

**12/2016**

**ENG**







**Technical  
Manual  
Electronic  
board**

EWC system

## START-UP

Upon installation some simple steps need to be done:






- 1- Select the language with the arrows  
- 2- Confirm by pressing and holding the key 
- 3- Enter the inlet water hardness: Use the arrows to select the hardness – Confirm by pressing and holding the key
- 4- Select the water hardness with the arrows  
- 5- Confirm by pressing and holding the key 


## Filling the straws with detergent and rinse aid

The messages below will be displayed:

DO YOU WANT TO FILL THE DETERGENT STRAWS?







- 6- With the arrows   select YES or NO and confirm with the key 
- 7- If NO is confirmed, the program exits
- 8- If YES is confirmed the following message appears

INSERT THE STRAWS IN THE TANKS AND CONFIRM

- 9- Confirm by pressing the key . After having confirmed you exit programming and simultaneously the straws are filled with detergent: the detergent doser is activated for 50 sec., the rinse aid dispenser is activated for 30 sec.

## ELECTRONIC DISHWASHER FUNCTIONING VIEW



P180	Selected program / Countdown secondi	
Pronto	Dishwasher condition	
TNK 55°C	Tank Temperature	
BLR 83°C	Boiler Temperature	
 ON/OFF	SWITCH ON / SWITCH OFF	
 START	START WASHING CYCLE	
 ARROW "UP"	TIME WASHING CYCLE SELECTION (see default parameter table) (Keep the arrow pressed to go to the next cycle)	
 ARROW "DOWN"	TIME WASHING CYCLE SELECTION (see default parameter table) (Keep the arrow pressed to go back to the previous cycle)	
 MANUAL RINSING CYCLE	START THE SUPPLEMENTARY RINSING CYCLE 15 sec. that can be set from the technical menu	
 MANUAL DRAIN CYCLE <i>(only with drain pump installed)</i>	REMOVE OVERFLOW PIPE AND START DRAIN CYCLE (dishwasher with optional extra installed only) (Keep the button pressed to start the drain cycle)	

ATTENTION: if the machine is on "READY" also with the temperatures and the display shows the message

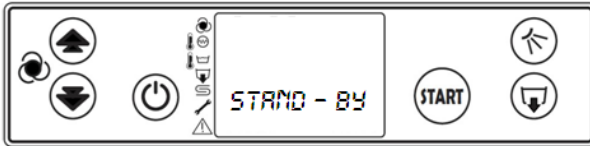
**ATTENTION HOT STEAM**

The display will be blocked and no operation will be available. In order to go further please close the door and wait for the display to visualize again the message

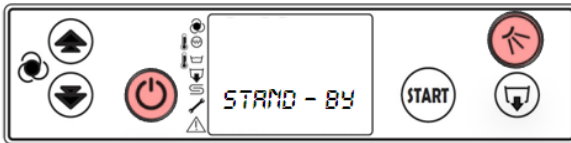
**READY**

## TECHNICAL MENU

1- Switch the dishwasher off (Stand-By displayed)



1- Press the keys simultaneously




















2- Enter the password



*If you make a mistake while entering the password, press any key and retype*






















**To navigate the menu use the following keys:**

	Go forwards through the menu items
	Go backwards through the menu items
 	Change parameter of the selected item
	Prolonged press to exit the menu

DISPLAY CUSTOMISATION					default
	1	Language	Allows to select the language for the display messages	Select the language with the arrows (UP or DOWN)  	
	2	Temperature Scale	Indicates the temperature scale used for the display of the temperature during normal operation (the temperatures in the menus are always in °C)	Select °F or °C with the arrows (UP or DOWN)  	
	3	Autostart	used to automatically start the washing cycle when the dishwasher door closes	Enable or disable the function with the arrows (UP or DOWN)  	on
DETERGENT AND RINSE-AID DOSAGE					
	4	Manual Detergent Doser	Allows to manually activate the detergent doser.	Push the switch button arrow UP 	
			<b>This function must be carried on during the first installation only to let the little detergent pipe to be filled</b>		
	5	Manual Rinse Aid Doser	Allows to manually activate the rinse-aid doser.	Push the switch button arrow UP 	
			<b>This function must be carried on during the first installation only to let the little rinse-aid pipe to be filled</b>		
	6	Load Detergent Time Set	Indicates the activation time of the detergent doser when machine loading is complete	 	*
			<b>Check the resulting PH using the specific tool inside the KIT100 (depending by the dishes to wash)</b>		
	7	Load Rinse Aid Time Set	Indicates the activation time of the rinse-aid doser when machine loading is complete	 	*
<b>Check the resulting PH using the specific tool inside the KIT100 (depending by the dishes to wash)</b>					
PROGRAM CUSTOMISATION					
PR1 Soft	8	Pr1 Boiler Set	Boiler temperature set for program 1	Adjustable range: 65÷ 85 °C	75/80
	9	Pr1 Tank Set	Tank temperature set for program 1	Adjustable range: 55÷ 65 °C	55
	10	Pr1 Detergent Load Time Set	Activation time of the detergent doser for program 1	Detergent addition	*
			<b>Check the resulting PH using the specific tool inside the KIT100 (depending by the dishes to wash)</b>		
11	Pr1 Rinse Aid Load Time Set	Activation time of the rinse-aid doser for program 1	Rinse-aid addition	*	

			<b>Check the resulting PH using the specific tool inside the KIT100 (depending by the dishes to wash)</b>		
PR2 Normale Breve	12	<b>Pr2 Boiler Set</b>	Boiler temperature set for program 2	Adjustable range: 65÷ 85 °C	<b>75/80</b>
	13	<b>Pr2 Tank Set</b>	Tank temperature set for program 2	Adjustable range: 55÷ 65 °C	<b>55</b>
	14	<b>Pr2 Detergent Load Time Set</b>	Activation time of the detergent doser for program 2	Detergent addition	*
			<b>Check the resulting PH using the specific tool inside the KIT100 (depending by the dishes to wash)</b>		
15	<b>Pr2 Rinse Aid Load Time Set</b>	Activation time of the rinse-aid doser for program 2	Rinse-aid addition	*	
		<b>Check the resulting PH using the specific tool inside the KIT100 (depending by the dishes to wash)</b>			
PR3 Normale	16	<b>Pr3 Boiler Set</b>	Boiler temperature set for program 3	Adjustable range: 65÷ 85 °C	<b>75/80</b>
	17	<b>Pr3 Tank Set</b>	Tank temperature set for program 3	Adjustable range: 55÷ 65 °C	<b>55</b>
	18	<b>Pr3 Detergent Load Time Set</b>	Activation time of the detergent doser for program 3	Detergent addition	*
			<b>Check the resulting PH using the specific tool inside the KIT100 (depending by the dishes to wash)</b>		
19	<b>Pr3 Rinse Aid Load Time Set</b>	Activation time of the rinse-aid doser for program 3	Rinse-aid addition	*	
		<b>Check the resulting PH using the specific tool inside the KIT100 (depending by the dishes to wash)</b>			
PR4 Intensivo	20	<b>Pr4 Boiler Set</b>	Boiler temperature set for program 4	Adjustable range: 65÷ 85 °C	<b>75/80</b>
	21	<b>Pr4 Tank Set</b>	Tank temperature set for program 4	Adjustable range: 55÷ 65 °C	<b>55</b>
	22	<b>Pr4 Detergent Load Time Set</b>	Activation time of the detergent doser for program 4	Detergent addition	*
			<b>Check the resulting PH using the specific tool inside the KIT100 (depending by the dishes to wash)</b>		
23	<b>Pr4 Rinse Aid Load Time Set</b>	Activation time of the rinse-aid doser for program 4	Rinse-aid addition	*	
		<b>Check the resulting PH using the specific tool inside the KIT100 (depending by the dishes to wash)</b>			
	24	<b>Pr1234 Pause Time</b>	Pause time between wash and rinse for programs 1...4: by modifying this parameter, the wash time is modified accordingly in order to leave the total cycle time unaltered	Adjustable range: 5÷ 15sec	<b>5</b>

			<p><b>It is possible to increase the washing-rising break up to 15 sec. getting, for double wash equipped dishwasher, a longer drip time of superior washing pipes and so, a better rising quality.</b></p> <p>REMARK: by increasing the break, diminishes the washing time, keeping unchanged the total cycle time.</p>		
25	Pr1234 Rinse Time	Rinse time for programs 1...4: by modifying this parameter, the wash time is modified accordingly in order to leave the total cycle time unaltered	Adjustable range: 10÷ 20sec	<b>15</b>	
		<p>Check the dynamic pressure of the supply water (while the dishwasher is filling) using the manometer provided with the KIT100 and set this parameter according to the pressure measured.</p> <p><b>15 sec. per 2.5 – 3.0 bar</b>  <b>17 sec per 2.0 – 2,4 bar</b>  <b>20 sec per 1,5 – 1.9 bar</b></p> <p><b>In this case too, by increasing or diminishing the rinsing time it is possible to decrease or increase the washing time, keeping unchanged the total cycle time.</b></p>			
<b>DRAIN PUMP</b>					<b>default</b>
26	Drain Pump	Indicates the presence of a drain pump and the enabling of the relative button for manual drainage.	Enable or disable the drain pump bush button	*	
27	Manual Drain Time	Drain time for the manual drainage programme	Push the arrows to increase or decrease the drain time	*	
28	Drain Pump Wash Loop Number	Indicates the number of activations of the drain pump during the wash cycle	3÷5 activations	<b>3</b>	
		<p><b>In order to always grant the correct water level in the tank, the drain pump make n.3 discharges (default value) of 10 sec. each one during the washing cycle. The number of those actions can be setted from 1 to 5.</b></p>			
<b>WATER SOFTENER PARAMETERS</b>					<b>default</b>
29	Regeneration Interval	Sets the number of wash cycles reached, upon which regeneration is performed automatically (parameter visible only on machines with incorporated water softener)	Regeneration time: every 1÷30 cycles	<b>3</b>	
<b>THERMOSTOP</b>					<b>default</b>
30	Thermo-Stop	Thermo - Stop enabling	Disable the Thermo-Stops for a quick testing of the dishwasher	<b>on</b>	
31	Loading Thermo-Stop	Tank Thermo-Stop enabling at the end of the dishwasher filling	Disable the Thermo-Stops for a quick testing of the dishwasher	<b>on</b>	

	32	<b>Thermo-Stop Boiler Set Delta</b>	Allows to determine the minimum temperature of the Boiler (Boiler Setting - Thermo-Stop Setting)	Pause 0÷20°C	<b>20</b>
	33	<b>Thermo-Stop Tank Set Delta</b>	Allows to determine the minimum temperature of the Tank (Tank Setting - Thermo-Stop Setting)	Pause 0÷20°C	<b>15</b>
<b>CYCLE COUNTER</b>					<b>default</b>
	34	<b>Partial Cycle Counter</b>	Displays and allows to reset the partial cycle counter.  To reset it press the “Arrow down” or “Arrow up” key and enter the password. While typing the password, one can abandon the operation via pressing and holding the “On/Off” key for 3”	Reset the partial cycle counter after every scheduled maintenance Push:  Enter the password:      	
	35	<b>Total Cycle Counter</b>	Total Cycle Counter: displays the value of the total cycle counter	It is not possible to reset	
<b>PARAMETER RESET</b>					<b>default</b>
	36	<b>Reset Default</b>	Allows to reset the default values of the parameters featured in the technical menu.  To reset press the “Arrow up” or “Arrow down” key: one is prompted to enter a password, which if typed properly, displays a brief stand-by screen, until the parameters are fully reset.  The parameters set with the machine type are reset at the relative default value according to the machine type.	Reset the parameter in case of need Push:  Enter the password      	
	37	<b>Energy saving</b>	It allows to set the time after that the dishwasher put itself in “Energy Saving” status. The boiler temperature is maintained at 60° and the tank temperature is maintained at 40° if OFF is deactivated.		<b>30</b>
	38	<b>Autoclean After Drain</b>	Enables or disables the tank self-cleaning cycle at the end of the drain cycle (only for dishwashers with drain pump installed)	<b>on</b>	<b>on</b>
	39	<b>Water Hardness</b>	It allows the hardness of the inlet water to be entered in order to automatically set the dosages for detergent and rinse-aid	<b>25°f</b>	<b>25°f</b>
	40	<b>Tank heat opened door</b>	If activated, it allows tank heating with door opened <u>For ETL Certification this parameter must be OFF</u>	Enable or disable tank heating element with door opened	<b>off</b>
	41	<b>Reset Machine Type</b>	It allows to reset the code of the dishwasher in case of incorrect insertion in the phase of installation of the electronic board	Push:  Enter the password:      	

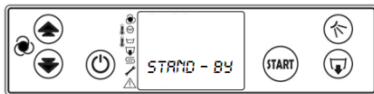
\* see default parameters



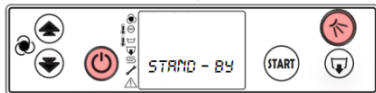
## DETERGENTS ADJUSTMENT

Adjust of detergents is carried out by accessing the technical menu with the following procedure:

- a- Switch the dishwasher off (Stand-By displayed)



- b- Press the keys at the same time



- c- Enter the password



## AUTOMATIC DETERGENTS ADJUSTMENT

**N.B. correct measurement is requested for the hardness of water that supplies the dishwasher by using our KIT100 or KIT200.**

By setting the correct value of water inlet hardness in the technical menu, it will automatically set the detergent dosage values for the various programs (initial dosages as well as detergent and rinse-aid refills).

Dosages are set according to the standard values calculated regarding the detergent recommended by the manufacturer. It is anyhow possible to adjust the said values by accessing the technical menu and manually changing the various items (for detergent, items 6-10-14-18-22 and for rinse aid, items 7-11-15-19-23).

- 1- Measure the hardness of the inlet water.
- 2- Access the menu and scroll through the items until reaching **item no. 39**.

- 3- Select the hardness of the inlet water with the use of the arrow keys



- 4- Exit the menu by pressing and holding the




key. With dishwashers having a built-in water softener, dosages are also automatically set with the regeneration frequency of the resins. This parameter can also be manually adjusted by accessing the technical menu (**item 29**). Refer to page **15**.


## RECOMMENDED DOSAGES


Hereunder is a list of detergent and rinse aid dosages in grams according to the activation times in seconds of the dosage machines.


DETERGENT					
Seconds	Grams	Seconds	Grams	Seconds	Grams
1	0,90	55	49,50	109	98,10
2	1,80	56	50,40	110	99,00
3	2,70	57	51,30	111	99,90
4	3,60	58	52,20	112	100,80
5	4,50	59	53,10	113	101,70
6	5,40	60	54,00	114	102,60
7	6,30	61	54,90	115	103,50
8	7,20	62	55,80	116	104,40
9	8,10	63	56,70	117	105,30
10	9,00	64	57,60	118	106,20
11	9,90	65	58,50	119	107,10
12	10,80	66	59,40	120	108,00
13	11,70	67	60,30	121	108,90
14	12,60	68	61,20	122	109,80
15	13,50	69	62,10	123	110,70
16	14,40	70	63,00	124	111,60
17	15,30	71	63,90	125	112,50
18	16,20	72	64,80	126	113,40
19	17,10	73	65,70	127	114,30
20	18,00	74	66,60	128	115,20
21	18,90	75	67,50	129	116,10
22	19,80	76	68,40	130	117,00
23	20,70	77	69,30	131	117,90
24	21,60	78	70,20	132	118,80
25	22,50	79	71,10	133	119,70
26	23,40	80	72,00	134	120,60
27	24,30	81	72,90	135	121,50
28	25,20	82	73,80	136	122,40
29	26,10	83	74,70	137	123,30
30	27,00	84	75,60	138	124,20
31	27,90	85	76,50	139	125,10
32	28,80	86	77,40	140	126,00
33	29,70	87	78,30	141	126,90
34	30,60	88	79,20	142	127,80
35	31,50	89	80,10	143	128,70
36	32,40	90	81,00	144	129,60
37	33,30	91	81,90	145	130,50
38	34,20	92	82,80	146	131,40
39	35,10	93	83,70	147	132,30
40	36,00	94	84,60	148	133,20
41	36,90	95	85,50	149	134,10
42	37,80	96	86,40	150	135,00
43	38,70	97	87,30	151	135,90
44	39,60	98	88,20	152	136,80
45	40,50	99	89,10	153	137,70
46	41,40	100	90,00	154	138,60
47	42,30	101	90,90	155	139,50
48	43,20	102	91,80	156	140,40
49	44,10	103	92,70	157	141,30
50	45,00	104	93,60	158	142,20
51	45,90	105	94,50	159	143,10
52	46,80	106	95,40	160	144,00
53	47,70	107	96,30	161	144,90
54	48,60	108	97,20	162	145,80


RINSE-AID			
Seconds	Grams	Seconds	Grams
1	0,08	51	4,29
2	0,17	52	4,38
3	0,25	53	4,46
4	0,34	54	4,55
5	0,42	55	4,63
6	0,51	56	4,71
7	0,59	57	4,80
8	0,67	58	4,88
9	0,76	59	4,97
10	0,84	60	5,05
11	0,93	61	5,13
12	1,01	62	5,22
13	1,09	63	5,30
14	1,18	64	5,39
15	1,26	65	5,47
16	1,35	66	5,56
17	1,43	67	5,64
18	1,52	68	5,72
19	1,60	69	5,81
20	1,68	70	5,89
21	1,77	71	5,98
22	1,85	72	6,06
23	1,94	73	6,14
24	2,02	74	6,23
25	2,10	75	6,31
26	2,19	76	6,40
27	2,27	77	6,48
28	2,36	78	6,57
29	2,44	79	6,65
30	2,53	80	6,73
31	2,61	81	6,82
32	2,69	82	6,90
33	2,78	83	6,99
34	2,86	84	7,07
35	2,95	85	7,15
36	3,03	86	7,24
37	3,11	87	7,32
38	3,20	88	7,41
39	3,28	89	7,49
40	3,37	90	7,58
41	3,45	91	7,66
42	3,54	92	7,74
43	3,62	93	7,83
44	3,70	94	7,91
45	3,79	95	8,00
46	3,87	96	8,08
47	3,96	97	8,16
48	4,04	98	8,25
49	4,12	99	8,33
50	4,21	100	8,42

	<b>GLASSWASHER</b>			
	<i>STANDARD RINSING</i>			<i>BREAK-TANK VERSION</i>
	BASKET DIM. (cm)	BOILER CAPACITY (lt.)	TANK CAPACITY (lt.)	BREAK TANK CAPACITY (lt.)
	35x35	3,2	13	N.D.
40x40	3,2	17	5,6	

	<b>UNDERCOUNTER DISHWASHER</b>			
	<i>STANDARD RINSING</i>			<i>BREAK-TANK VERSION</i>
	BASKET DIM. (cm)	BOILER CAPACITY (lt.)	TANK CAPACITY (lt.)	BOILER CAPACITY (lt.)
	45x45	7,3	20	5,6
	50x50 (230V)	7,3	26	5,6
50x50 (400V3N)	12			
50x60	7,3	29	12	

	<b>HOOD TYPE DISHWASHER</b>			
	<i>STANDARD RINSING</i>			<i>BREAK-TANK VERSION</i>
	BASKET DIM. (cm)	BOILER CAPACITY (lt.)	BASKET DIM. (cm)	BOILER CAPACITY (lt.)
	50X50	7,3	37	12
	50X60	7,3	47	12
60x67	7,3	53	12	

	<b>WAREWASHER WITH SINGLE BASKET</b>			
	<i>STANDARD RINSING</i>			<i>BREAK-TANK VERSION</i>
	BASKET DIM. (cm)	BOILER CAPACITY (lt.)	BASKET DIM. (cm)	BOILER CAPACITY (lt.)
60X67	12,6	48	13,6	

	<b>WAREWASHER WITH DOUBLE BASKET</b>			
	<i>STANDARD RINSING</i>			<i>BREAK-TANK VERSION</i>
	BASKET DIM. (cm)	BOILER CAPACITY (lt.)	BASKET DIM. (cm)	BOILER CAPACITY (lt.)
60X67	12,6+12,6	90	13,6 + 13,6	

**RECOMMENDED DETERGENT DOSAGES**

**Dishwasher without built-in water softener**

Dishwasher type	Water hardness value	litres in the tank	recommended gr/l	First Dosage	Refill 1	Refill 2	Refill 3	Refill 4	regeneration interval
	Value introduced by the client			Technical Menu Item 6	Technical Menu Item 10	Technical Menu Item 14	Technical Menu Item 18	Technical Menu Item 22	Technical Menu Item 29
35x35 glasswasher	0-15	13	0.5	7	1	3	5	7	-
	16-25		1	14	3	5	7	9	-
	26-35		2	29	6	8	10	12	-
	36-50		3	43	8	10	12	14	-
40x40 glasswasher	0-15	17	0.5	9	1	3	5	7	-
	16-25		1	19	3	5	7	9	-
	26-35		2	38	6	8	10	12	-
	36-50		3	57	8	10	12	14	-
40x40 clean water glasswasher	0-15	5.5	0.5	3	2	3	5	7	-
	16-25		1	6	3	5	7	9	-
	26-35		2	12	6	8	10	12	-
	36-50		3	18	8	10	12	14	-
50x50 glasswasher	0-15	26	0.5	14	5	7	9	11	-
	16-25		1	29	7	9	11	13	-
	26-35		2	58	9	11	13	15	-
	36-50		3	87	11	13	15	17	-
50x50 hood type dishwasher	0-15	37	0.5	21	7	9	11	13	-
	16-25		1	41	9	11	13	15	-
	26-35		1.5	62	12	14	16	18	-
	36-50		2	82	14	16	18	20	-
60x67 warewasher	0-15	48	0.5	27	9	11	13	15	-
	16-25		1	53	11	13	15	17	-
	26-35		2	107	13	15	17	19	-
	36-50		3	160	15	17	19	21	-

## RECOMMENDED DETERGENT DOSAGES

### Dishwasher with built-in water softener

RECOMMENDED DETERGENT DOSAGES									
Dishwasher with built-in water softener									
Dishwasher type	Water hardness value			First Dosage	Refill 1	Refill 2	Refill 3	Refill 4	regeneration interval
	Value introduced by the client	litres in the tank	recommended gr/l	Technical Menu Item 6	Technical Menu Item 10	Technical Menu Item 14	Technical Menu Item 18	Technical Menu Item 22	Technical Menu Item 29
35x35 glasswasher	0-15	13	0.5	7	1	3	5	7	5
	16-25			7	1	3	5	7	10
	26-35			7	1	3	5	7	15
	36-50			7	1	3	5	7	20
40x40 glasswasher	0-15	17	0.5	9	1	3	5	7	5
	16-25			9	3	5	7	9	10
	26-35			9	6	8	10	12	15
	36-50			9	8	10	12	14	20
40x40 clean water glasswasher	0-15	5.5	0.5	3	2	3	5	7	5
	16-25			3	2	3	5	7	10
	26-35			3	2	3	5	7	15
	36-50			3	2	3	5	7	20
50x50 dishwasher	0-15	26	0.5	14	5	7	9	11	5
	16-25			14	5	7	9	11	10
	26-35			14	5	7	9	11	15
	36-50			14	5	7	9	11	20
50x50 hood type dishwasher	0-15	37	0.5	21	7	9	11	13	5
	16-25			21	7	9	11	13	10
	26-35			21	7	9	11	13	15
	36-50			21	7	9	11	13	20
60x67 warewasher	0-15	48	0.5	27	9	11	13	15	5
	16-25			27	9	11	13	15	10
	26-35			27	9	11	13	15	15
	36-50			27	9	11	13	15	20

**RECOMMENDED RINSE AID DOSAGES**

**Dishwasher without built-in water softener**

Dishwasher type	Water hardness value	boiler litres	recommended gr/l	First Dosage	Refill 1	Refill 2	Refill 3	Refill 4
	Value introduced by the client			Technical Menu Item 7	Technical Menu Item 11	Technical Menu Item 15	Technical Menu Item 18	Technical Menu Item 23
35x35 and 40x40 glasswasher	0-15	3.2	0.5	19	15	20	25	30
	16-25		0.75	29	20	25	30	35
	26-35		1	38	25	30	35	40
	36-50		1.5	57	30	35	40	45
40x40 glasswasher clean water	0-15	6	0.5	36	15	20	25	30
	16-25		0.75	54	20	25	30	35
	26-35		1	71	25	30	35	40
	36-50		1.5	107	30	35	40	45
50x50 dishwasher	0-15	7.3	0.5	43	15	20	25	30
	16-25		0.75	65	20	25	30	35
	26-35		1	87	25	30	35	40
	36-50		1.5	130	30	35	40	45
50x50 hood type dishwasher	0-15	7.3	0.5	43	5	10	15	20
	16-25		0.75	65	10	15	20	25
	26-35		1	87	15	20	25	30
	36-50		1.5	130	20	25	30	35
60x67 warewasher	0-15	12.6	0.4	60	15	20	25	30
	16-25		0.4	60	20	25	30	35
	26-35		0.5	75	25	30	35	40
	36-50		0.5	75	30	35	40	45


**Dishwasher with built-in water softener**

Dishwasher type	Water hardness value	boiler litres	recommended gr/l	First Dosage	Refill 1	Refill 2	Refill 3	Refill 4
	Value introduced by the client			Technical Menu Item 7	Technical Menu Item 11	Technical Menu Item 15	Technical Menu Item 18	Technical Menu Item 23
35x35 and 40x40 glasswasher	0-50	3.2	0.5	19	15	20	25	30
40x40 glasswasher clean water	0-50	6	0.5	36	15	20	25	30
50x50 dishwasher	0-50	7.3	0.5	43	15	20	25	30
50x50 hood type dishwasher	0-50	7.3	0.5	43	5	10	15	20
60x67 warewasher	0-50	12.6	0.4	60	15	20	25	30

## WATER SOFTENER PARAMETERS

For machines with built-in water softener, run the automatic regeneration with a frequency calculated according to the water inlet hardness.

Setting the hardness of water that supplies the dishwasher in the technical menu, automatically also sets this parameter. It is still possible to change this value from the technical menu under item no. 29.


WATER SOFTENER PARAMETERS				
	29	<b>Regeneration Interval</b>	Sets the number of wash cycles reached, upon which regeneration is performed automatically (parameter visible only on machines with incorporated water softener)	Regeneration interval: every 1÷30 cycles


Inlet water hardness	Regeneration interval	Autonomy with 1 Kg of salt (cycles)
50 °f	1	70
49 °f	2	140
48 °f	3	210
47 °f	4	280
46 °f	5	350
45 °f	6	420
44 °f	7	490
43 °f	8	560
42 °f	9	630
41 °f	10	700
40 °f	11	770
39 °f	12	840
38 °f	13	910
37 °f	14	980
36 °f	15	1050
35 °f	16	1120
34 °f	17	1190
33 °f	18	1260
32 °f	19	1330
31 °f	20	1400
30 °f	21	1470
29 °f	22	1540
28 °f	23	1610
27 °f	24	1680
26 °f	25	1750
25 °f	26	1820
24 °f	27	1890
23 °f	28	1960
22 °f	29	2030
21 °f	30	2100

## SELF-CLEANING PROGRAM AT END OF OPERATION

This program is only available from firmware 1.48 and enables you to start a rinse and cleaning cycle from the washing tank of the dishwasher at the end of operation.

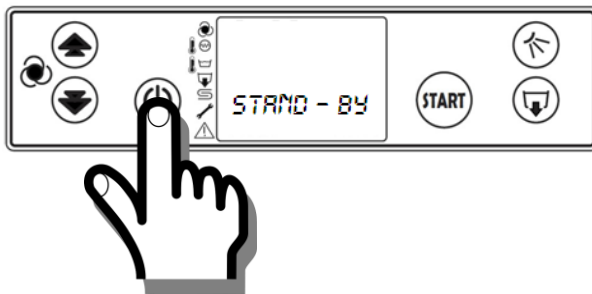
### Dishwasher with drain pump installed:

- At the end of operation, remove the overflow tube and press and hold the drain key  to drain the dishwasher.
- After draining, the self-cleaning cycle will start automatically, rinsing the tank and draining the water at regular intervals. The self-cleaning cycle lasts approximately 90 seconds, after which, the dishwasher switches off automatically.

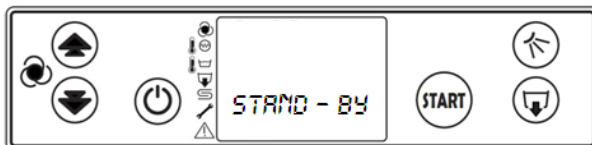
Should you wish to start another self-cleaning cycle, press and hold the drain key  with the machine off.

### Dishwasher without a drain pump installed:

- At the end of operation, switch the dishwasher off and remove the overflow tube to empty the tank.



- The message on the display will be "Autoclean"



- The message will be shown just until the complete drain of the tank, after it the autocleaning cycle will start
- At the end of the autocleaning cycle the machine will be automatically switched off.

#### ATTENTION:

If the tank will not be drained in a setted time, the autocleaning cycle will be cancelled


If to switch off the machine it will be hold for some seconds the ON/OFF button, the autocleaning cycle will not be accomplished and the display will immediately show "Stand-by"



## Deactivation of the automatic self-cleaning program for dishwashers with drain pumps installed.


The self-cleaning program starts automatically each time the dishwasher is emptied (when starting the drain cycle). It is however possible to block the automatic function from the technical menu, only keeping manual start-up active.

- Access the technical menu
- Scroll through the menu until item no. 38 “**Autoclean After Drain**”
- Set the value to OFF

After this procedure, it will only be possible to start the self-cleaning cycle with the machine off by pressing and holding the drain key .

## PROGRAMMED MAINTENANCE

Maintenance by our service centre is foreseen every **100.000** wash cycles to make sure all the critical components of the machine work properly, preventing sudden failures and lengthening dishwasher life.

When the dishwasher has reached **100.000** cycles, the LED corresponding to the  symbol switches on and the text “Maintenance Required” is displayed.



## DEFINED ALARMS

The following is a list of the defined alarms together with a short explanation. The alarms are not all self-restorable, namely they remain until the machine has been switched off and back on. Some serious alarms place the machine in “safe” mode (total block), others allow it to continue standard operation, though with limited functions.

If after having performed the appropriate checks and having switched the machine off and back on, the alarm appears again, contact our technical service.

Alarm Code	Description	Checks performed by final user	Checks performed by repair technician
ER01	<b>Tank loading timeout</b> (critical): the tank has not filled within the maximum time foreseen	Valve of water mains does not supply water. Overflow tube not inserted or inserted incorrectly. Impeller water jets obstructed. Water loading tube squashed behind the back	Solenoid valve filter obstructed. Boiler clogged with limestone. SAFE
ER02	<b>Boiler loading timeout</b> (critical): the boiler has not filled within the maximum time foreseen Managed only for machines with Break-Tank	Valve of water mains does not supply water. Water loading tube squashed behind the back	Solenoid valve filter obstructed. Break-Tank level switch blocked SAFE
ER03	<b>Tank heating timeout</b> : the tank has not heated within the maximum time foreseen. Tank heating is disabled	Overflow tube inserted incorrectly Valve of water mains does not supply water. Water loading tube squashed behind the back	Three-phase electric plug connected incorrectly Three-phase power fuses blown Tank resistance power plugs disconnected or damaged Tank resistance damaged
ER04	<b>Boiler heating timeout</b> : the boiler has not heated within the maximum time foreseen. Boiler heating is disabled	Overflow tube inserted incorrectly Valve of water mains does not supply water. Water loading tube squashed behind the back	Three-phase electric plug connected incorrectly Three-phase power fuses blown Boiler resistance power plugs disconnected or damaged Boiler resistance damaged

ER05	<b>Tank probe open:</b> the tank probe is not connected or is it interrupted. Tank heating is disabled	Request intervention of a technician	Damaged probe to be replaced
ER06	<b>Tank probe short-circuited:</b> the tank probe is short-circuited. Tank heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER07	<b>Boiler probe open:</b> the boiler probe is not connected or is it interrupted. Boiler heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER08	<b>Boiler probe short-circuited:</b> the boiler probe is short-circuited. Boiler heating is disabled	Request intervention of a technician	Damaged probe to be replaced
ER09	<b>Tank safety thermostat (critical):</b> the tank safety thermostat has opened	Request intervention of a technician	Check that the thermostat of the circuit board triggers when it reaches the set temperature. Rearm the safety thermostat SAFE
ER10	<b>Boiler safety thermostat (critical):</b> the boiler safety thermostat has opened	Request intervention of a technician	Check that the thermostat of the circuit board triggers when it reaches the set temperature. Rearm the safety thermostat
ER11	<b>Thermostop timeout:</b> the boiler did not reach the set temperature during the washing thermostop phase within the maximum time foreseen. Boiler heating is disabled.	Valve of water mains does not supply water.	Three-phase electric plug connected incorrectly Three-phase power fuses blown Boiler resistance power plugs disconnected or damaged Boiler resistance damaged
ER12	<b>Drain timeout:</b> the tank pressure switch did not open at the end of the manual drain cycle	Overflow tube inserted Drain tube squashed	Drain tube obstructed Drain pump plugs damaged Drain pump damaged
ER13	<b>Quick tank heating:</b> the tank reached the set temperature too quickly: Tank heating is disabled	Request intervention of a technician	Pressure switch blocked and heating on with tank empty. SAFE
ER14	<b>Panel disconnected (critical):</b> the panel was disconnected during machine operation and therefore it is no longer controllable by the keyboard	Request intervention of a technician	Flat cable of control panel disconnected Control panel faulty
ER18	<b>Water leakage from boiler (critical):</b> Managed only for machines with Break-Tank	Request intervention of a technician	Water leakage from Break-Tank Water leakage from Break-Tank sleeves Water leakage from rinse pump Level switch blocked
ER19	<b>Break-Tank overflow</b> prevention switch intervention. Managed only for machines with built-in Break-Tank. Check if the maximum water loading level of the break-tank located at the back of the dishwasher is exceeded.	Switch the dishwasher off and on to try loading it a second time.	Loading solenoid valve malfunction.
In the event of an anomaly, the circuit board blocks all dishwasher functions, activates the rinse pump for ~30 seconds to empty the boiler and, if the drain pump is present, the tank is drained. Once the emptying procedure has ended, a message will appear on the display "loading failure - close the water tap."			
ERR20	<b>Over temperature alarm.</b> This happens if the tank temperature reaches 80°C or if the boiler temperature reaches 95°C, error 20 appears with the message "remove the plug." All dishwasher functions are blocked and the display flashes rapidly.	Request intervention of a technician.	Tank and boiler temperature probe disconnected from its housing or inverted. Boiler contactor with glued contacts. Boiler relay on circuit board with glued contacts. Tank relay on circuit board with glued contacts.

## ERROR 20



The overheating alarm can occur when the boiler temperature is set on higher than 85°C.

In these case the can be an unexpected boiler temperature increase caused by the thermal inertia of the heating element which continues to leave heat to the water even after its switching off.

In order to avoid this problem, we suggest you to never increase the factory set boiler temperatures, better to adjust the thermostop to grant a hot rinse,

If there will be a boiler overheating, automatically the machine will provide to cool it down by starting up to 3 cold rinsing cycles of 5 seconds each paused by 10 seconds. At the end of each cooling down cycle if the temperature went again into the standard temperatures the machine will get back to its normal function, in the other case it will block and show the message "HIGH TEMPERATURE".

## WARNING

Alarm Code	Description	Checks performed by final user	Checks performed by repair technician
	<b>Maintenance required</b> (warning): Unlike other alarms, the message remains visible even when the appliance is off (by means of the specific icon) and is only reset by resetting the partial cycle counter by means of the specific menu item (see further on)	Request intervention of a technician	Programmed maintenance required Reset partial cycle count on technical menu.
	<b>Regeneration in progress</b> (warning): activated when a regeneration is performed during the wash cycle. It does not change standard machine operation in any way. Managed only for machines with built-in water softener		
	<b>Salt missing</b> (warning): activated when salt is missing. Managed only for machines with built-in water softener	Add salt to the specific tank.	

## ENERGY SAVING

After 30 minutes of inactivity, the dishwasher goes into Energy Saving mode, lowering the temperature in the tank to 40°C and the boiler to 60°C. This way, keeping the temperature lower than the work temperature enables energy saving.

To exit the Energy Saving mode, simply press any key.

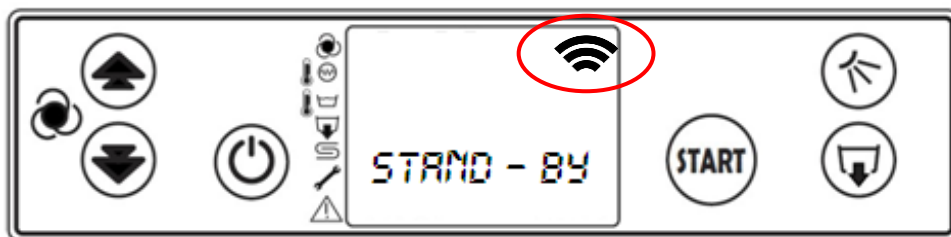
The 30-minute waiting time can be lowered from the technical menu at item no. 36 until deactivating it (refer to page

## TESTING MODE

The testing mode is an operation mode that can only be accessed by manufacturer operators to test dishwashers.

The heating function is blocked with the testing mode.

The said mode is indicated by a flashing icon in the top right corner of the display:



To exit the testing mode, press and hold the 2 arrows simultaneously with the machine on.

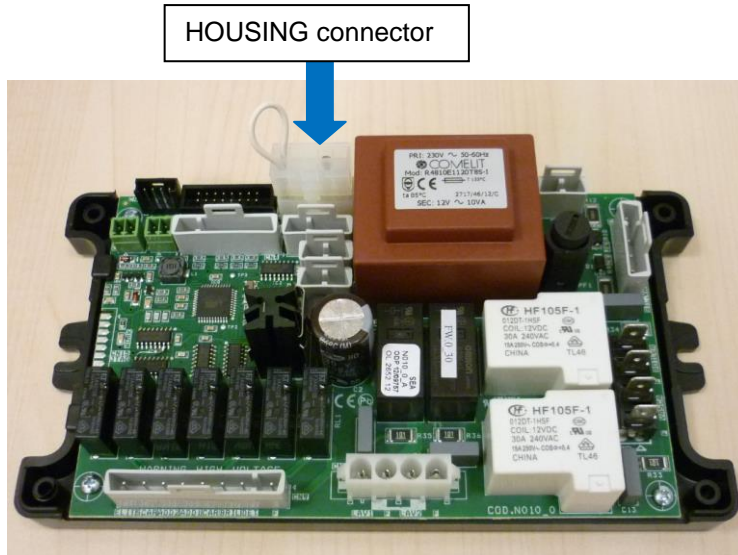
The operation must be repeated many times since each time the 2 arrow keys are pressed, you will see the progress of the test in the following sequence:

- 1- Tank Temperature test
- 2- Boiler Temperature test
- 3- Dishwasher Ready
- 4- Language Reset

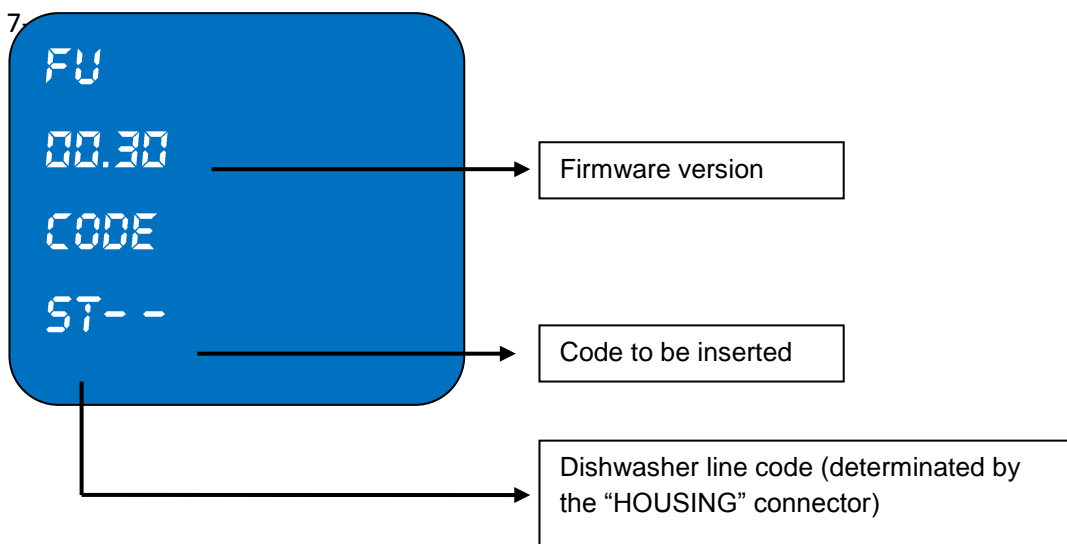
After resetting the language, the display switches off, the board is started and then the display comes on displaying the start-up sequence.

# ELECTRONIC BOARD REPLACEMENT


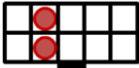
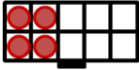
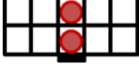
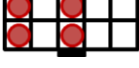
- 1- Turn off power to dishwasher
- 2- Disconnect the cables from the damaged board
- 3- Remove the "HOUSING" connector from the damaged board



- 4- Reconnect the new board (**by paying attention not to reverse the temperature probes**)
- 5- Connect the "HOUSING" connector to the new board
- 6- When the board will be turned on, a code insertion will be asked



8- In order to insert the code check the following table :

Connector	Line	Code which appears on DISPLAY
	STANDARD	ST
	BUILT-IN WATER SOFTENER	AD
	BREAK-TANK	BT
	WATER CHANGE	EC
	FULL	FL

Code to be inserted according to the dishwasher model :

Dishwasher typology	Code to be selected
<b>GLASSWASHER</b> Basket 35x35 and 40x40	10
<b>FRONT-LOADING DISHWASHER</b> Basket 45x45, 50x50, 50x60	20
<b>WAREWASHER</b> Basket 60x67	30
<b>HOOD TYPE DISHWASHER</b>	40

The code will be inserted manually on occasion of the first switch on by selecting the **arrows**



and confirming by keeping pushed the **ON/OFF** push-button

