



INSTALLATION INSTRUCTIONS

	For adequate measurement and calibration it requires the instruments contained in kit100 - kit200
	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 120-122-123 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 117-118 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 111.

TEMPERATURES

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

Boiler > 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 122)

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 with 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.

TERMOSTOP – 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.

TERMOSTOP DELTA T high, (ES: 20°C)

greater tolerance, less accuracy and lower quality,

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

TERMOSTOP DELTA T low, (ES: 5°C)

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

boiler a 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



Automatic adjustment of dosages according to the hardness of the input water (only from firmware 50)

INSERT THE HARDNESS OF WATER INLET (°F)

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

1 - Select the hardness of the inlet water with the use of the arrows



2 - Confirm by pressing and holding the



key.

3 - Detergent and rinse-aid dosage values will be set as per recommended dosage table. It is however possible to change the said values from the technical menu according to your requirements and depending on the type of detergent used.

N.B. if you skip this procedure, it is possible to repeat it by accessing the technical menu and setting the hardness value from item 39.

4 - 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).

Riempimento delle cannuce di detersivo e brillantante

Verranno visualizzati i seguenti messaggi:

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

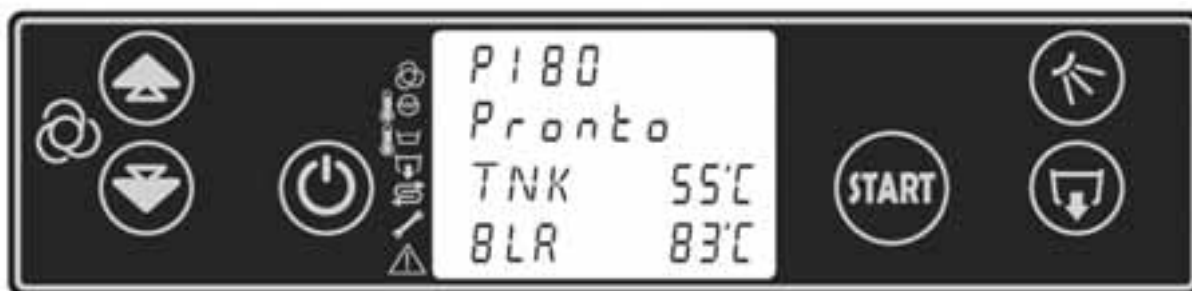
3 - If YES is confirmed the following message appears

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



<p>P180 Pronto TNK 55°C BLR 83°C</p>	Program selected / Seconds countdown
	Possible error code
	Dishwasher status
	Possible anomaly description
	Tank Temperature
	Boiler Temperature
ON/OFF	SWITCH-ON / SWITCH-OFF
START	WASH CYCLE START
"UP" arrow	WASH TIME SELECTION (see default parameter table) (Keep the arrow pressed to go to the next cycle)
"DOWN" arrow	WASH TIME SELECTION (see default parameter table) (Keep the arrow pressed to go back to the previous cycle)
MANUAL RINSE	ADDITIONAL RINSE CYCLE START 15 sec. that can be set from the technical menu
MANUAL DRAIN (if drain pump present)	REMOVE OVERFLOW VALVE AND START DISHWASHER DRAINAGE (dishwasher with optional extra installed only) (Keep the button pressed to start the drain cycle)

TECHNICAL MENU

From the technical menu, which is password protected, it is possible to execute different settings, as indicated hereunder:

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



2 - Press the keys at the same time








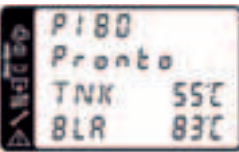



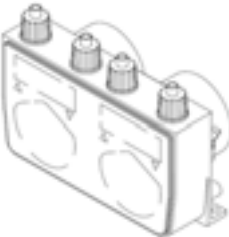





3 - Enter the password











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
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 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 Normale Breve 	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 Normale 	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 Intensivo 	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 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.. NOTE: by increasing the pause, the wash time decreases while leaving the total cycle time unaltered	Adjustable range: 5÷ 15sec	5



	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	15
			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: 15 sec for 2.5 – 3.0 bar 17 sec for 2.0 – 2,4 bar 20 sec for 1.5 – 1.9 bar 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		
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	Indicates the 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.	3÷5 interventions	3
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	15
TERMOSTOP					default
	30	Thermo-Stop	Boiler thermo-stop enabling	Disable the thermo-stops for quick dishwasher testing	on
			Attention, by disabling the thermo-stop, the dishwasher can also rinse with cold water. If too many cycles are performed in succession without letting the dishwasher reach the operating temperature, the error 04 "Boiler heating time-out" may appear		
	31	Loading Thermo-Stop	Tank thermo-stop activation when dishwasher loading is complete	Disable the thermo-stops for quick dishwasher testing	on
			Attention, by disabling the thermo-stop, the wash cycle can also start with cold water in the tank, creating foam. If too many cycles are performed in succession without letting the dishwasher reach the operating temperature, the error 03 "Tank heating time-out" may appear		
32	Thermo-Stop Boiler Set Delta	Allows you to determine the minimum temperature of the boiler (Boiler set-Thermo-stop set)	Intervallo 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	Displays and allows to reset the partial cycle counter. To reset it press the "Arrow down" or "Arrow up" key and enter the password When entering the password you can cancel the operation by holding and pressing the "On/Off" key for 3"	Rest the partial cycle counter after performing scheduled maintenance Press  enter the password 	
	35	Total Cycle Counter	Total Cycle Counter: displays the value of the total cycle counter	It cannot be reset	
PARAMETER RESET					default
	36	Energy saving	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.		30
	37	Reset Default	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.	Parameter reset if required. Press:  enter the password: 	
	38	Autoclean After Drain	Enables or disables the tank self-cleaning cycle at the end of the drain cycle (only for dishwashers with drain pump installed)		
	39	Water Hardness	It allows the hardness of the inlet water to be entered in order to automatically set the dosages for detergent and rinse-aid		25°F
 <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 **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.

	When the 10.000 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 Thermo-stop disabled	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 is it 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 is it interrupted. Boiler heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE

Alarm Code	Description	Checks performed by final user	Checks performed by repair technician
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	Tank safety thermostat (critical): 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	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 SAFE
ER11	Thermostop timeout: 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 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 by 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

Alarm Code	Description	Checks performed by final user	Checks performed by repair technician
ER19 (only from firmware 50)	Break-Tank overflow-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."			
ER20 (only from firmware 50)	Overtemperature alarm. 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.

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.	

DETERGENTS ADJUSTMENT

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

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



- 2 - Press the keys at the same time



- 3 - Enter the password



AUTOMATIC DETERGENTS ADJUSTMENT (only from firmware 50)

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



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 106.

DETERGENTS MANUAL ADJUSTMENT

- 1 - Measure the hardness of the dishwasher inlet water
- 2 - Refer to the recommended dosage table (see page 117 for the detergent and 118 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:

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



- 2 - Press the keys at the same time




- 3 - Enter the password




- 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 122)

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	28	5	5
		>35 °F	3	39	43	8	8


Basket size


Water hardness



Initial dosage

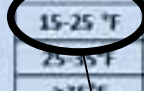
8 - Proceed with  up to **item 7** and set the initial rinse aid seconds (refer to table on page 123)

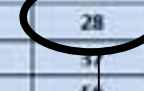
THE DOSAGES ARE CHOSEN ACCORDING TO:
a - Dishwasher basket size (for example 35x35)
b - Water hardness in inlet (for example 23°F)

I DOSAGGI VENGONO SCELTI IN BASE A:
a - Dimensione cesto lavastoviglie (per esempio 35x35)
b - Durezza acqua in ingresso (per esempio 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	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	50	3	35


Dimensione cestello


Durezza acqua


Dosaggio Iniziale

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 122 and 123
PROGRAMMA SOFT PR
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	1	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


RECOMMENDED DOSAGES


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


DETERSIVO / 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


BRILLANTANTE / 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

	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									
Dishwasher without 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	-
	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									
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	20
	16-25			7	1	3	5	7	15
	26-35			7	1	3	5	7	10
	36-50			7	1	3	5	7	5
40x40 glasswasher	0-15	17	0,5	9	3	5	7	9	20
	16-25			9	3	5	7	9	15
	26-35			9	3	5	7	9	10
	36-50			9	3	5	7	9	5
40x40 clean water glasswasher	0-15	5,5	0,5	3	2	3	5	7	20
	16-25			3	2	3	5	7	15
	26-35			3	2	3	5	7	10
	36-50			3	2	3	5	7	5
50x50 dishwasher	0-15	26	0,5	14	5	7	9	11	20
	16-25			14	5	7	9	11	15
	26-35			14	5	7	9	11	10
	36-50			14	5	7	9	11	5
50x50 hood type dishwasher	0-15	37	0,5	21	7	9	11	13	20
	16-25			21	7	9	11	13	15
	26-35			21	7	9	11	13	10
	36-50			21	7	9	11	13	5
60x67 warewasher	0-15	48	0,5	27	9	11	13	15	20
	16-25			27	9	11	13	15	15
	26-35			27	9	11	13	15	10
	36-50			27	9	11	13	15	5



RECOMMENDED RINSE AID DOSAGES

Dishwasher without built-in water softener

Dishwasher type	Water hardness value			First Dosage	Refill 1	Refill 2	Refill 3	Refill 4
	Value introduced by the client	boiler litres	recommended gr/l	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


Lavastoviglie con addolcitore incorporato

Tipologia lavastoviglie	Water hardness value			First Dosage	Refill 1	Refill 2	Refill 3	Refill 4
	Value introduced by the client	boiler litres	recommended gr/l	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	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	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

SELF-CLEANING PROGRAM AT END OF OPERATION (only from firmware 50)


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.
- With the machine empty and off, press and hold the drain key  to start a self-cleaning cycle.

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 .

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 48)

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.

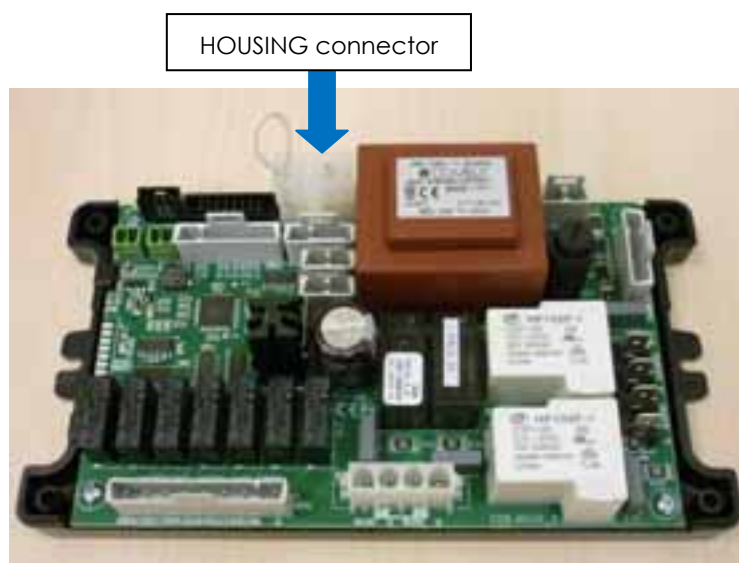
The operation must be repeated many times since each time the 2 arrow keys are pressed, you will see the progress of the test in the following sequence:

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

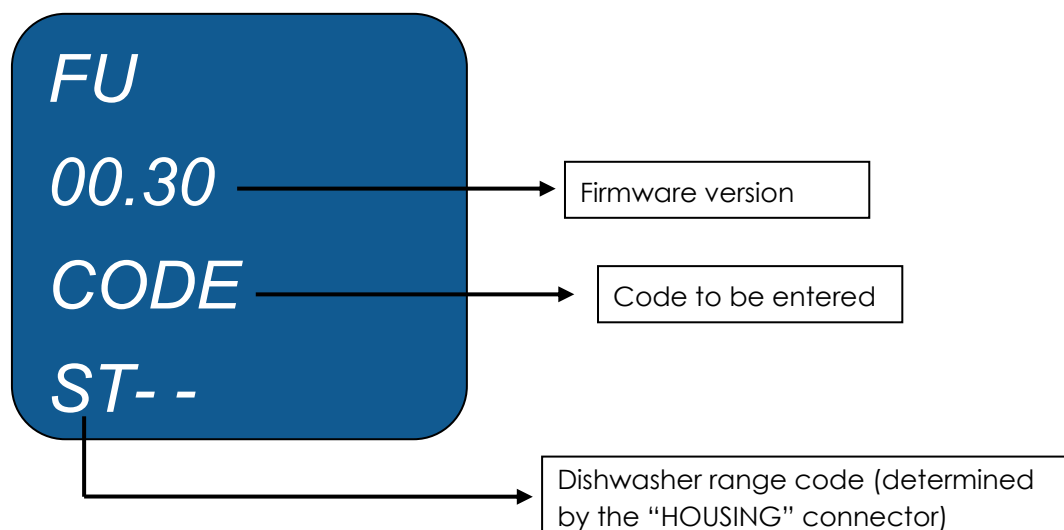
After resetting the language, the display switches off, the board is started and then the display comes on displaying the start-up sequence (refer to page pag. 106)

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
CLEAN WATER GLASSWASHER Rack 40x40	15
DISHWASHER WITH FRONT DOOR Basket 45x45, 50x50, 50x60	20
WAREWASHER Basket 60x67	30
HOOD TYPE DISHWASHERS Rack 50x50, 50x60, 60x67	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 Se-conds	Wash	Pause	Rinse	Initial Deter-gent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Ther-mo-Stop	Tank Ther-mo-Stop
1	90	70	5	15	20	25	3	10	75	55	55	40
2	120	100	5	15	20	25	5	15	77	55	57	40
3	150	130	5	15	20	25	7	20	78	55	58	40
4	180	160	5	15	20	25	9	25	78	55	58	40

DISHWASHER BASKET 45x45, 50x50, 50x60												
Times (sec)									Temperatures (°C)			
Cycle	Total Se-conds	Wash	Pause	Rinse	Initial Deter-gent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Ther-mo-Stop	Tank Ther-mo-Stop
1	90	70	5	15	30	40	5	10	75	53	55	38
2	120	100	5	15	30	40	7	15	77	53	57	38
3	150	130	5	15	30	40	9	20	78	53	58	38
4	180	160	5	15	30	40	11	25	80	53	60	38

HOOD TYPE DISHWASHERS												
Times (sec)									Temperatures (°C)			
Cycle	Total Se-conds	Wash	Pause	Rinse	Initial Deter-gent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Ther-mo-Stop	Tank Ther-mo-Stop
1	60	40	5	15	50	40	7	10	75	53	55	38
2	90	70	5	15	50	40	9	15	77	53	57	38
3	120	100	5	15	50	40	11	20	78	53	58	38
4	240	220	5	15	50	40	13	25	80	53	60	38

WAREWASHER												
Times (sec)									Temperatures (°C)			
Cycle	Total Se-conds	Wash	Pause	Rinse	Initial Deter-gent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Ther-mo-Stop	Tank Ther-mo-Stop
1	120	100	5	15	90	40	9	10	75	53	55	38
2	240	220	5	15	90	40	11	15	77	53	57	38
3	360	340	5	15	90	40	13	20	78	53	58	38
4	540	520	5	15	90	40	15	25	80	53	60	38

