

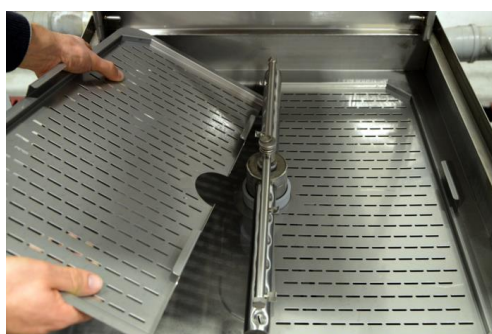
Dear Customers,

We are pleased to introduce our new range of dishwashers with circuit board and backlit display.

Thanks to our continuous evolution in the research for ever more innovative washing systems, we created the **EWC System - Electronic Washing Control System**, the new electronic control system for professional washing management that, starting from January 2013, we have included as standard **with no increase in price** on all models of our **KORAL, ELITECH, SOFT** and **ECOCLEAN** ranges, except for the **CUBE** range, which will remain electromechanical.

The **EWC System** offers a number of advantages, which you can find below.

Please bear in mind that your orders will normally be processed by entering the relevant new electronic codes. The dishwashers in the electromechanical version **must be expressly requested**.



INTRODUCTION



for adequate measurement and calibration it requires the instruments contained in kit100



All the parameters set by default have been defined according to the characteristics of our detergent and refer to the water hardness indicated in the tables.

With the use of different detergents and different conditions of use requires a new dosage calibration.

All the dishwasher parameters must be set by the technician when the machine is installed, by accessing the technical menu.

On pages **19-21-22** you will find our recommendations according to the detergent and water hardness.

Other parameters, (temperatures, pause time, rinse time), must be set by the technician when the dishwasher is installed, according to the conditions at the customer's premises (water pressure, water hardness, type of dishes to be washed)

The main settings are:

DETERGENT AND RINSE AID SETTING

This must be set taking into account:

- density of the detergent used: the dosage recommended for our detergent is 0.5gr/l for soft water
- water quality: hard or soft (see tables on page **21 – 23** referring to our detergent)
- water pressure: it is not important in terms of the detergent and rinse aid setting but it is important to check the duration of the rinse time - section 25 of the manual on page **15**.

TEMPERATURES

Tank → by default all the programs are calibrated at 55°C

Boiler → by default the temperatures are diversified according to the cycle selected, i.e.:

- | | |
|----------------|---|
| • 90 sec 75°C | } for speed but low drying quality |
| • 120 sec 77°C | |
| • 150 sec 80°C | } for better drying quality but with a longer cycle |
| • 180 sec 80°C | |

(Refer to the parameter table on page **27**)

WASH/RINSE PAUSE

The pause between the wash and rinse cycle can be varied by setting parameter no. 24 of the technical menu

By default the pause is set at 5 sec., but it can be increased up to 15 sec., achieving, for dishwashers with a double wash cycle, greater “dripping” time of the upper wash pipes and therefore greater rinsing quality.

Attention: by increasing the pause time, the wash time is shortened, maintaining the total cycle time unvaried.

Example:

The 90 sec. wash cycle by default consists of these times:

70 sec. wash

5 sec. pause

15 sec. rinse

By increasing the pause between the wash and rinse cycle from 5 sec. to 10 sec. the result will be:

60 sec. wash
10 sec. pause
15 sec. rinse

RINSE TIME

The rinse cycle time can also be varied, by setting parameter no. 25 of the technical menu.

Even in this case, by increasing or decreasing the rinse time, the wash cycle time is increased or increased, maintaining the total cycle time unvaried.

WATER PRESSURE and recommended rinse time

15 sec. for 2.5 – 3.0 bar

17 sec for 2.0 – 2,4 bar

20 sec for 1.5 – 1.9 bar (recommended only for warewashers fitted with boilers wish greater capacity)

DRAIN PUMP

Items 26-27-28 allow you to enable and customise the parameters relating to the operation of the drain pump:

26- Drain pump enabling: for the machines purchased with the drain pump already installed, enabling is already active; for the machines on which a drain kit is installed at a later stage, enabling is required.

27- Drain time for the manual drain program: it allows you to set the duration of the manual tank drainage. At the end of the drain cycle, the dishwasher switches off automatically.

28- Number of activations of the drain pump during the wash cycle: in order to always ensure the correct water level in the tank, the pump drains 3 times (default value) for 10 sec. each time during the wash cycle. The number of these interventions can be set between 1 and 5.

THERMO-STOP – DELTA T

As standard the machines feature the Thermo-stop function that ensures washing and rinsing at a minimum temperature and which can be set from the technical menu (items no.32 tank DELTA T and 33 boiler DELTA T).

- Minimum boiler temperature = boiler temperature – boiler DELTA T
- Minimum tank temperature = tank temperature – tank DELTA T

If the boiler temperature drops below the minimum temperature set, the dishwasher extends the wash cycle until it reaches the minimum temperature, therefore depending on whether the customer wants the wash to be faster or slower the DELTA T can be varied.

THERMO-STOP DELTA T high, (E.G.: 20°C)

greater tolerance, less accuracy and lower quality,

boiler at 80°C – 20°C (delta t) = authorises to rinse up to 60°C

THERMO-STOP DELTA T low, (E.G.:5°C)

lower tolerance, more accuracy and better rinsing quality (warmer)

boiler at 80°C – 5°C (delta t) = authorises to rinse up to 75°C




These adjustments can only be made during installation by a technician, who knows the type of dishes to be washed, the detergent, the quality that the customer wants (speed or quality, lukewarm plates or hot plates).

CIRCUIT BOARD START-UP

Upon installation some simple steps need to be done:

Language selection:






- 1- Select the language with the arrows  
- 2- 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?







- 1- With the arrows   select YES or NO and confirm with the key 
- 2- If NO is confirmed, the program exits
- 3- If YES is confirmed the following message appears

INSERT THE STRAWS IN THE TANKS AND CONFIRM

- 4- Confirm by pressing the key 
- 5- 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 OPERATION OVERVIEW



P180	Program selected / Seconds countdown
Pronto	Dishwasher status
TNK 55°C	Tank Temperature
BLR 83°C	Boiler Temperature
 ON/OFF	SWITCH-ON / SWITCH-OFF
 START	WASH CYCLE START
 "UP" arrow	WASH TIME SELECTION <i>(see default parameter table)</i>
 "DOWN" arrow	WASH TIME SELECTION <i>(see default parameter table)</i>
 MANUAL RINSE	ADDITIONAL RINSE CYCLE START <i>(15 sec.)</i>
 MANUAL DRAIN <i>(if drain pump present)</i>	REMOVE OVERFLOW VALVE AND START DISHWASHER DRAINAGE <i>(dishwasher with optional extra installed only)</i>

DETERGENT AND RINSE AID SETTING






- 1- Measure the hardness of the dishwasher inlet water
- 2- Refer to the recommended dosage table (see page 21 for the detergent and 22 for the rinse aid)
- 3- Find the recommended dosages (first dosage and refill) for the dishwasher to be programmed according to:
 - a- Dishwasher basket size (for example 35x35)
 - b- Water hardness in inlet (for example 23°F)
 - c- Detergent and rinse aid recommended dosage (see bottle label)



Water hardness °F	Regeneration interval
0÷15 °F	0.5
15÷25 °F	1
26÷35 °F	2
>35	3

- 4- Access the technical menu by following the procedure:



- 5- Proceed with  up to **item 4** and press  to fill the yellow straw with detergent
- 6- Proceed with  up to **item 5** and press  to fill the blue straw with rinse aid
- 7- Proceed with  up to **item 6** and set the initial detergent seconds (refer to table on page 21)

THE DOSAGES ARE CHOSEN ACCORDING TO:


- d- Dishwasher basket size (for example 35x35)
- e- Water hardness in inlet (for example 23°F)

DOSAGGI CONSIGLIATI DETERGENTE							
DIM. CESTO	CAPACITA' VASCA	Durezza acqua °F	g/l consigliato	primo dosaggio (g)	Primo Dosaggio (sec)	Ripristino (g)	Ripristino (sec)
35x35	13	0-15 °F	0,50	7	7	1	1
		15-25 °F	1	13	14	3	3
		25-35 °F	2	26	39	5	5
		>35 °F	3	39	43	8	8

Basket size

Water hardness

Initial dosage

- 8- Proceed with  up to **item 7** and set the initial rinse aid seconds (refer to table on page 22)

THE DOSAGES ARE CHOSEN ACCORDING TO:

- a- Dishwasher basket size (for example 35x35)
- b- Water hardness in inlet (for example 23°F)

DOSAGGI CONSIGLIATI BRILLANTANTE							
DIM. CESTO	CAPACITA' BOILER	Durezza acqua °F	g/l consigliato	primo dosaggio (g)	Primo Dosaggio (sec)	Ripristino (g)	Ripristino (sec)
35x35	3,20	0-15 °F	0,5	1,6	16	1	11
		15-25 °F	0,75	2,4	28	2	23
		25-35 °F	1	3,2	31	3	35
		>35 °F	1,5	4,8	56	3	35

Basket size

Water hardness

Initial dosage

- 9- From **item 8** to **item 23** you can edit the parameters of the 4 cycles (boiler and tank temperatures, detergent and rinse aid dosage). **THE DURATION OF THE CYCLE CANNOT BE CHANGED.**

Adjust the detergent and rinse aid refills also according to the tables on page 21 and 22

SOFT PROGRAM PR1

10	Pr1 Detergent Load Time Set	DETERGENT REFILL FOR PROGRAM PR1 (see detergent table)
-----------	------------------------------------	---

DOSAGGI CONSIGLIATI DETERGENTE							
DIM. CESTO	CAPACITA' VASCA	Durezza acqua °F	g/l consigliato	primo dosaggio (g)	Primo Dosaggio (sec)	Ripristino (g)	Ripristino (sec)
35x35	13	0-15 °F	0,50	7	7	1	1
		15-25 °F	1	13	14	3	3
		25-35 °F	2	26	28	5	5
		>35 °F	3	39	43	8	8

Basket size

Water hardness

Refill at each rinse

11	Pr1 Rinse Aid Load Time Set	RINSE AID REFILL FOR PROGRAM PR1 (see rinse aid table)
-----------	------------------------------------	---

DOSAGGI CONSIGLIATI BRILLANTANTE							
DIM. CESTO	CAPACITA' BOILER	Durezza acqua °F	g/l consigliato	primo dosaggio (g)	Primo Dosaggio (sec)	Ripristino (g)	Ripristino (sec)
35x35	3,20	0-15 °F	0,5	1,6	18	1	11
		15-25 °F	0,75	2,4	28	2	23
		25-35 °F	1	3,2	37	3	35
		>35 °F	1,5	4,8	56	3	35

Basket size

Water hardness

Refill at each rinse

NORMAL SHORT PROGRAM PR2

14	Pr2 Detergent Load Time Set	DETERGENT REFILL FOR PROGRAM PR2 (see detergent table)
15	Pr2 Rinse Aid Load Time Set	RINSE AID REFILL FOR PROGRAM PR2 (see rinse aid table)

NORMAL PROGRAM PR3

18	Pr3 Detergent Load Time Set	DETERGENT REFILL FOR PROGRAM PR3 (see detergent table)
19	Pr3 Rinse Aid Load Time Set	RINSE AID REFILL FOR PROGRAM PR3 (see rinse aid table)

INTENSIVE PROGRAM PR4





22	Pr4 Detergent Load Time Set	DETERGENT REFILL FOR PROGRAM PR4 (see detergent table)
23	Pr4 Rinse Aid Load Time Set	RINSE AID REFILL FOR PROGRAM PR4 (see rinse aid table)





10- THERMO-STOP: items 32 and 33:





if the client wants greater washing and rinsing quality, set the Δt at 10°C





if the client wants greater speed leave the default setting

WASH TIME OVERVIEW

GLASSWASHER BASKET 35x35 AND 40x40								
Cycle		Cycle characteristics					Minimum temperature (°C)	
		Cycle duration	Cycle recommended for...	Detergent Load per cycle	Rinse aid Load per cycle	PH recommended	Thermostop Boiler	Thermostop Tank
<i>Cycle SOFT</i>		90	10°F	3	5	10.0	55	40
<i>STANDARD Cycle</i>		120	15°F	5	10	10.5	57	40
<i>Cycle PLUS</i>		150	20°F	7	15	10.8	60	40
<i>INTENSIVE Cycle</i>		180	25°F	9	15	11.0	60	40

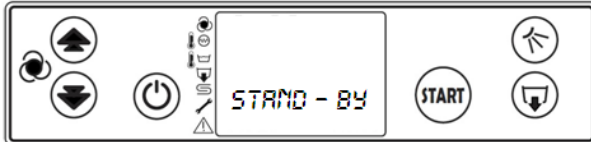
DISHWASHER WITH FRONT DOOR BASKET 45x45 – 50x50 – 50x60								
Cycle		Cycle characteristics					Minimum temperature (°C)	
		Cycle duration	Cycle recommended for...	Detergent Load per cycle	Rinse aid Load per cycle	PH recommended	Thermostop Boiler	Thermostop Tank
<i>Cycle SOFT</i>		90	10°F	3	5	10.0	55	40
<i>STANDARD Cycle</i>		120	15°F	5	10	10.5	57	40
<i>Cycle PLUS</i>		150	20°F	7	20	10.8	60	40
<i>INTENSIVE Cycle</i>		180	25°F	9	20	11.0	60	40

HOOD TYPE DISHWASHER								
Cycle		Cycle characteristics					Minimum temperature (°C)	
		Cycle duration	Cycle recommended for...	Detergent Load per cycle	Rinse aid Load per cycle	PH recommended	Thermostop Boiler	Thermostop Tank
<i>Cycle SOFT</i>		60	10°F	5	10	10.0	60	40
<i>STANDARD Cycle</i>		90	15°F	7	10	10.5	60	40
<i>Cycle PLUS</i>		120	20°F	9	15	10.8	63	40
<i>INTENSIVE Cycle</i>		240	25°F	12	10	11.5	63	40

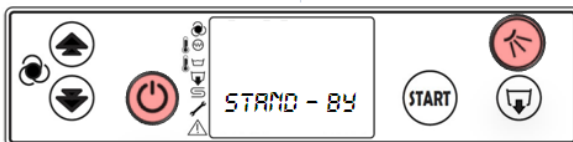
WAREWASHER								
Cycle		Cycle characteristics					Minimum temperature (°C)	
		Cycle duration	Cycle recommended for...	Detergent Load per cycle	Rinse aid Load per cycle	PH recommended	Thermostop Boiler	Thermostop Tank
<i>Cycle SOFT</i>		120	10°F	5	15	10.5	60	40
<i>STANDARD Cycle</i>		240	15°F	7	20	10.8	60	40
<i>Cycle PLUS</i>		360	20°F	9	20	11.0	65	40
<i>INTENSIVE Cycle</i>		540	25°F	12	20	11.0	65	40

TECHNICAL MENU (firmware 30)

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



- 2- Press the keys at the same time














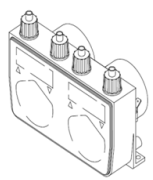







- 3- Enter the password










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

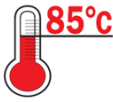
















To navigate the menu use the following keys:

	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)  	°C
	3	End Cycle Backlight Blink	Activates the flashing of the display backlight to signal the end of the work cycle. If disabled, at the end of the cycle the backlight always stays active and only the line indicating the selected cycle flashes.	Activate or disable the flashing with the arrows (UP or DOWN)  	on
DETERGENT AND RINSE AID FILLING					default
	4	Manual Detergent Doser	Allows manual activation of the detergent doser.	By pressing the UP arrow key  the doser is activated for 50 seconds	
	This function is only used the first time the dishwasher is installed to refill the straw with detergent				
	5	Manual Rinse Aid Doser	It allows manual activation of the rinse-aid doser	By pressing the UP arrow key  the doser is activated for 300 seconds	
	This function is only used the first time the rinse aid				
	6	Load Detergent Time Set	It allows you to adjust the initial load of detergent	 	*
	Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)				
	7	Load Rinse Aid Time Set	It allows you to adjust the initial load of rinse aid	 	*
Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)					
WASH CYCLE CUSTOMISATION					default
	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 refill	*
	Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)				
11	Pr1 Rinse Aid Load Time Set	Activation time of the rinse-aid doser for program 1	Rinse aid refill	*	


			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)		
PR2 Normal Short 	12	Pr2 Boiler Set	Boiler temperature set for program 2	Adjustable range: 65÷ 85 °C	77/80
	13	Pr2 Tank Set	Tank temperature set for program 2	Adjustable range: 55÷ 65 °C	55
	14	Pr2 Detergent Load Time Set	Activation time of the detergent doser for program 2	Detergent refill	*
			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)		
15	Pr2 Rinse Aid Load Time Set	Activation time of the rinse-aid doser for program 2	Rinse aid refill	*	
		Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)			
PR3 Normal 	16	Pr3 Boiler Set	Boiler temperature set for program 3	Adjustable range: 65÷ 85 °C	80/85
	17	Pr3 Tank Set	Tank temperature set for program 3	Adjustable range: 55÷ 65 °C	55
	18	Pr3 Detergent Load Time Set	Activation time of the detergent doser for program 3	Detergent refill	*
			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)		
19	Pr3 Rinse Aid Load Time Set	Activation time of the rinse-aid doser for program 3	Rinse aid refill	*	
		Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)			
PR4 Intensive 	20	Pr4 Boiler Set	Boiler temperature set for program 4	Adjustable range: 65÷ 85 °C	80/85
	21	Pr4 Tank Set	Tank temperature set for program 4	Adjustable range: 55÷ 65 °C	55
	22	Pr4 Detergent Load Time Set	Activation time of the detergent doser for program 4	Detergent refill	*
			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)		
23	Pr4 Rinse Aid Load Time Set	Activation time of the rinse-aid doser for program 4	Rinse aid refill	*	
		Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)			
	24	Pr1234 Pause Time	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	5

			<p>The pause between the wash and rinse cycle can be increased up to 15 sec., achieving, for dishwashers with a double wash cycle, greater “dripping” time of the upper wash pipes and therefore greater rinsing quality..</p> <p>NOTE: by increasing the pause, the wash time decreases while leaving the total cycle time unaltered</p>		
	25	Pr1234 Rinse Time	<p>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</p> <p>Adjustable range: 10÷ 20sec</p> <p>15</p> <p>Check the dynamic pressure of the supply water (while the dishwasher is loading) using the pressure gauge contained in KIT100 and set the parameter according to the pressure measured:</p> <p>15 sec. for 2.5 – 3.0 bar 17 sec for 2.0 – 2,4 bar 20 sec for 1.5 – 1.9 bar</p> <p>Even in this case, by increasing or decreasing the rinse time, the wash cycle time is increased or increased, maintaining the total cycle time unvaried</p>		
DRAIN PUMP					default
	26	Drain Pump	It allows you to enable the relative manual drain button	Activate or disable the manual drain button, using the arrows	
	27	Manual Drain Time	Drain time for the manual drainage programme	Increase or decrease the drain time with the arrows	
	28	Drain Pump Wash Loop Number	<p>Indicates the number of activations of the drain pump during the wash cycle</p> <p>3÷5 interventions</p> <p>3</p> <p>In order to always ensure the correct water level in the tank, the pump drains 3 times (default value) for 10 sec. each time during the wash cycle. The number of these interventions can be set between 1 and 5.</p>		
WATER SOFTENER PARAMETERS					default
	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 interval: every 1÷5 cycles	3
THERMO - STOP					default
	30	Thermo–Stop	Boiler thermo-stop enabling	Disable the thermo–stops for quick dishwasher testing	on
	31	Loading Thermo–Stop	Tank thermo–stop activation when dishwasher loading is complete	Disable the thermo–stops for quick dishwasher testing	on


	32	Thermo-Stop Boiler Set Delta	Allows you to determine the minimum temperature of the boiler (Boiler set-Thermo-stop set)	Interval 0÷20°C	20
	33	Thermo-Stop Tank Set Delta	Allows you to determine the minimum temperature of the tank (Tank set-Thermo-stop set)	Interval 0÷20°C	15
CYCLE COUNTER					default
	34	Partial Cycle Counter	<p>Displays and allows to reset the partial cycle counter. To reset it press the “Arrow down” or “Arrow up” key and enter the password</p> <p>When entering the password you can cancel the operation by holding and pressing the “On/Off” key for 3”</p>	<p>Rest the partial cycle counter after performing scheduled maintenance Press</p> <p> enter the password</p> <p>     </p>	
	35	Total Cycle Counter	Total Cycle Counter: displays the value of the total cycle counter	It cannot be reset	
PARAMETER RESET					default
	36	Reset Default	<p>Allows to reset the default values of the <i>parameters featured in the technical menu</i>. 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.</p>	<p>Parameter reset if required. Press:</p> <p> enter the password</p> <p>     </p>	
	37	Energy saving	<p>Allows you to set the time after which the dishwasher goes into “Energy Saving” status The temperature of the boiler is kept at 60°C and the temperature of the tank is kept at 40°C. If it is OFF it is disabled.</p>		30
* see parameter table					
	<p>After having changed the parameters press and hold the  key to store the data and exit the menu.</p>				

PROGRAMMED MAINTENANCE

Maintenance by our service centre is required every **20,000** 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 **20,000** cycles, the LED corresponding to the symbol  switches on and the text **"Maintenance Required"** is displayed.



When the 20,00 cycles have elapsed, the display stays on even with the dishwasher in stand-by and the LED of the following icon  is activated
TECHNICAL INTERVENTION REQUIRED: perform a general check and access the technical menu to reset the cycle counter (item 34 of the menu)



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	Tank loading timeout (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	Boiler loading timeout (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	Tank heating timeout : 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 SAFE
ER04	Boiler heating timeout : 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 SAFE
ER05	Tank probe open : the tank probe is not connected or it is interrupted. Tank heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER06	Tank probe short-circuited : the tank probe is short-circuited. Tank heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE

ER07	Boiler probe open: the boiler probe is not connected or it is interrupted. Boiler heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER08	Boiler probe short-circuited: the boiler probe is short-circuited. Boiler heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER09	Pump safety thermostat (critical): the pump safety thermostat has opened	Request intervention of a technician	Let the wash pump cool down Check that there is no interrupted phase
ER10	Boiler safety thermostat (critical): 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 Check that there is no interrupted phase
ER11	Thermostop timeout: the boiler did not reach the set temperature during the washing thermostat 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 SAFE
ER12	Drain timeout: : 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 SAFE
ER13	Quick tank heating: 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	Panel disconnected (critical): the panel was disconnected during machine operation and therefore it is no longer controllable via the keyboard	Request intervention of a technician	Flat cable of control panel disconnected Control panel faulty SAFE
ER18	Water leakage from boiler (critical): 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 SAFE

WARNINGS


Alarm Code	Description	Checks performed by final user	Checks performed by repair technician
	Maintenance required (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	Request intervention of a technician	Programmed maintenance required Reset partial cycle count on technical menu.
	Regeneration in progress (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		
	Salt missing (warning): activated when salt is missing. Managed only for machines with built-in water softener	Add salt to the specific tank.	


DETERSIVO / DETERGENT


<i>Seconds</i>	<i>Grams</i>	<i>Seconds</i>	<i>Grams</i>	<i>Seconds</i>	<i>Grams</i>
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


BRILLANTANTE / RINSE AID


<i>Seconds</i>	<i>Grams</i>	<i>Seconds</i>	<i>Grams</i>
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

	GLASSWASHER			
	STANDARD RINSE			VERSION WITH BREAK-TANK
	BASKET DIM. (cm)	BOILER CAPACITY (l)	TANK CAPACITY (l)	BOILER CAPACITY (l)
	35x35	3.2	13	N.A.
	40x40	3.2	17	5.6

	DISHWASHER WITH FRONT DOOR				
	STANDARD RINSE			VERSION WITH BREAK-TANK	
	BASKET DIM. (cm)	BOILER CAPACITY (l)	TANK CAPACITY (l)	BOILER CAPACITY (l)	
		45x45	7.3	20	5.6
		50x50 (230V)	7.3	26	5.6
	50x50 (400V3N)	12			
	50x60	7.3	29	12	

	HOOD TYPE DISHWASHERS				
	STANDARD RINSE			VERSION WITH BREAK-TANK	
	BASKET DIM. (cm)	BOILER CAPACITY (l)	TANK CAPACITY (l)	BOILER CAPACITY (l)	
		50X50	7.3	37	12
		50X60	7.3	47	12
	60x67	7.3	53	12	

	SINGLE BASKET WAREWASHER			
	STANDARD RINSE			VERSION WITH BREAK-TANK
	BASKET DIM. (cm)	BOILER CAPACITY (l)	TANK CAPACITY (l)	BOILER CAPACITY (l)
	60X67	12.6	48	13.6

	DOUBLE BASKET WAREWASHER			
	STANDARD RINSE			VERSION WITH BREAK-TANK
	BASKET DIM. (cm)	BOILER CAPACITY (l)	TANK CAPACITY (l)	BOILER CAPACITY (l)
	60X67	12.6+12.6	90	13.6 + 13.6

RECOMMENDED DETERGENT DOSAGES

BASKET DIM.	TANK CAPACITY	Water hardness °F	recommended g/l	first dosage (g)	First Dosage (sec)	Refill (g)	Refill (sec)
35x35	13	0-15 °F	0.50	7	7	1	1
		15-25 °F	1	13	14	3	3
		25-35°F	2	26	28	5	5
		>35°F	3	39	43	8	8
40x40	17	0-15 °F	0.5	9	9	3	3
		15-25 °F	1	17	18	3	3
		25-35°F	2	34	37	5	5
		>35°F	3	51	56	8	8
45x45	20	0-15 °F	0.5	10	11	3	3
		15-25 °F	1	20	22	3	3
		25-35°F	2	40	44	5	5
		>35°F	3	60	66	8	8
50x50	26	0-15 °F	0.5	13	14	3	3
		15-25 °F	1	26	28	3	3
		25-35°F	2	52	57	5	5
		>35°F	3	78	86	8	8
50x50 hood	37	0-15 °F	0.5	19	21	3	3
		15-25 °F	1	37	33	3	3
		25-35°F	2	74	66	5	5
		>35°F	3	111	99	8	8
50x60	29	0-15 °F	0.5	15	16	3	3
		15-25 °F	1	29	32	3	3
		25-35°F	2	58	64	5	5
		>35°F	3	87	96	8	8
60x67	53	0-15 °F	0.5	17	18	3	3
		15-25 °F	1	53	58	3	3
		25-35°F	2	106	117	5	5
		>35°F	3	145	161	8	8
60x67 hood	53	0-15 °F	0.5	27	29	3	3
		15-25 °F	1	53	58	3	3
		25-35°F	2	106	117	5	5
		>35°F	3	145	161	8	8
2 baskets 60x67	90	0-15 °F	0.5	45	49	3	3
		15-25 °F	1	90	99	3	3
		25-35°F	2	145	161	5	5
		>35°F	3	145	161	8	8

RECOMMENDED RINSE AID DOSAGES


BASKET DIM.	BOILER CAPACITY	Water hardness °F	recommended g/l	first dosage (g)	First Dosage (sec)	Refill (g)	Refill (sec)
35x35	3.20	0-15 °F	0.5	1.6	18	1	11
		15-25 °F	0.75	2.4	28	2	23
		25-35°F	1	3.2	37	3	35
		>35°F	1.5	4.8	56	3	35
40x40	3.20	0-15 °F	0.5	1.6	18	1	11
		15-25 °F	0.75	2.4	28	2	23
		25-35°F	1	3.2	37	3	35
		>35°F	1.5	4.8	56	3	35
45x45	7.00	0-15 °F	0.5	3.5	41	1	11
		15-25 °F	0.75	5.2	61	2	23
		25-35°F	1	7	82	3	35
		>35°F	1.5	10.5	124	3	35
50x50	7.00	0-15 °F	0.5	3.5	41	1	11
		15-25 °F	0.75	5.2	61	2	23
		25-35°F	1	7	82	3	35
		>35°F	1.5	10.5	124	3	35
50x60	7.00	0-15 °F	0.5	3.5	41	1	11
		15-25 °F	0.75	5.2	61	2	23
		25-35°F	1	7	82	3	35
		>35°F	1.5	10.5	124	3	35
60x67	12.60	0-15 °F	0.5	6.5	77	1	11
		15-25 °F	0.75	5.2	61	2	23
		25-35°F	1	8	94	3	35
		>35°F	1.5	13	154	3	35

RESIN REGENERATION FREQUENCY

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

To adjust the regeneration frequency set parameter 29 in the technical menu

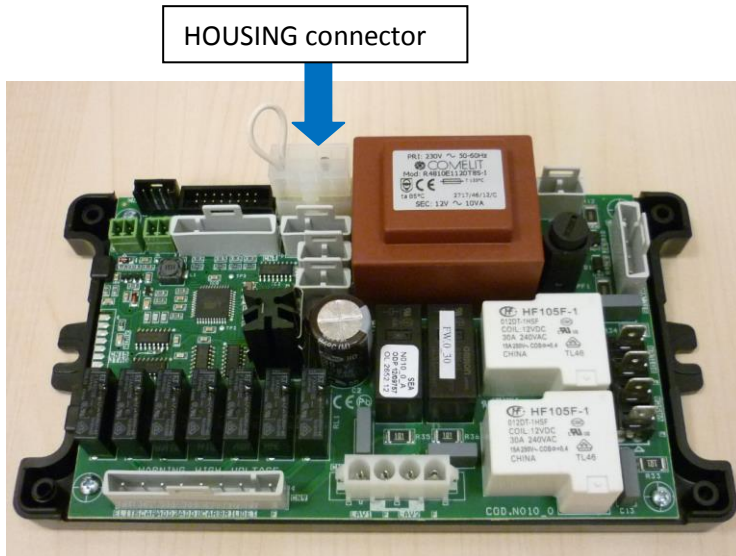
WATER SOFTENER PARAMETERS

	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 interval: every 1÷5 cycles
--	-----------	------------------------------	--	---

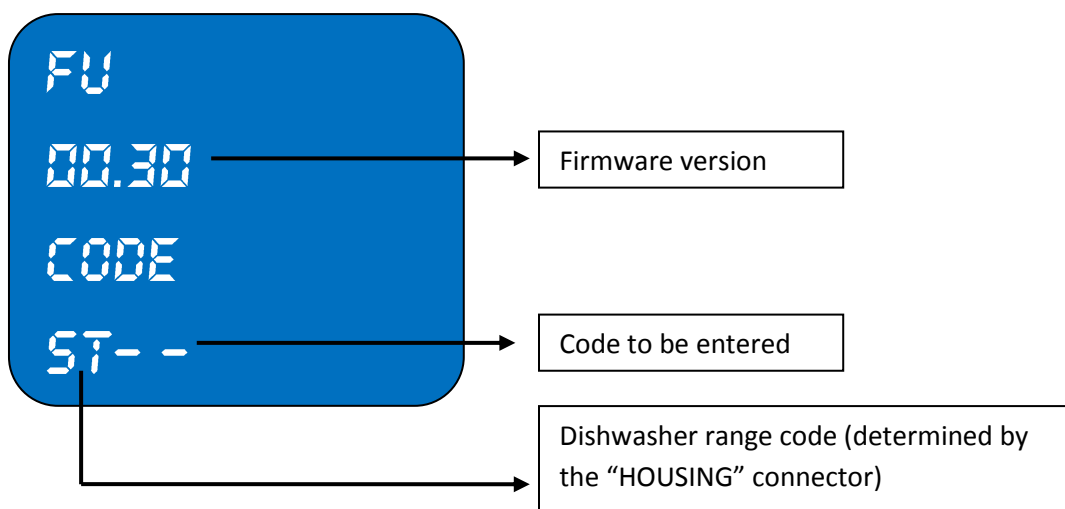
Inlet water hardness	Regeneration interval	Outlet water hardness
0÷20 °F	Not recommended for dishwasher with water softener	n.a.
20÷25 °F	5	~ 5°F
26÷30 °F	4	~ 6÷10°F
31÷35 °F	3	~ 11÷15°F
>36°F	2	~16 °F

CIRCUIT BOARD REPLACEMENT



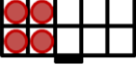
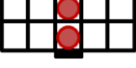
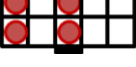
- 1- Disconnect the dishwasher from the mains
- 2- Disconnect the wires from the damaged circuit board
- 3- Remove the “HOUSING” connector from the damaged circuit board



- 4- Reconnect the new circuit board (**be careful not to invert the temperature probes**)
- 5- Connect the “HOUSING” connector to the new circuit board
- 6- When the circuit board is switched on again, you will be prompted to enter a code






- 7- To enter the code refer to the table below

Connector	Range	Code that appears on DISPLAY
	STANDARD	ST
	BUILT-IN WATER SOFTENER	AD
	BREAK-TANK	BT
	WATER REFILL	EC
	FULL	FL

Code to be entered according to the model of the dishwasher

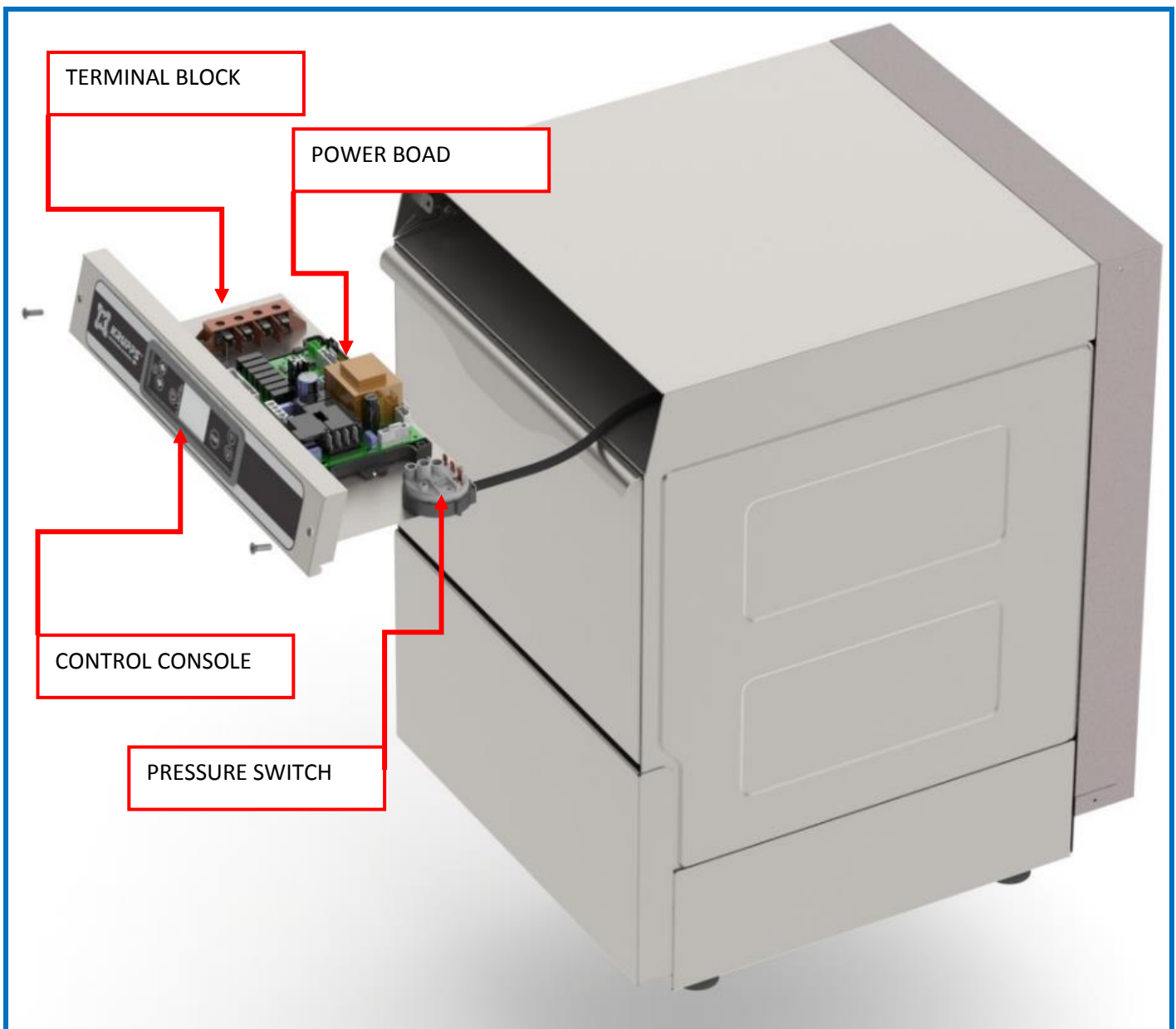
Dishwasher type	Code to be selected
GLASSWASHER Basket 35x35 and 40x40	10
DISHWASHER WITH FRONT DOOR Basket 45x45, 50x50, 50x60	20
WAREWASHER Basket 60x67	30
HOOD TYPE DISHWASHERS	40

The code is entered manually when the dishwasher is switched on for the first time by using the **arrows**  

and confirming by pressing and holding the **ON/OFF** button 

TECHNICAL SPECIFICATIONS

PROBE	Ø 4.6 mm 2x0.25 mm ² - NTC
CONTROL CONSOLE IP	IP54



DEFAULT PARAMETERS

GLASSWASHER BASKET 35x35 AND 40x40

Times (sec)									Temperatures (°C)			
Cycle	Total Seconds	Wash	Pause	Rinse	Initial Detergent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Thermo-Stop	Tank Thermo-Stop
1	90	70	5	15	20	25	3	5	75	55	55	40
2	120	100	5	15	20	25	5	10	77	55	57	40
3	150	130	5	15	20	25	7	15	80	55	60	40
4	180	160	5	15	20	25	9	15	80	55	60	40

DISHWASHER BASKET 45x45, 50x50, 50x60

Times (sec)									Temperatures (°C)			
Cycle	Total Seconds	Wash	Pause	Rinse	Initial Detergent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Thermo-Stop	Tank Thermo-Stop
1	90	70	5	15	30	40	3	10	75	55	55	40
2	120	100	5	15	30	40	5	15	77	55	57	40
3	150	130	5	15	30	40	7	20	80	55	60	40
4	180	160	5	15	30	40	9	20	80	55	60	40

HOOD TYPE DISHWASHERS

Times (sec)									Temperatures (°C)			
Cycle	Total Seconds	Wash	Pause	Rinse	Initial Detergent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Thermo-Stop	Tank Thermo-Stop
1	60	40	5	15	40	40	5	10	80	55	60	40
2	90	70	5	15	40	40	7	10	80	55	60	40
3	120	100	5	15	40	40	9	15	83	55	63	40
4	240	220	5	15	40	40	12	10	83	55	63	40

WAREWASHER

Times (sec)									Temperatures (°C)			
Cycle	Total Seconds	Wash	Pause	Rinse	Initial Detergent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Thermo-Stop	Tank Thermo-Stop
1	120	100	5	15	90	40	5	15	80	55	60	40
2	240	220	5	15	90	40	7	20	80	55	60	40
3	360	340	5	15	90	40	9	20	85	55	65	40
4	540	520	5	15	90	40	12	20	85	55	65	40