. When the pressure is high enough, the pressure switch is activated. *Precaution:*
At the start program a drain 30" + empty is executed before fill.
When Inlet valve is ON, if there aren't flow meter impulses, failure routine of "absence of flow meter impulses routine" works (see on failure chapter).
If pressure sensing switch turn OFF during the wash, after a drain +20", another water load is executed (also see"return empty level" failure in failure chapter).

Water fill must work:
Pressure > 0,8l: all OK
0,3 < pressure < 0,8l: OK with time out
Pressure < 0,3l: stop cycle.

Note:

T2: lower spray arm starts.

Water drain

Action: Water drain starts with drain pump ON for 33". After 30", circulation pump ON.When empty level is recognised (by pressure switch signal), the circulation pump stops and the machine continues for the request steps.

Precaution: if pressure switch level doesn't switch in Empty level (during circulation pump on), failure of Water drain works (see failure chapter).

NOTE:drain is performed with lower spray arm.

Detergent dispenser step

T2: for the detergent step 2' of upper spray arm are performed.

Rinse aid dispenser step

If the door is opened and re-closed during washing program, without a re-start program, detergent dispenser must return in Rinse aid distribution state.

T2: for the rinse aid step 2' of upper spray arm is performed.

FEATURE OF TIME PHASE:

- At the beginning o the main wash of eco program, If temperature of water < 30C , Time phase is not activated at the main wash of eco program
- At the beginning o the main wash of eco program, If temperature of water > 30C , Time phase is activated at the main wash of eco program
- These two rules cover only eco programs.

REGENERATION CYCLE

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

Water Hardness leve	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

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 (2,1 lt + 2,5 lt).

In case of Tablet option ON (only mod. T13 and T21):

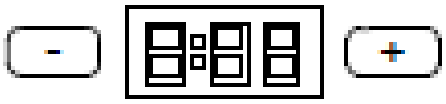
- If the level set is less than L4: the regeneration cycle is not performed, but the quantity of consumed water is counted. When the target value is reached, at the first cycle without the tablet the regeneration cycle is performed.

- If the level set is equal or more than L5: the regeneration cycle is performed when the quantity target is reached.

Water Hardness set for T12_11&T13_11&T14_11&T21_11 Models

Level	Display
1	L1
2	L2
3	L3
4	L4
5	L5
6	L6

Only service can execute this procedure.



→ Power OFF; pressure program selection button button.
→ Power ON and continue to pressure program selection button at least for 3". → If "Hardness set" is recognized "SL" is shown for 2".
→ Release program selection button. The last setting level is viewed*.
→ Pressure + or – button to set the desired level.

At any pressure of + button hardness level is incremented. At any pressure of – button hardness level is decremented. Hardness level 1 returns after hardness level 6.

* If it is the first hardness set, hardness level is L3.

RINSE AID SET

→ Power OFF; press program selection button button.
→ Power ON and continue to press program selection button for 5".
→ If "Rinse aid set" is recognized
Without display models➔all leds blink twice.
With display models➔ "rA" is shown for 2".
→ Release program selection button. The last setting level is viewed*.
→ Press
program selection button to set the desired level for models without display
+ or – button to set the desired level for models with display.

Without display models➔ At any pressure of program selection button rinse aid level is incremented.
With display models➔At any pressure of + button rinse aid level is incremented. At any pressure of – button rinse aid level is decremented.

Rinse aid level 1 returns after level 5.

* If it is the first rinse aid set, Default rinse aid level is 4 which corresponds to 4,5 cc.

For models with display:

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

- By switching off the machine, the last selected level by the user is setted and saved in memory.

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

<table>
<tr><th colspan="2">Action</th><th colspan="2">Old</th><th colspan="2">New(Sliding dispenser)</th></tr>
<tr><td colspan="2">Detergent cover opening:</td><td colspan="2">5"</td><td colspan="2">0.3"</td></tr>
<tr><td rowspan="6">Rinse aid dose:</td><td>Dose setting:</td><td colspan="2">Manual in the dispenser</td><td colspan="2">Automatic in the software</td></tr>
<tr><td rowspan="5">Dose quantity and time to delivery</td><td>1 - 1cc</td><td rowspan="5">25"ON; 2"OFF; 25"ON
For each setting from 1 to 6</td><td>1 - 0cc</td><td>OFF</td></tr>
<tr><td>2 - 2cc</td><td>2 - 1.5cc</td><td>8"ON; 8"OFF</td></tr>
<tr><td>3 - 3cc</td><td>3 - 3cc</td><td>8"ON; 8"OFF</td></tr>
<tr><td>4 - 4cc</td><td>4 - 4.5cc</td><td>8"ON; 8"OFF</td></tr>
<tr><td>5 - 5cc</td><td>5 - 6cc</td><td>8"ON; OFF</td></tr>
</table>

SERVICE TEST

Only service can execute this procedure.

- Power OFF; pressure S/P button.
- Power ON and continue to pressure S/P button at least for 6”.
- When “Service test” is recognized all leds blink for 2” (in T21 only “SP” is visualized on the display.If there is no failure, “--- “ is shown.) and Service test starts.

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.

Note1: For models with display, step numbers of service test are shown as 1.SP, 2.SP, 3.SP,….

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	Fill + Wash (0,5/1lt)**		Flow meter; Inlet Valve; Pressure Switch;
↓	Turb. Sensor	30”	Measure of turbidity sensor (only T21)
5/4	Wash	1’	Circulation pump; Regeneration Valve; detergent dispenser.
6	Wash + Heat ***	5’	Heater (PSW); NTC; diverter (position).
7/8	Reg. Valve + Turbo Fan	1’	Regeneration Valve + Turbo Fan (Turbo Fan only T21)
9	Drain	20”	Drain pump; pressure switch.
10	End	-	Code error or end led

* 3lt in T11, T12, T13; 2,5lt in T21.

** 0,5lt in T11, T12, T13; 1lt in T21.

*** In service test the unsuccessful heating failure routine works with reduced time of recognize (first measure at 2’20”, second measure t 4’20”)

If during the service test, the door is opened, start/pause led blinks (in T12,T13,T21 also “SP” is shown). For T21, when the door is closed, display continues to shown 1.SP, 2.SP,…

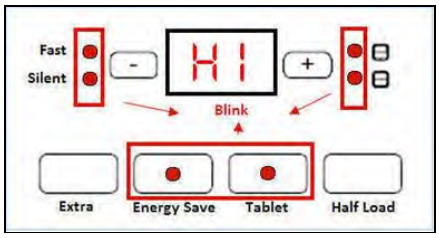
Note2: If water hardness level was not set and service test is started, “SE” is shown at the beginning and end of the service test.

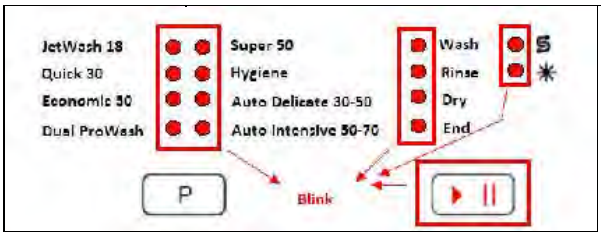
Note 3: If there is no error at the end of service test; after 9.SP, machine goes in standby position directly.

Service Failure Codes

Name	DISPLAY	Notes
Overflow	F0	In the normal work this failure is not visualized.
Leakage	F1	
Draining time out	F2	
Presence of Flow meter impulses	F3	
Absence of Flow meter	F4	In the normal work this failure is not visualized.
Empty Level	F5	
Re-Fill time out	F5	
NTC ca/cc	F6	
Overheating	F7	
Unsuccessful heating	F8	
Diverter opened	F9	
Turbidity Sensor	FA	In the normal work this failure is not visualized.
Parameter set salt incorrect	SE	In the normal work this failure is not visualized.
CK Parameter	FE	
High Voltage	HI	In the normal work this failure is not visualized.
Low Voltage	LO	In the normal work this failure is not visualized.

HIGH VOLTAGE FAILURE





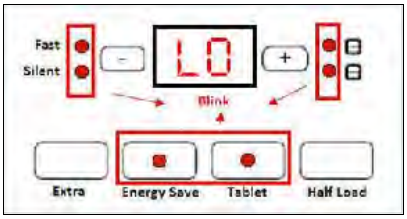
Recognize: When high voltage (Above 285V, then 275-285VAC) detected during 3 hours *Action:*Go to ***Failure routine***.

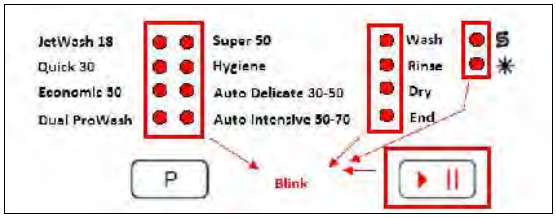
Exit: OFF/ON.

Vers. T2_1 :	ALL leds blink	Display HI

Service: NO

LOW VOLTAGE FAILURE





Recognize: When low voltage (blow 145V, then 145-155VAC) detected during 3 hours *Action:* Go to ***Failure routine***.

Exit: OFF/ON.

Vers. T21_1 :	ALL leds blink	Display LO

Service: NO

Coding failure for T12, T13, T14, T21:

N°	Name	S/P	Display	All leds
1	Door open	Blink	-	
2	Delay before Door closing	-	-	
3	Overflow	-	-	
	Leakage	-	F1	Blink
4	Drain time out	-	F2	Blink
5	Re-Fill time out		F5	Blink
6	Presence Flow meter imp.		F3	Blink
7	Absence Flow meter imp. With Full		-	
	Absence Flow meter imp. Without Full		F5	Blink
8	NTC ca/cc		F6	Blink
8	Overheating		F7	Blink
10	Unsuccessful heating*		F8	Blink
11	Diverter opened		F9	Blink
12	CK Parameters		FE	Blink
12	High Voltage Failure		(HI)	Blink
13	Low Voltage Failure		(LO)	Blink

*Unsuccessful Heating is shown at the end of the program

END TEST PROGRAM

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

End test 1

Vestel receives the electronic cards ready to start “end test 1”. In any case, it’s possible, re-start the end test 1 with a manual manoeuvre.

- Power OFF; pressure Program selection button and S/P button.
- Power ON and continue to Program selection button and S/P button at least for 3”.
- When “End test 1” is recognized all leds blink for 2” (in T12&T13&T14&T21 also “1.EP” is visualized on the display for 2 sec) and End test starts.

-After end test starts, All digits and all leds should be on together at the beginning of the end test-1 (display also show 888) during first 3 seconds.

- At the end of end test 1, switch OFF the dishwasher.
-To skip the End test1, press S/P button for 3 sec.

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 keep performing.

-Salt indicator and rinse aid indicator is ON if reed sensors are short cut during end test END TEST 1 or END TEST2
-Salt indicator and rinse aid indicator is OFF if reed sensors are not short cut during end test END TEST 1 or END TEST

End test 2

When the electronic card is switched on after the end test 1, end test 2 starts.

- 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"
- End test 2 is finished.

During this phase, failure routine of unsuccessful heating and failure routine of ntc works. If the water temperature doesn't increase, at the end of 15', the drain pump will be on.

When the electronic card is switched on after end test 2, it will be in washing mode.

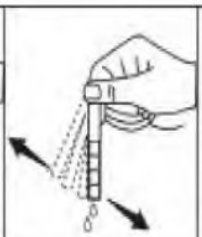
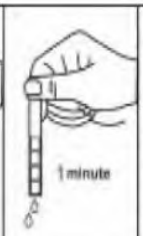
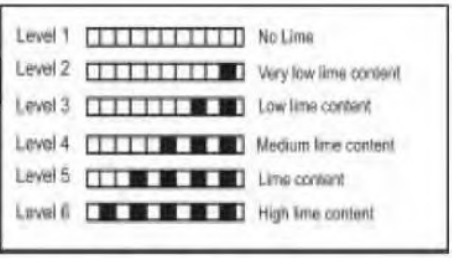
During end test2 ;display show ''2.EP''.

Note: During check of Turbidity and Diverter position in the End Test1, if there occurs error, electronic card will save these errors and will go to the failure routine at the beginning of END test 2 (as NTC failure recognition)n)

MEASUREMENT THE WATER HARDNESS

TEST STRIP;

The washing effectiveness of your machine depends on the sofness 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 corrrectly set. To make the system setting, use the testing strip, if it is available, and find the hardness of the mains water supply.

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.
					

FAILURE CODES (Possible Problems)

F1 (ALARM IS ACTIVE FOR OVERFLOW)

FLOATER

- Floater switch can be out 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)

Draın 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 swıtch 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 cna 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, seperate the water input hose from the tap and clean the filter at the connection end of the hose.

Water inlet valve

- Watger 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 bo 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.
- There may be an explosion in the NTC triac region on the electronic card.
- The electronic card may be deformed.

CABLE HARNESS

- There may be a problem caused by the disconnection between the cable tree, NTC and electronic board.

NOTE: If the NTC part is faulty, it will not resist in any way.

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)

Dıverter

- 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.

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.

X series have rinse aid indicator on the control panel.

There isn't any rinse aid

there is rinse aid

c) There can be mechanical or electrical problem with the detergant dispenser.

d) There can be a problem on the PCB card.

NECESSARY INFORMATION HAVE TO BE GIVEN TO USERS WHILE INSTALLING THE DISHWASHER

Customer should be informed about follawing items.

- Give general information to user about the product.
- General information about washing programmes and suggest to the customer using suitable program according to the dirtiness level.
- Give information about additional functions.
- Give information to the customer about starting the machine, following the program, resetting the program and changing the program.
- Give information about activate and inactive the child lock. Customers should be informed about the child lock will not be inactive automatically at the end of the
- programme.

Models haved ½ half load option;

In ½ option when only upper Lamp is flashed, only upper spray Will be in operation.

In ½ option, when only lower lamp is flashed, only lower spray will be On operation.

When both lamps are flashed, this Function is half load function. If the Customers have little amount of Dishes, they should use this function.

When both lamps are not flashed, It means the machine will continue normal operation. When the lamps are not flashing, does not mean spray arms are not rotating.

- The customers should be informed about looking at instruction manual at first, when they face to failure.
- After installing the machine to a suitable place, run it unloaded for the first time.

This should be recommended to the customers that they should search the instruction manual carefully when there is a possible repair.

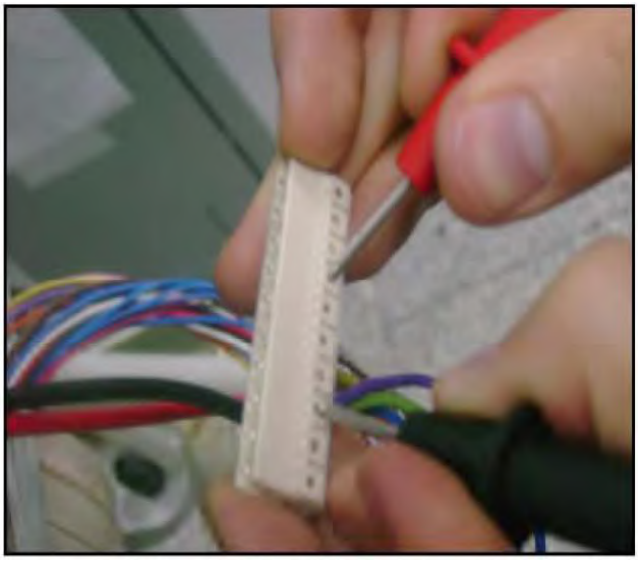
REPAIR TECHNIQUES COMPONENTS AND RESISTANCE VALUES

COMPONENTS	C		T		NOTES
ON / OFF SWITCH	0 Ω on component		0 Ω on component		ON/OFF button is presserd
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
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 RİNSE AİD ∞Ω THERE IS RİNSE	KN 50.8 - KN 50.9	0 Ω NO RİNSE AİD ∞Ω THERE IS RİNSE AİD	Rinse adı 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 connentors 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.



Picture (a)

Example electronic card

Probes of the tester should be applied on to the related connectors of the electronical card;

control the values according to the resistance value table. Picture (a)

COMPONENT VALUES MEASUREMENT

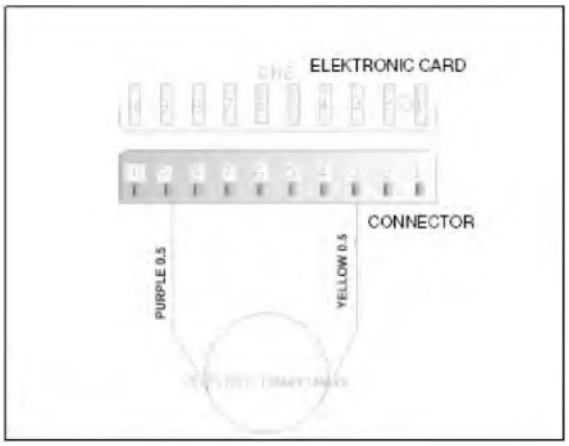
Precaution: Always remove the plug from the power socket before touching internal components.

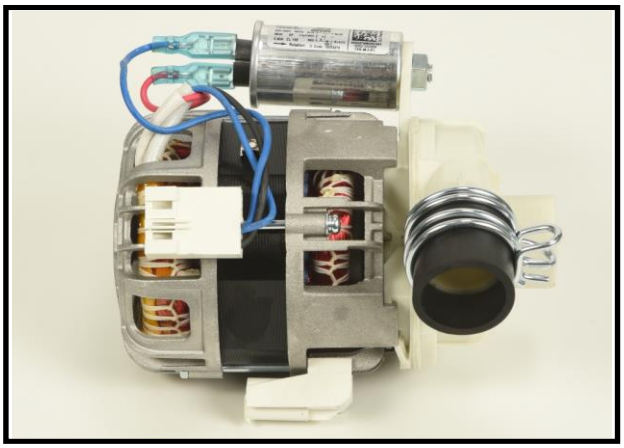
WASHİNG PUMP:

From the electronical card:

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

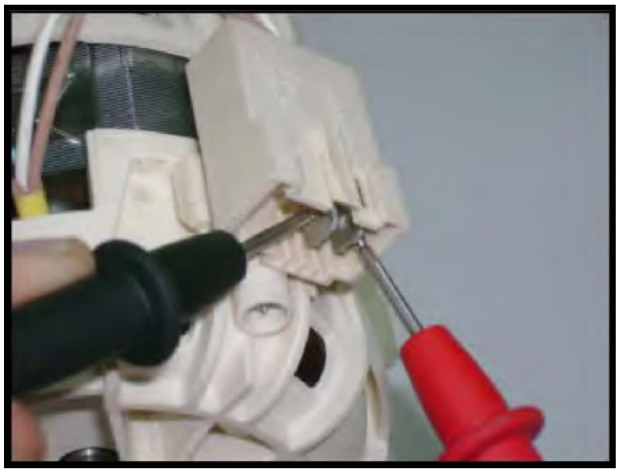
	C	T	
CIRCULATION PUMP	CN2.3 - CN2.9	KN2.3 - KN 2.8	Primary winding Secondary winding (from the component)





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

From the component:



Measurement of the primary windings of the washing pump

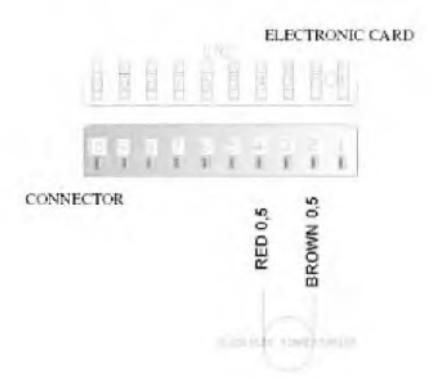
Measurement of the secondary windings of the washing pump (white cable – blue cable)

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

DRAIN PUMP

From the electronical Card:

	C		T	
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



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

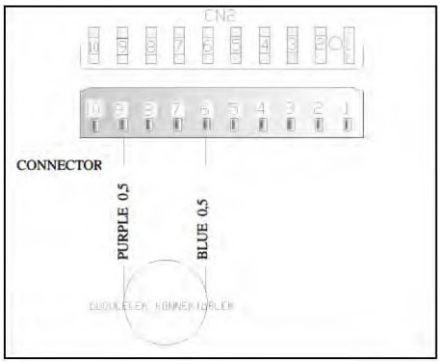
From the component:

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

WATER INLET VALVE

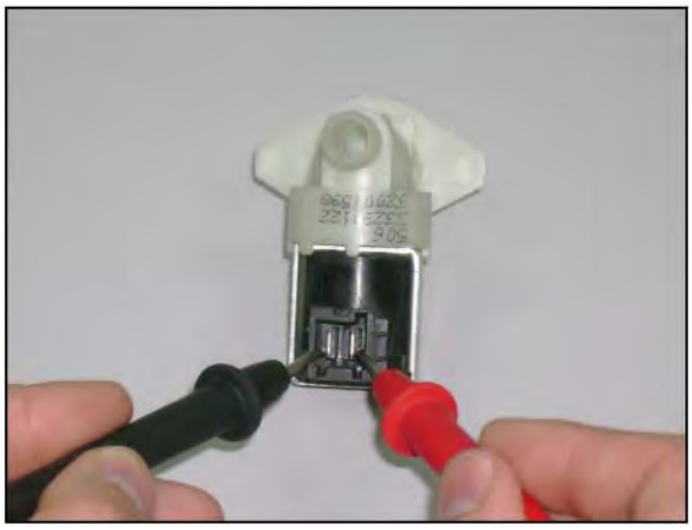
From the electronical Card:

	C	T
WATER INLET VALVE	CN2.6 - CN2.9 4200 Ω ± %10 (20°C)	KN2.6 - KN2.8 4200 Ω ± %10 (20°C)



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

From the component:

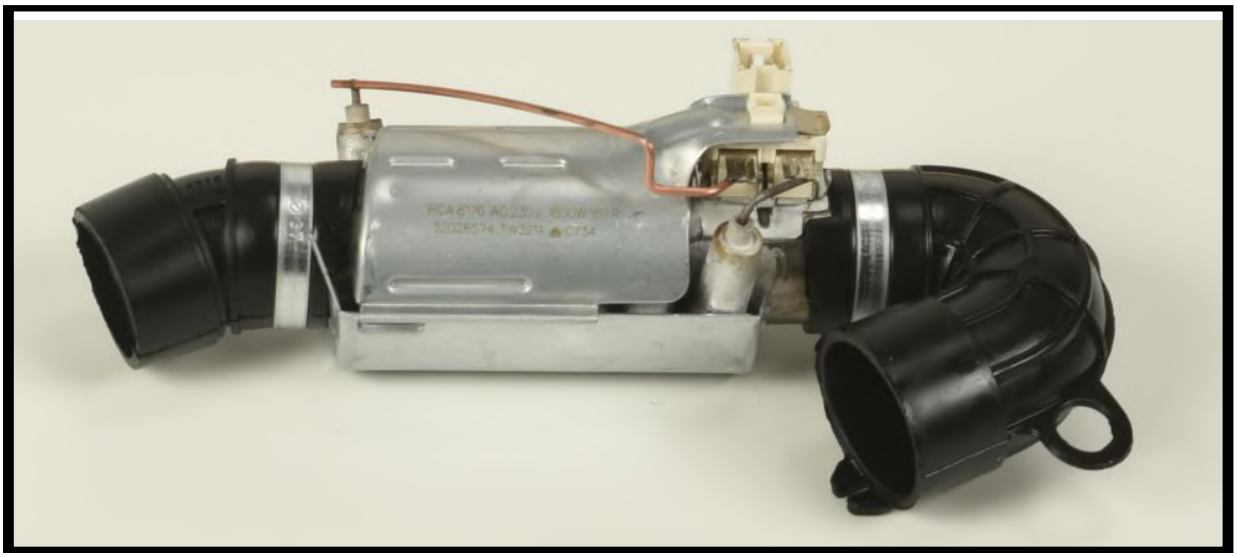


Probes of the tester should be applied on to the related connectors as shown on the pictures.

HEATER

It can’ be measured from the electronıcal card.

From the component:

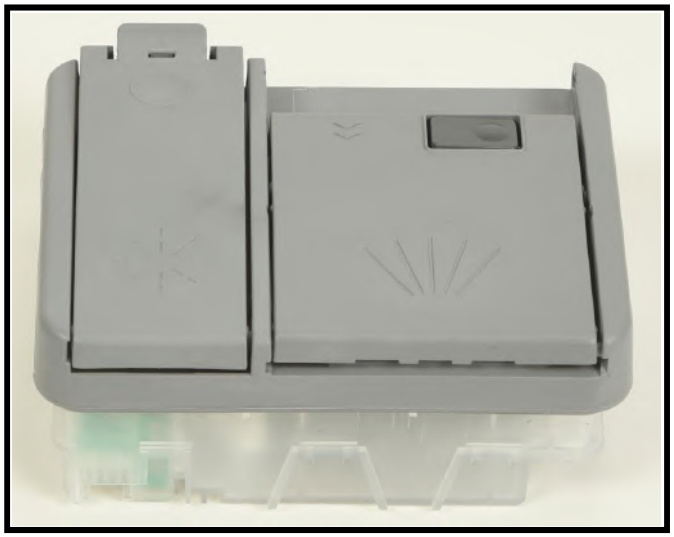


DETERGENT DISPENSER

It can’t be measured from the electronical card:

	C	T
DETERGENT DISPENSER	2300 Ω ±%10 (25 C°)	2300 Ω ±%10 (25 C°)

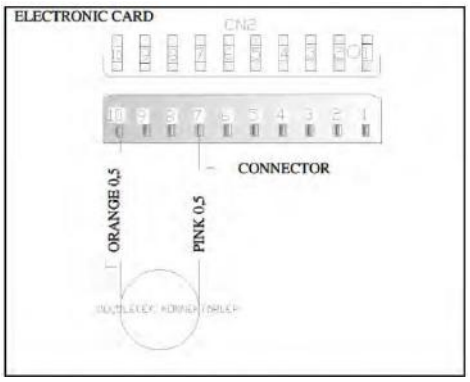
From the component:

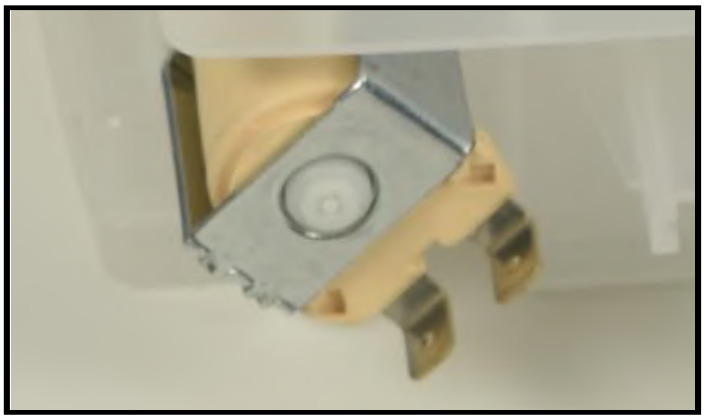


REGENARATION VALVE

From the electronical Card:

	C	T
REGENERATION VALVE	CN2.2 - CN2.7 3560 Ω ± %10(25°C)	KN2.2 - KN2.10 3560 Ω ± %10(25°C)





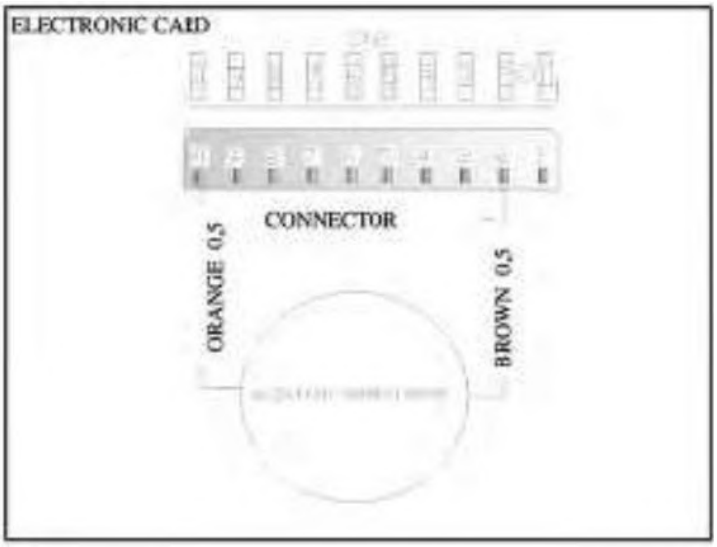
Above sketch show the connectors of rhe regenaration valve on the electronical card.
Probes of the tester should be applied on to the related connectors.

From the component:

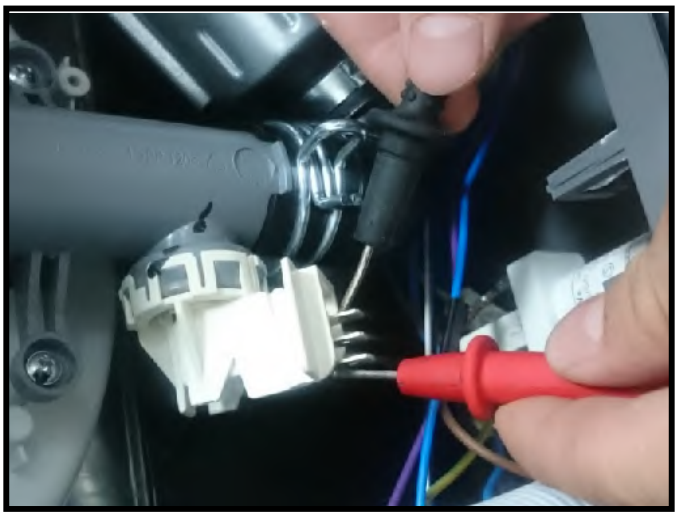
PRESSURE SWITCH

From the electronical 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:

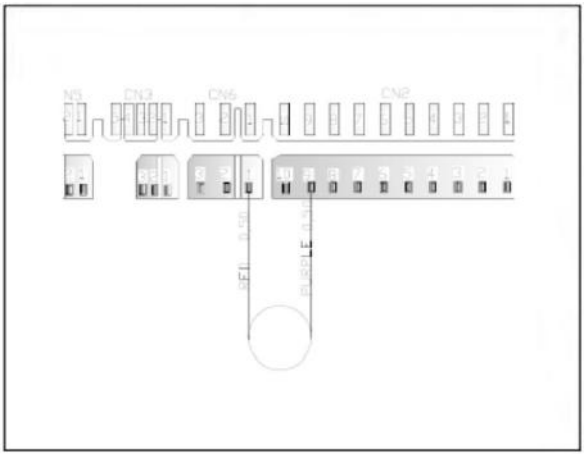


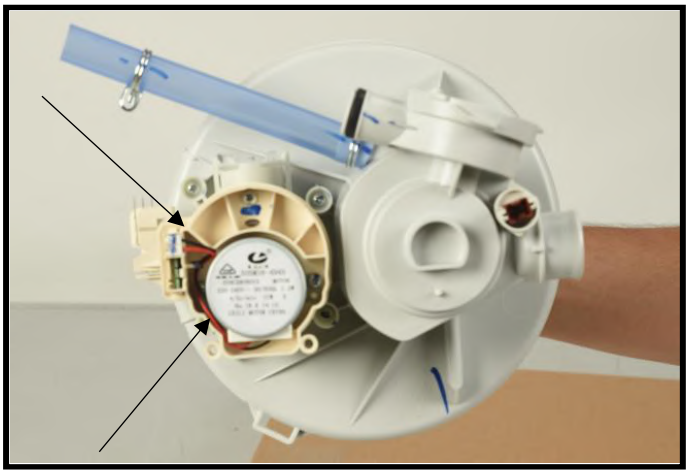
Probes of the tester should be applied on to the related connectors as shown in the picture above.

DIVERTER

From the electronical Card:

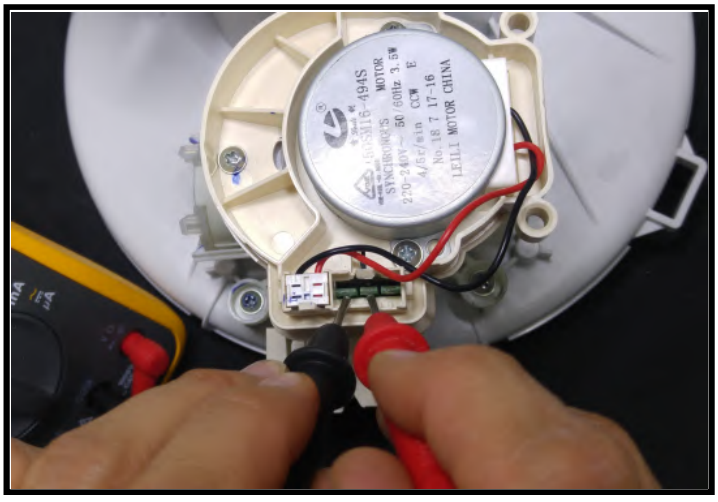
	C	T
DIVERTER	CN 6.1 - CN 2.9 10500 ± %7 Ω	KN 6.1 - KN 2.8 10500 ± %7 Ω





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

From the component:

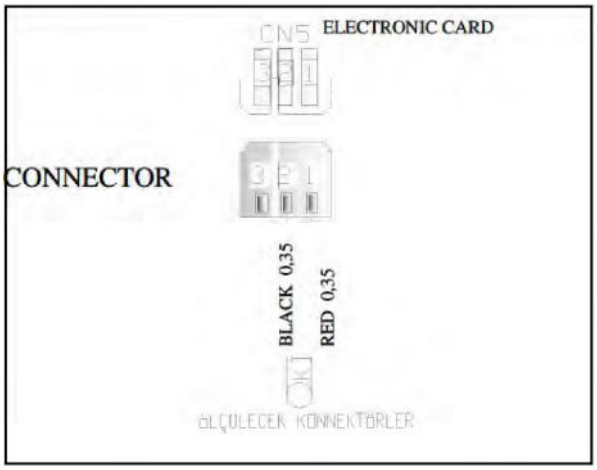


Probes of the tester should be applied on to the related connectors as shown on the pictures.

SALT SENSOR

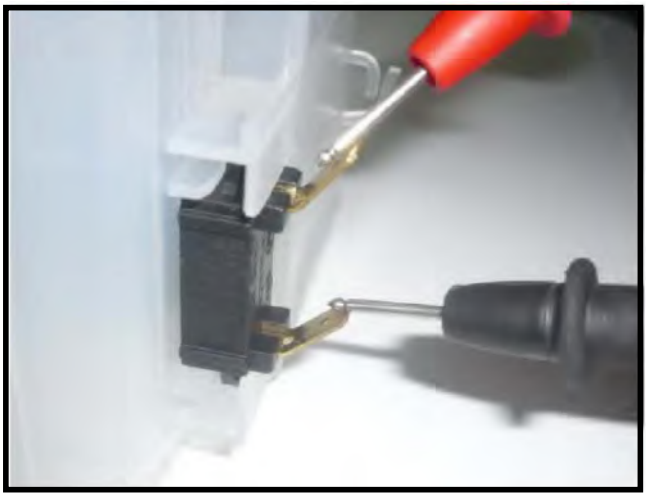
From the electronical card:

	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 electronical card. Probes of the tester should be applied on the related connectors.

From the component:



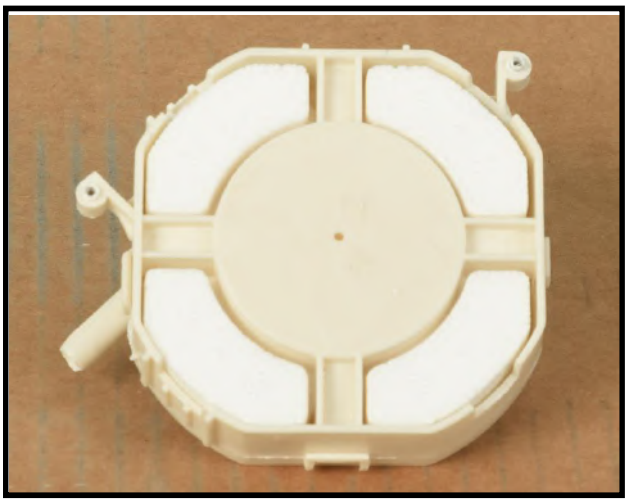
salt sensor can also be measured from the water softener whenthe salt sensor assemblied on the water softener.

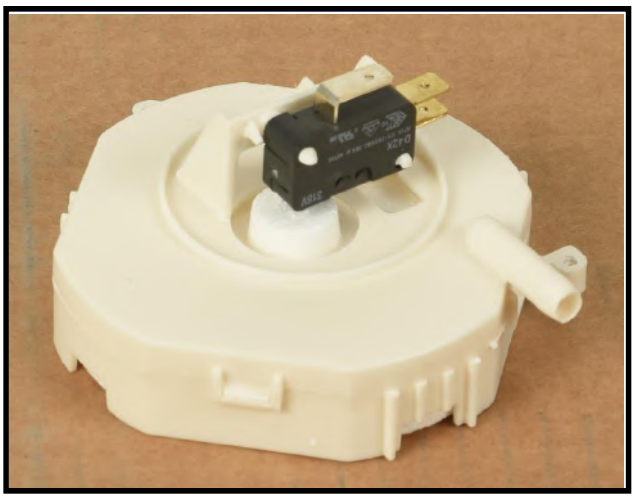
Probes of the tester should be applied on to the related connectors as shown on the pictures.

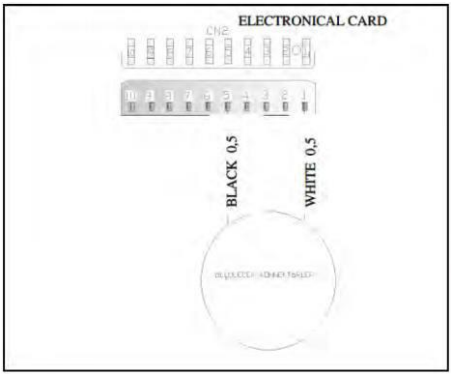
FLOATER

From the electronical card:

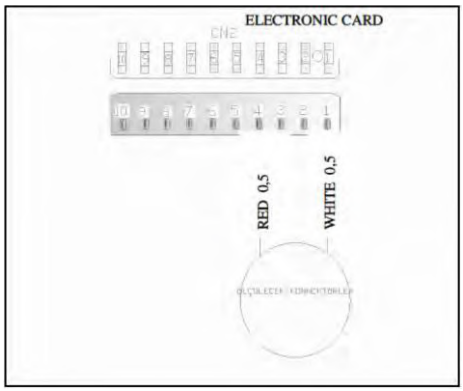
	C		T		
FLOATER (MICROSWITCH)	CN2.1 - CN 2.5 CN2.1 - CN 2.4	0 Ω ∞Ω	KN2.5 - KN 2.10 KN2.4 - KN 2.5	0 Ω ∞Ω	Microswitch is inactive (no water) microswitch is active (there is water)







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

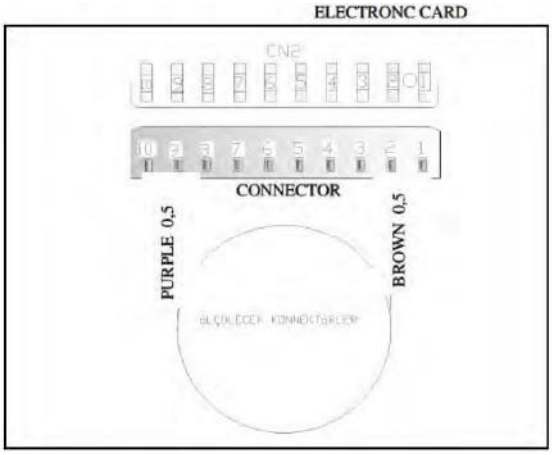


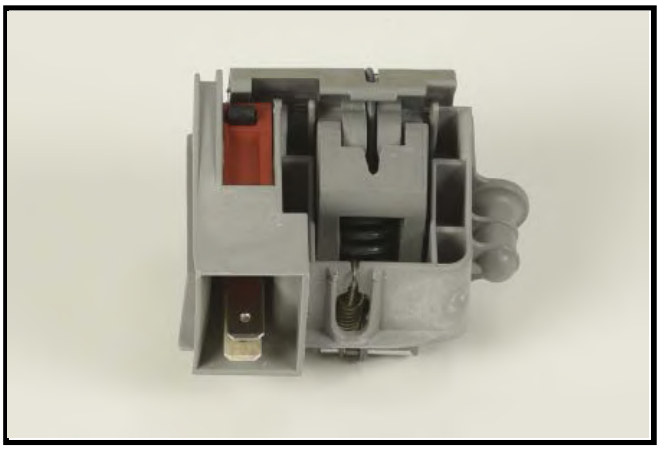
Position 2 : If failure code is occured related with the floater within control the above values: You can figure out whether leakage occurs or not.

DOOR SWITCH

From the electronical card:

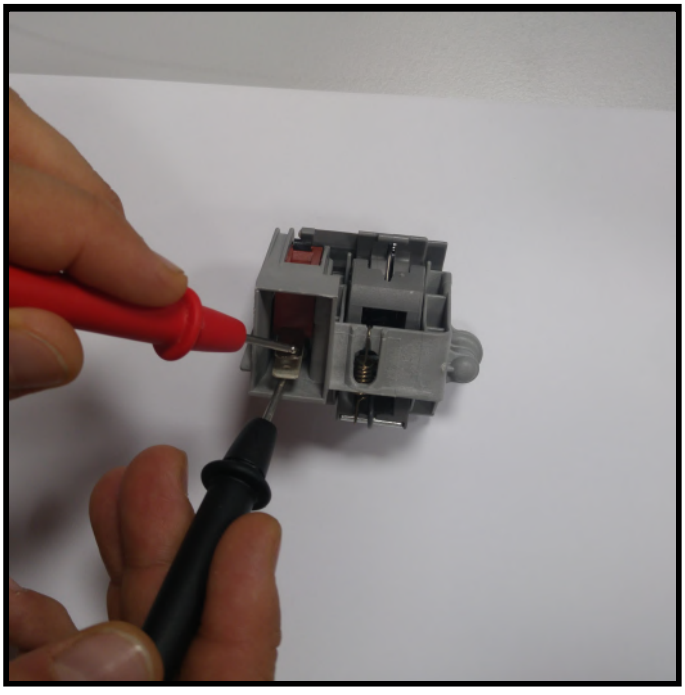
	C	T	
DOOR SWITCH	CN2.9 - CN2.2 0 Ω	KN2.8 - KN2.10 0 Ω	Door is close





Above sketch show the connectors of the door switch on the electronical card.

From the compoonent:

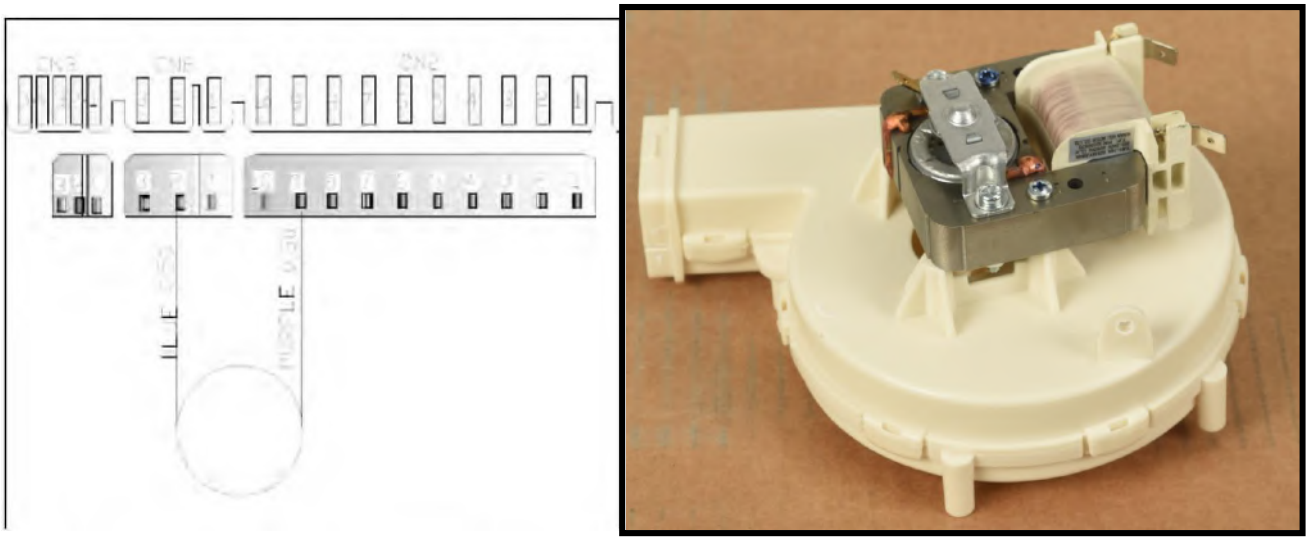


Probes of the tester should be applied on to the related connectors as shown on the pictures.

FAN MOTOR

From the electronical card:

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



Above sketch showa-s the connectors of the fan motor on the electronical card.

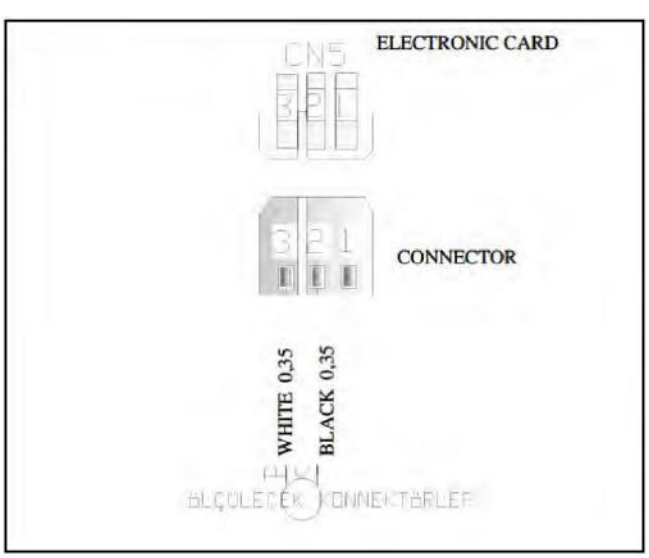
From the comonent:

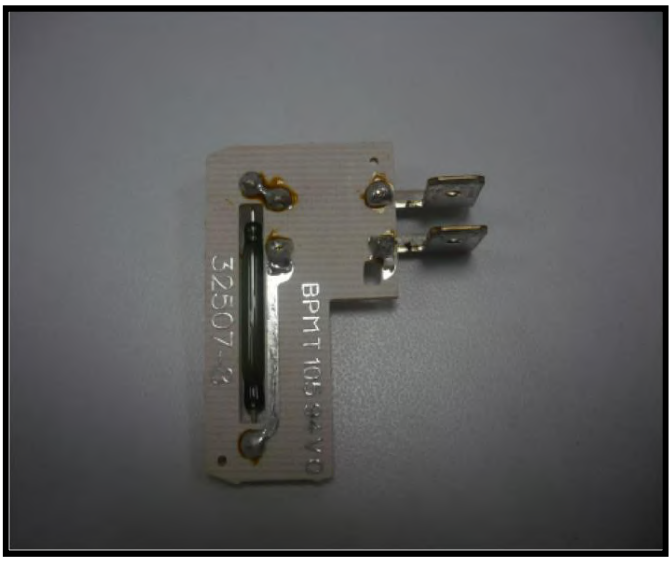
Probes of the tester should be applied on to the related connectors as shown on the pictures.

RİNSE AİD SENSOR

From the electronical card:

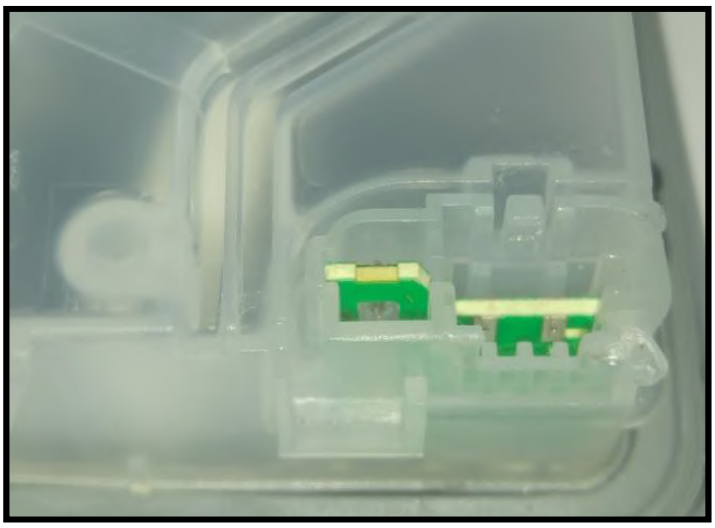
	C		T		
RINSE AID SENSOR	CN 5.3 - CN 5.2	0 Ω NO RİNSE AİD ∞Ω THERE IS RİNSE AİD	KN 50.8 - KN 50.9	0 Ω NO RİNSE AİD ∞Ω THERE IS RİNSE AİD	Rınse adı off Rinse aid on

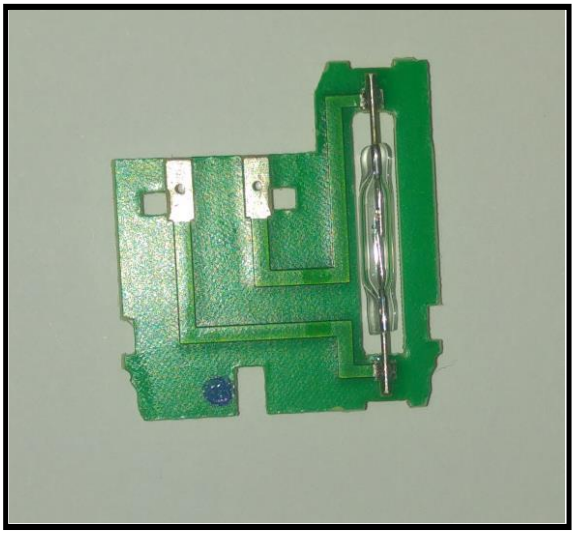




Above sketch shows the connectors of the rinse aid sensor on the electronical card.

From the component:





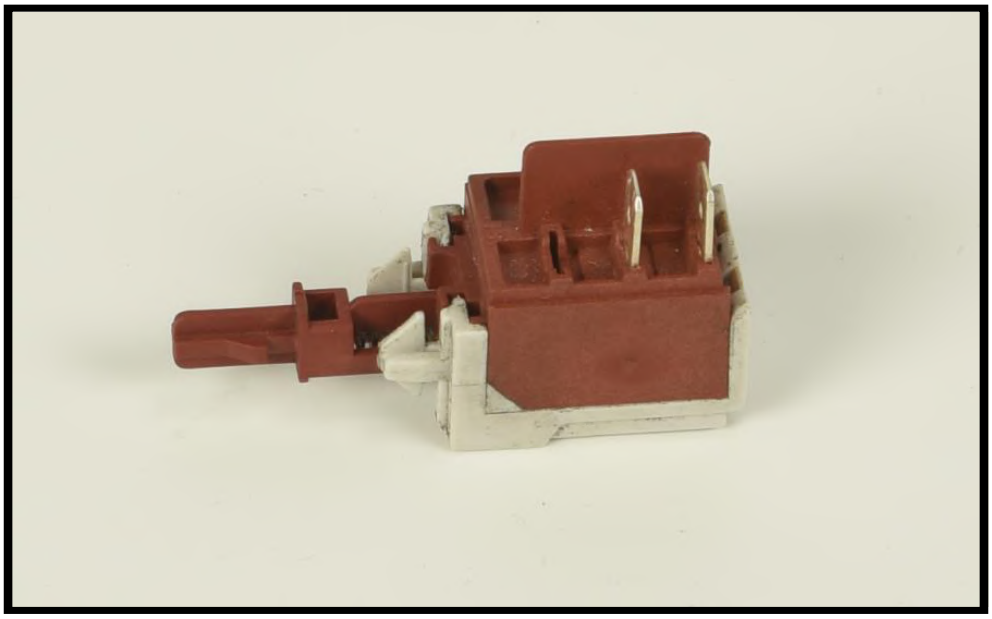
Probes of the tester should be applied on to the relatde connectors as shown on the pictures.

ON/OFF SWITCH

It can’t be measured from the electronical card.

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

From the component:



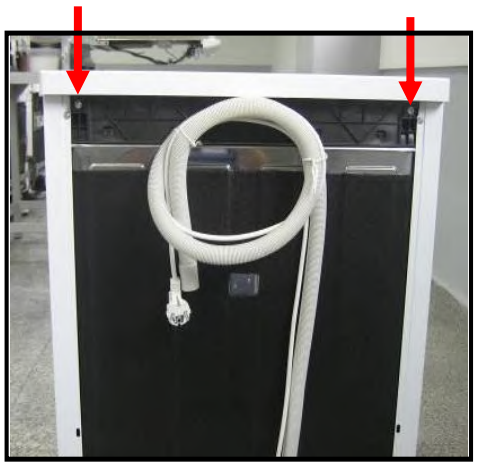
DISASSEMBLY

CAUTION!: REMOVE ELECTRIC PLUG FROM THE SOCKET DURING THE DISASSEMBLY

Top Plate

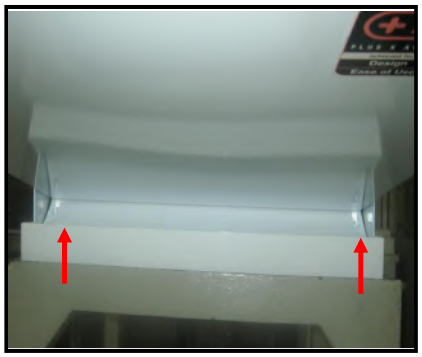
a) Remove two screws that fix the top plate at the back.

b) Push the top-plate back and pull it up.

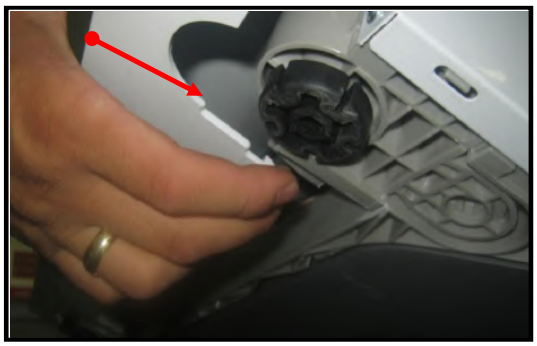


Plastic Kick Plate

a) Remove two screws fixing plastic kick plate.



b) Remove the plastic kick plate as it is shown in the picture.

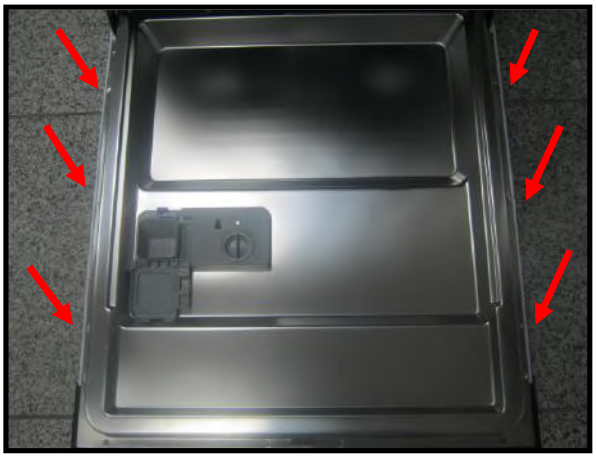


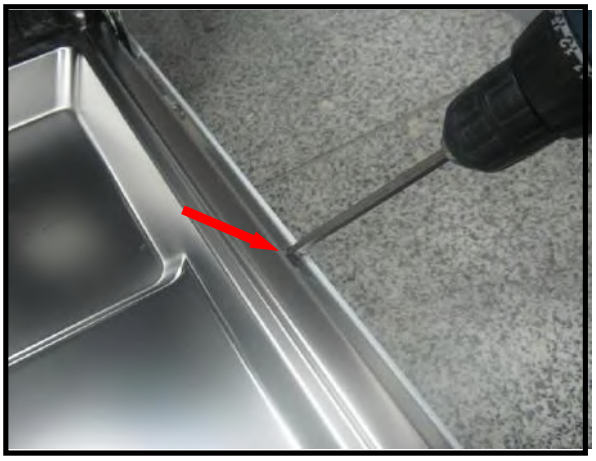
Side panels

Remove the screws fixing side panels

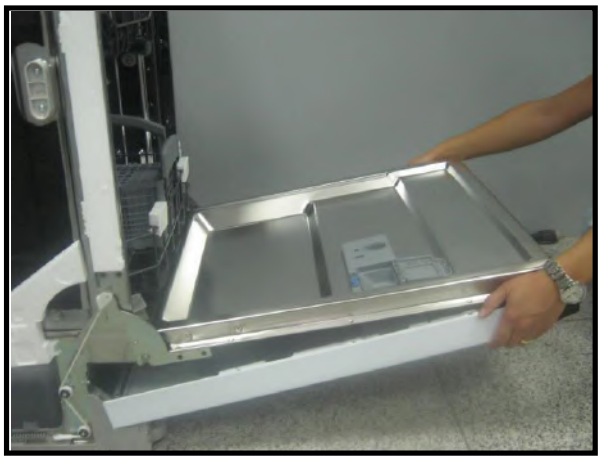
Front Panel

a) Remove the screws as it shown in the picture.





b) Pull down the front panel after removing the screws.



Kick Plate Sheet Iron

a) Remove top plate, plastic kick plate and side panels.

b) Remove the screws (4 screws) that fix the kick plate sheet iron.

c) Pull it down as shown in the picture.

- To remove the side panel, remove the upper plastic hinge and than the above one and pull it up.

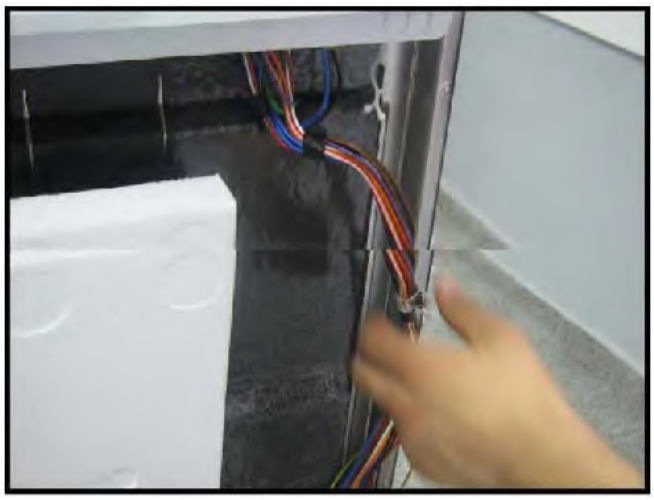
Control Panel

a) Remove 6 screws that fix control panel to the door inside sheet iron.

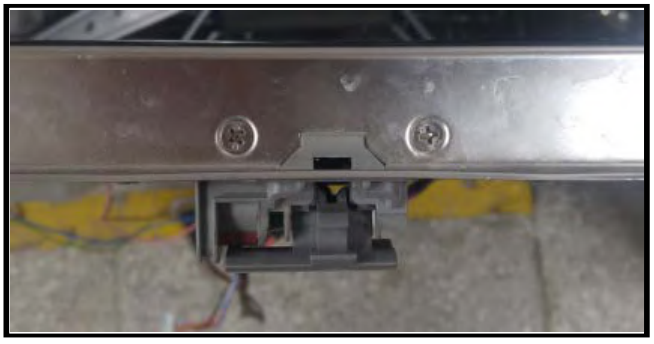
b) Remove the control panel group crefully as shown in the picture

c) Remove the cable connection plastic which fix cable harness to the control panel as shown in the picture.

d) Remove the wires that are connected to control panel group.



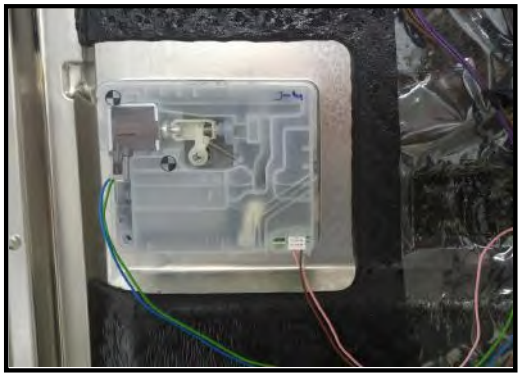
Door Lock Group



a) Remove control panel group

b) Remove two screws that fix the door lock group.

Dispenser



a) Remove the front panel

b) Remove the wire.

c) Remove dispanser from inside door's hingers by using slotted screwdriwer.

Push and remove the dispanser.

Door Inside

a) Remove side panels.

b) Remove Built-in Hinge Spring.

c) Pull the door inside up as It is shown in the picture.

d) Remove two screws that fix hinge movement sheet iron to the door inside.

Air - break

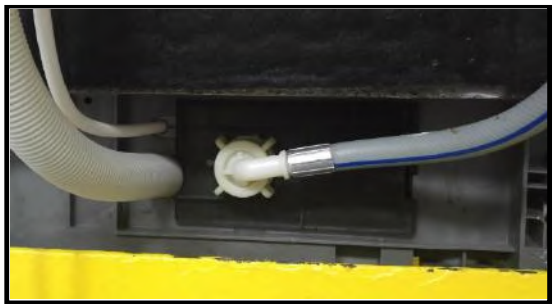
a) Remove the left side panel of the machine.

b) Open machine's door

c) Rotate counterclockwise air-break nut and remove it.

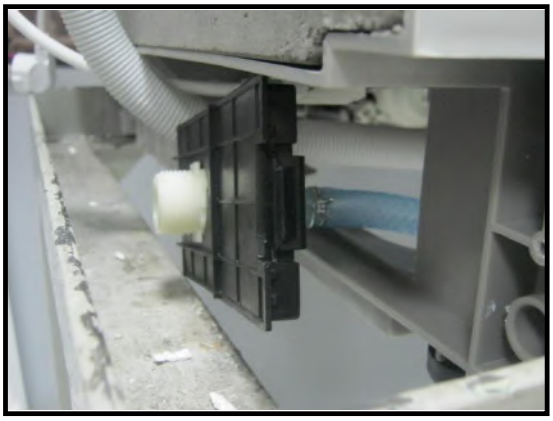
d) Remove air-break's connections with salt cap as it is shown in the picture. (be careful about plastic hinges)

Hose connection plastic



a) Remove left side panel.

b) By using flat tip screwdriver remove hose connection plastic's hinge from the basement as it shown in the picture



c) Push the hose connection plastic.

Warning: If you do not obey instrucyions while disassembly od the hose connection plastic it can be broken.

Power cord

a) Remove hose connection plastic.

b) Remove the lower cover.

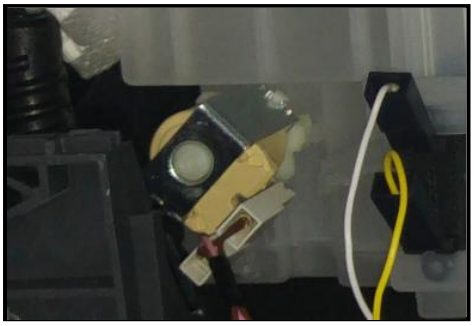
c) Remove the wires that is between power cord and parasite filter.

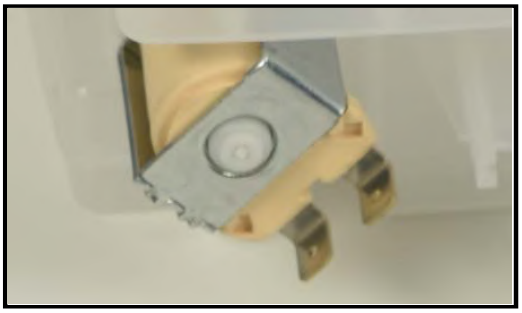
d) Remove the power cord.

To acces the components from in Front of the Machine

a) Remove plastic kick plate iron sheet and basement front cover

Regenaration valve



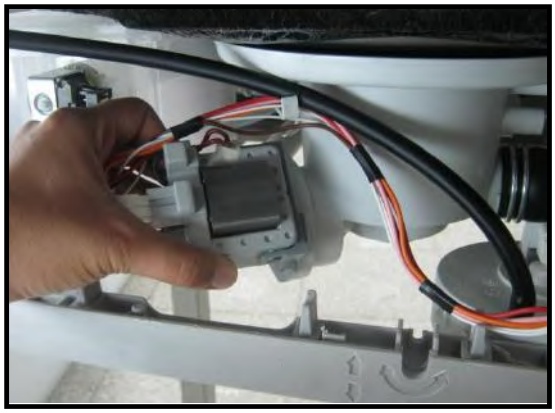


a) Remove plastic kick plate and kick plate iron sheet.

b) Remove the wires

c) To remove regenaration Value rotate counterclockwise and pull it as it is shown in the picture.

Drain pump



a) Remove plastic kick plate and kick plate iron sheet

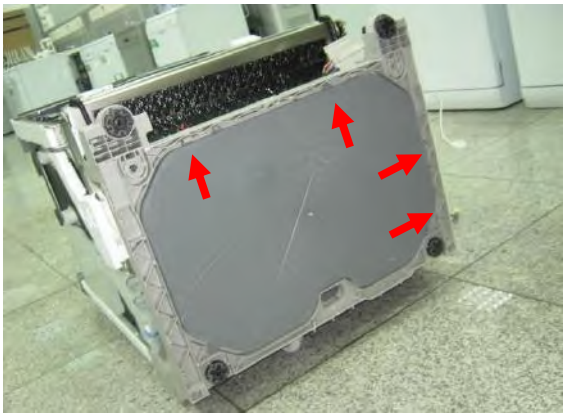
b) Remove the wires.

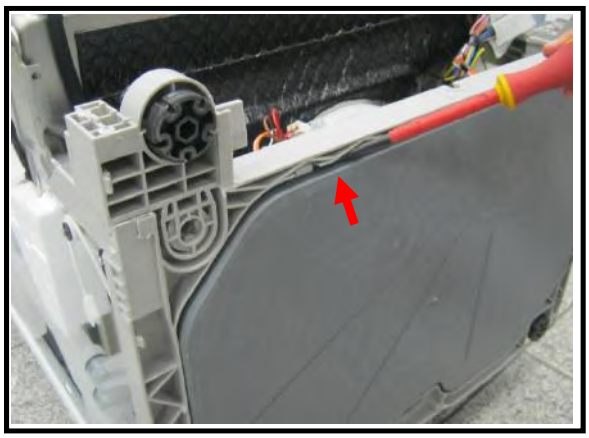
c) To remove the drain pump that fixes to the sump, rotate it an the direction of counterclockwise and pull.

Access the components from the lower cover

a) Lay the appliance on the rear panel.

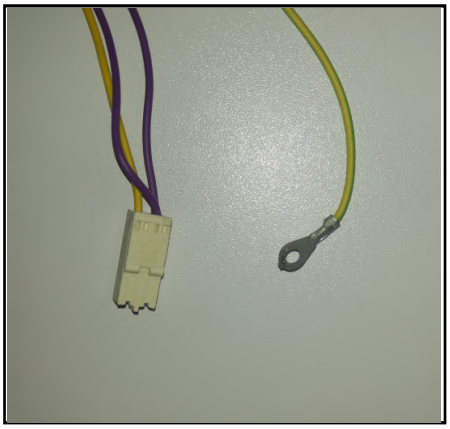
b) Remove lower cover from the places that are shown in the picture.

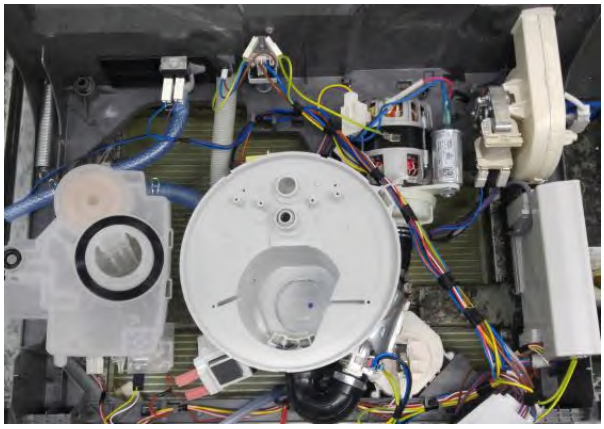




Circulation pump

a) Remove lower cover from the places and measure the component.





Water softener

a) To remove salt cup cover, rotate it in the direction of counterclockwise

b) To remove salt cup nut, rotate it in the direction of counterclockwise.

c) Remove left side panel.

d) Derach the connections which are between water softener and air-break.

e) Remove lower cover.

f) Remove the hose that is between sump and salt camp.

Parasite filter

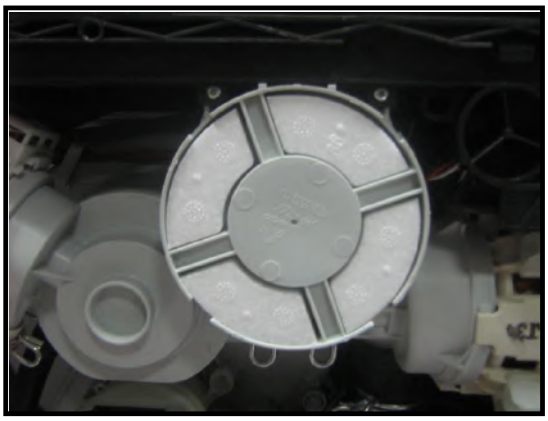
a) Remove lower cover.

b) Remove one screw fixing parasite filter.

c) Remove wires.

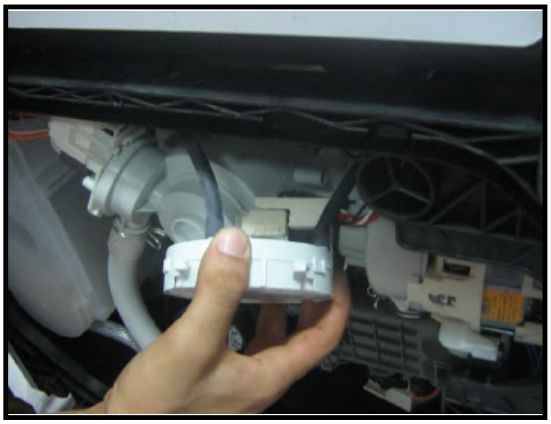
d) Push parasite filter and remove it.

Floater



a) Remove lower cover.

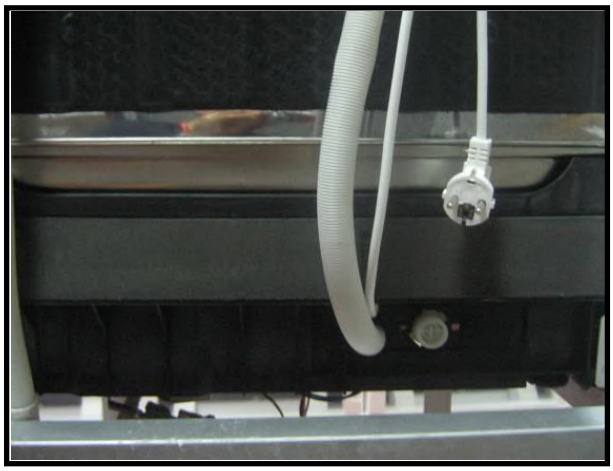
b) Remove two screws that fix floater as it is shown in the picture.



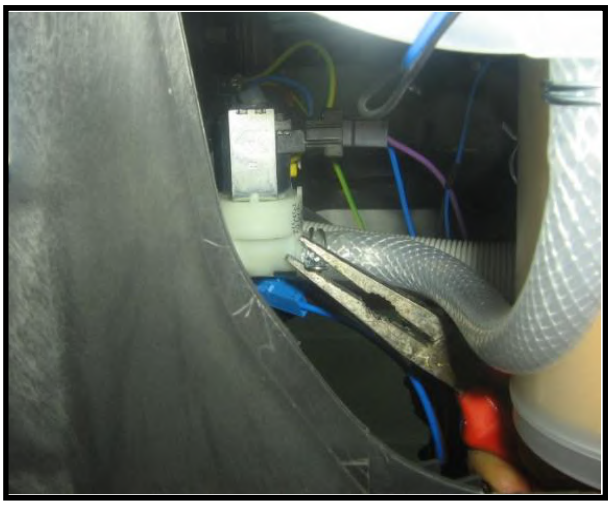
c) Remove the two floater hoses.

d) Remove the wire that is connected to the floater.

Water Inlet valve



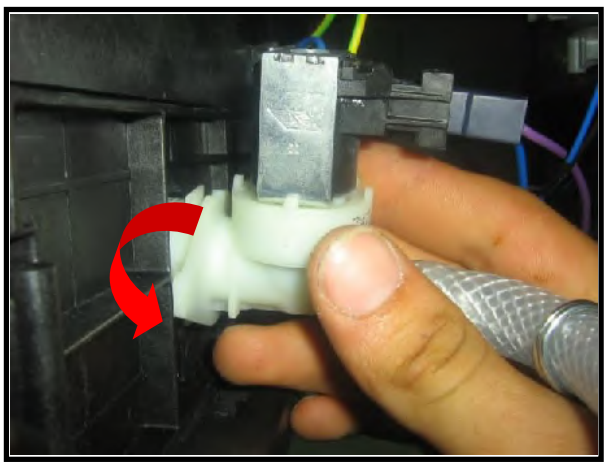
a) Remove lower cover.



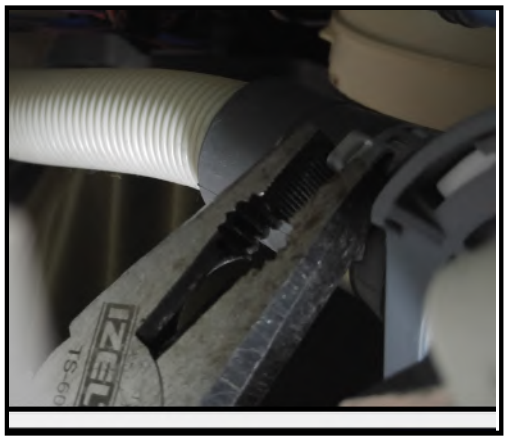
b) Remove the wire that is connected to the water inlet valve.

c) Remove the clamp that connects water inlet valve and air-break as it is shown in the picture

To remove water inlet valve pull it back as it is shown in the direction of picture then release water inlet valve from the pins that is connecte to and rotate it in the direction of counterclockwise.



Draining hose



a) Remove the hose connection plastic.

b) Remove lower cover.

c) Remove the clamp that fixes draining hose to thesump

d) Remove draining hose

Lower basket

a) Open machine’s door.

b) Pull the basket to yourself.

Upper basket

a) Open upper basket rail lock front.

b) Pull the basket to yourself and remove it.

The components that are inside the tub course, micro and metal filters

a) Open the door.
b) Remove lower basket
c) To remove microfilter group rotate them in the direction of counter clockwise and pull them up as it is shown in the picture

d) To remove microfilter group (course filter and micro filter) pull them as it is shown in the picture.

e) To remove the metal filter pull it up as it shown in the picture.