INSTALLATION, USE AND MAINTENANCE MANUAL

HOOD TYPE DIGITAL MODELS

NELSON

DISH AND GLASSWASHING MACHINES LTD

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CE

INDICE – INDEX

1. GENERAL INSTRUCTIONS

1.1. INTRODUCTION

The manufacturing company declines all responsibility for any inaccuracies contained in this handbook due to printing or spelling mistakes.
The manufacturers decline all responsibility if standard safety norms are not complied with.

The manufacturers reserves the right to modify their products if necessary without compromising the basic characteristics.

1.2. WARNINGS

The information contained in this manual aims at providing guidelines regarding:

- technical characteristics;
- installation and mounting instructions;
- information on how to train the personnel responsible for the use of the appliances;
- use of appliances;
- maintenance work.

The manual must be considered part of the appliances, and must therefore be kept in a safe place for future reference.
Keep it safely with the machine for technicians and operators.

The manufacturer shall not be held liable for any of the following instances:

- improper use of the appliances;
- improper installation performed without complying with the procedures contained herein;
- faulty electrical power supply;
- serious inadequacies in the prescribed maintenance;
- unauthorised alterations or interventions;
- use of non-standard or non-specific parts;
- failure to comply with the instructions, either partially or fully.

Electrical appliances can be dangerous. Current standards and regulations must be adhered to during installation and use of the appliances.

De-activate the appliance in case of damage or malfunctioning.

For repairs contact a reliable retailer only.

1.3. COMPLIANCE WITH "EEC" DIRECTIVES

NOTE: Our products are made in compliance with the essential requirements established by the EEC directives in agreement with the "EEC 73/23 Low Voltage Directive, with the "EEC 89/336 EMC Directive, and according to the EEC Directive no. 23 of 19/02/73, and amended directive no.791 of 18/10/87, our appliances are manufactured according to current Italian and foreign technical standards.

1.4. IDENTIFICATION MARKING

The appliance is provided with a data plate. In order to identify the appliance, for an adequate after sales service and proper use of this manual refer to "Electrical data – General characteristics". Tab.1-2

2. INSTRUCTIONS FOR INSTALLATION

2.1. UNPACKING AND POSITIONING

Carry out the following operations:

1. take care not to damage the appliance by banging it against nearby objects during loading and offloading operations;
2. place the appliance in the desired position on a solid, flat and stable floor;
3. Only qualified personnel, equipped with safety measures, can be present in the area during installation;
4. Remove the appliance from its packaging, taking care not to damage any protruding parts (drains, wiring, power cable);
5. Remove the protective film;
6. Check that the appliance is in good condition. In the event of visible damage to the appliance contact the retailer and the courier responsible for delivering the product immediately. If in doubt do not use the appliance until it is checked by a specialised technician;
7. transport and move the appliance using a fork-lift by inserting the forks under the appliance.
8. carefully level the appliance by using the levelling feet;
9. clean the appliance before using it with a cloth dampened in water and bicarbonate or other neutral detergents and dry carefully.

2.2. WARNINGS

1. Prior to connecting the machine to the power and water supply read the general instructions and the information indicated on the data plate by the manufacturer.
2. Do not leave the machine in rooms with a temperature lower than 0° C;
3. The degree of protection of the machine is IP X4. Therefore it should not be washed with direct high-pressure water jets;
4. In the event of damage or breakdown switch off the appliance immediately.
5. Only use original spare parts to replace damaged ones.

2.3. LAWS, TECHNICAL REGULATIONS AND GENERAL RULES

Comply with the following during installation:

a) safety norms;
b) laws in force in the country where the appliance is installed;
c) read all the indications given in this handbook carefully as they provide important information for safe installation, use and maintenance;
d) keep this handbook in a safe place for future reference by those who use the appliance;

2.4. INSTALLATION

Installation, start-up and maintenance of the appliance should only be carried out by specialised personnel in compliance with the instructions provided by the manufacturer.
The manufacturer declines all responsibility if the appliance malfunctions due to incorrect installation, tampering, improper use, poor maintenance, failure to comply with the local laws and inexperience in using the appliance.

2.4.1. CONNECTING THE WATER SUPPLY

Prior to connecting the appliance to the water supply make sure that a gate valve or tap has been placed between the water supply system and the appliance that allow the power supply to be interrupted if needed or if repairs are required.
The water supply minimum pressure, measured when water enters the machine during the final rinse (flux pressure), should not be lower than 2 bar, even in the presence of other open taps on the same line.
We recommend that each machine is equipped with its own pipe having reduced length and a sufficiently large cross section so as to avoid pressure or load losses.
An additional rinsing pump, available as an optional item, must be installed in cases where pressure is lower than the minimum value required (see tab.2)
A pressure reducing valve must be installed upstream from the supply pipe in cases where static pressure is greater than 5 bar. The supply pipe of the machine must have a capacity equal or greater than 20 l/min.
A successful final rinse cycle is strictly dependent upon adherence to the values shown.
The drain hose must be connected directly to the drain duct after a siphon has been interposed.
Drainage occurs by gravity, therefore the joint to the drain hose must always be positioned below the bowl level.
If the existing drain is located above the specified level an adequate drainage pump must be installed (optional),see tab.2.
Do not install the outlet hose in tubs, sinks etc.

2.4.2. CONNECTING THE ELECTRICAL SUPPLY

1) The units are delivered ready for working with the voltage shown on the data plate (see tab.1)
2) Connect to the electricity line, interposing a suitably rated automatic circuit breaker, where the opening distance between the contacts must be at least 3 mm. Furthermore, supply voltage must not deviate from the voltage value by +5% to -10 %.
3) The characteristics of the flexible cable chosen for connection to the electricity line must not be inferior to the type with rubber insulation H05RN-F and it must have a nominal cross section suitable to absorb maximum current; hence, as

indicated in the table, it must have the same minimum cross section indicated relative to the model.

4) To access the power inlet terminal board and replace the power cord, check the positioning in the attached installation diagrams.

N.B. It is essential that the appliance is connected to an efficient earth plug. For this purpose, near the connection terminal board there is a terminal marked with a plate with the symbol ⏚ on it and to which the earth wire must be connected (yellow-green).

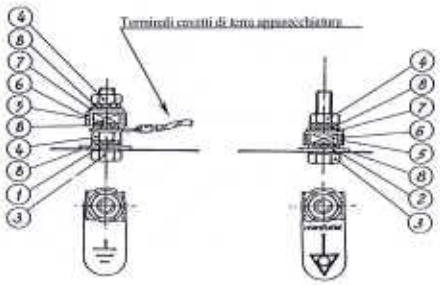
ATTENTION: The use of adaptors, multiple sockets or extension cables is strictly forbidden.
Check and tighten all the screws of the electric system which may have become loose during storage or transport.

ATTENTION: Safety device installed; The appliances are equipped with a manual reset safety device which, in the event of an increase in temperature beyond the predefined maximum limit, cuts in, thus interrupting the power supply to the heating elements.
The event is signalled by the switching off of the light during normal operation.

2.4.3. EQUIPOTENTIAL CONNECTION

If several appliances are installed in a row, the appliance must be connected to an equipotential system whose effectiveness must be verified in accordance with the relative current laws. The connection is at the back of the appliances and marked with the "EQUIPOTENTIAL" plate.

NOTA: the manufacturers decline all responsibility if the accident prevention rules described above are not complied with!



2.5. ADJUSTMENTS AND CHECKS

The temperature inside the bowl is set at 55/60°C.
This temperature favours the correct use of the chemical characteristics of all industrial detergents.
It is advisable not to change this parameter.
The temperature of the boiler is set at 87-90°C.
This value allows the rinse water temperature to be optimized throughout the cycle.

2.6. RINSE AID DISPENSER

The appliance is equipped with a fully automatic rinse aid dispenser.
Before starting the appliance make sure that the rinse aid suction tublet is inserted to its container.
During the manufacturing process the dispenser is calibrated for maximum opening and must be then adjusted according to the water hardness.

Calibration: Turn the adjustment screw anticlockwise to increase the capacity and clockwise to decrease it.
A perfect dosage is obtained by turning the adjustment screw by approximately 90 degrees.
An excessive dose of surfactant leaves blue streaks on the crockery and leads to the formation of foam in the bowl.
On the other hand, if crockery is covered with water droplets and drying is slow it means that the dose of surfactant is insufficient.

Before setting the right amount of surfactant to be used, it is advisable to carry out a specific test to determine the degree of water hardness.
If the hardness of the water is greater than 15°F. (French degrees), we advise to install a decalcifier upstream from the supply solenoid valve of the machine.

Considering that the amount of surfactant varies sensibly according to its concentration and type of formulation, the values listed in this manual are totally indicative and must only serve as guidance.
The instructions supplied with the surfactant used will provide useful information on how to determine the necessary dose.
In order to determine the exact amount of product, once the suction has been carried out, remove the transparent tublet from the surfactant container and measure the shift in the internal column of liquid.
The doses shown have been calculated on the basis of the characteristics of a good product available on the market (with a recommended concentration of 1.5g. per 10lt. of rinse water) and to a water hardness of 10-12°F .
Given that 1g. of product (1cm^3) is equal to 8 cm in the liquid column inside the transparent suction tublet, the indicative amounts for the various models are as follows:

	CONSUMPTION of H_2O RINSE (l)	AMOUNT OF PRODUCT (cm)
SW 1300 BT	3.5	6

2.7. LOADING THE DETERGENT

Pour the required amount of detergent into the dishwasher by following the instructions provided by the manufacturer.

If powder detergent is used make sure that it is evenly distributed in the bowl and does not deposit on one single area in order to avoid the formation of dark stains at the bottom; shake the water.
Considering that the dosage varies sensibly (0.8-2.5 grams/litre) according to the product concentration and type of formulation, the amounts shown are purely indicative.

EXAMPLE OF DOSAGE WITH 2 g/litre

	CAPACITY TUB (l.)	INITIAL DOSE	EVERY 5 WASH CYCLES
SW 1300 BT	36	g 72	g 24

Use only specific anti-foam detergents in the appropriate doses.

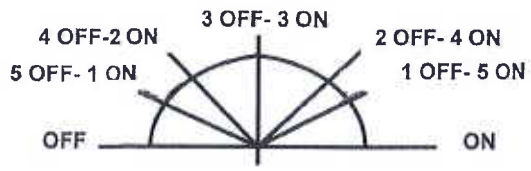
2.8. DISPENSER FOR LIQUID DETERGENT (optional)

2.8.1. START-UP

Before adjusting the detergent dispenser (optional), this and the corresponding small supply pipe must be filled as follows:
Supply voltage to the machine.
The dispenser is connected in parallel with the load/rinse solenoid valve.
DO NOT insert the overflow in the drain hole and run the water until the small transparent plastic pipe and the dispenser are filled.
Check the detergent concentration and the supply water hardness by referring to the product data sheet before adjusting the dispenser.
Follow the manufacturer's instructions carefully.
The amount of detergent poured into the bowl depends on the amount of water consumed by the machine during each rinse cycle.
The amount required may range between 0.8 and 2.5 grams/litre depending on the detergent type and concentration.

2.8.2. HOW TO REGULATE THE DETERGENT DISPENSER

The regulator was designed to allow the dosage of detergent that normally flows through the dispensing pumps.
Specifically this regulator carefully balances the two amounts of detergent (the initial and replenish ones) which periodically are loaded into the machine.
By fully turning the timer anticlockwise the pump is always off, whereas by turning fully it clockwise the pump is always on.
The intermediate settings of interval/operation are exemplified in the diagram below:



2.8.3. OPERATION

Since the control is parallel to the load/rinse solenoid valve, when the machine is filled with water, the dispenser adds the detergent according to the amount established by the manufacturer.
When the rinse cycle starts, the load/rinse solenoid valve allows the dispenser to replenish the detergent in the bowl.

N.B. The setting of the operation of the dispenser must find a balance between the initial loading and replenishing, by adjusting the operating time in relation to the intervals.
One second of dispenser operation corresponds to the input of one gram of product

2.8.4. EXAMPLE OF HOW TO SET THE AMOUNT OF DETERGENT REQUIRED

Measure the water consumption of each rinse cycle by referring to the technical sheet of the appliance.
For example, let us assume that the consumption is equal to 2 litres:
2 lt of water x 1.5g (hypothetical amount of detergent recommended by the manufacturer for every litre of wash water, taken from the product technical sheet) = 3 (gr. of detergent).
Given that 1 gr. = 1 cc. of detergent takes up 8 cm. of the transparent supply tublet of the dispenser, this leads to: 3 (gr. of detergent) x 8 (cm. of tublet) = 24 (cm. of tublet corresponding to the volume of required detergent).
The setting must be carried out so that the appliance produces an amount of detergent equal to 24 cm. in length of the supply tublet, for every rinse cycle.
By following the same criteria, the consumption of every other dishwasher model can be calculated.
N.B. The data provided above refers to a standard supply tublet with a diameter of 5 mm
The amount of detergent is right when the crockery is free from any food residues at the end of the wash cycle.
An excessive amount of detergent can give rise to the build-up of foam in the bowl and leave white streaks on the crockery.
Insert the overflow in its housing and carry out some trial cycles.
Perfect wash results can be guaranteed by gradual setting.

N.B. <u>Extra care must be taken in achieving a perfect balance between the amount of rinse aid and the amount of detergent.</u>

Do not immerse your hands in the wash lye. Should this happen rinse immediately with plenty of water.
Place the dishes with the cavity facing upwards and the cups and glasses upside down.
Place the saucers in the appropriate rack support and the knives and tea spoons in the cutlery basket with the point facing downwards.
Do not place silver and stainless steel cutlery in the same container as this may cause silver to burnish and stainless steel to corrode. If possible, wash glasses and glass dishes before the wash cycle.
Place the various types of crockery into the appropriate baskets (plates, glasses, mugs and cups, saucers, cutlery etc.).
In order to save detergent and energy only start a wash cycle when the dishwasher is full without overloading the racks and avoiding any overlapping of crockery.
In order to keep maintenance to a minimum, WE ADVISE TO CLEAN THE CROCKERY BEFORE LOADING THE MACHINE; by removing food, lemon peel, toothpicks, olive pits etc. which could partially obstruct the filter of the solenoid valve, thus compromising the washing performance, the quality of the final result will improve considerably.
Remove all food residue from the crockery.
Leave the dishes and cutlery with dried-on food residue to soak in water before loading the rack.
Place the basket in the dishwasher, shut the door and start the wash cycle.

2.9. FUNCTIONAL CHECKS

Before operating the machine it is appropriate to follow the testing procedure below:

1) CHECKING THE WATER LEVEL:
- During the filling of the bowl, the water must stop flowing into the bowl when its level is at least 1 cm below the level of the overflow.
- To protect the heating element while the bowl is being drained, the load solenoid valve must start operating again when the water level is 2 cm above the heating element.

2) CHECKING THE RINSE CYCLE:
- The rinse arms must rotate freely and all the sprayers must work correctly.

3) CHECKING THE WASH CYCLE:
- The wash water must be distributed with high pressure by all the sprayers.
- The wash arms must rotate freely under the water pressure.

4) CHECKING THE TEMPERATURE LEVELS:
- The rinse and wash water temperature levels must correspond to the data highlighted in the "Adjustments and checks" chapter

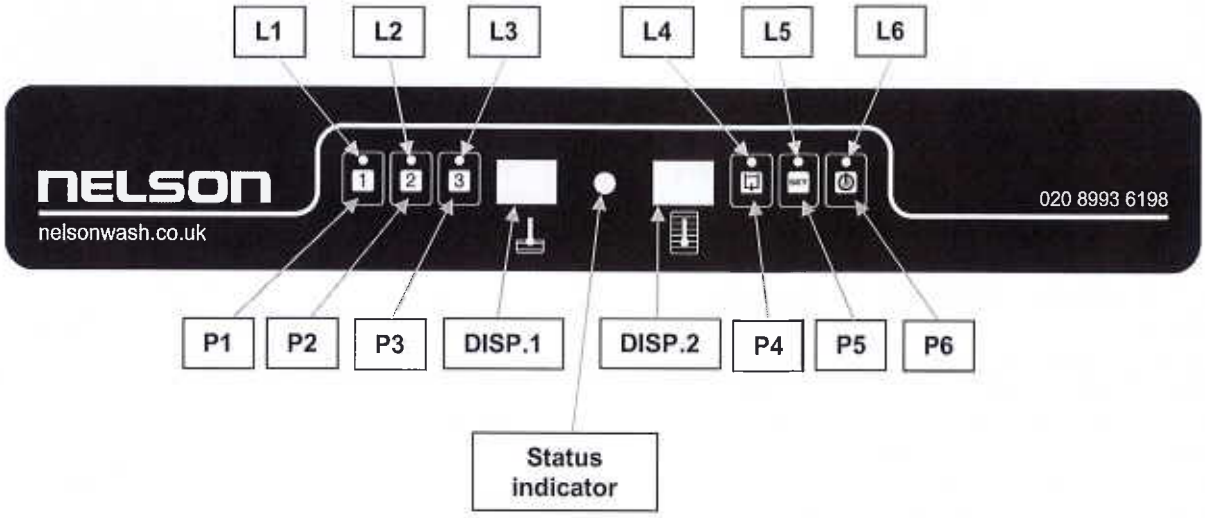
5) CHECKING THE DISPENSER/DISPENSERS:
- During each cycle, the dispenser must intake the correct amount of surfactant and/or detergent. To this end, it is useful to remember that 8 cm. of the transparent supply tublet with a cross-section of 5x8 mm. contain approximately 1 gram of product (1 cm^3).

6) CHECKING THE WASH RESULTS:
- The wash results must be visibly satisfactory and the wash cycle must ensure that every possible food residue is removed from the surface of the crockery.
- The rinse cycle must remove small residues of food and detergent from the crockery.
- At the end of the cycle, the perfectly clean crockery must dry almost instantly by evaporation as soon as the basket is extracted from the machine.

3. USER MANUAL

3.1. CONTROL AND COMMAND PANELS

MOD. Standard:



P1: Short cycle start button
P2: Medium cycle start button
P3: Long cycle start button
P4: Draining cycle with sanitation
P5: Resins regeneration
P6: Machine in standby
L1: Active short cycle indicator
L2: Active medium cycle indicator
L3: Active long cycle indicator
L4: Active drain cycle indicator
L5: Active regeneration cycle indicator
L6: Standby indicator

DISP1: bowl temperature
DISP2: boiler temperature
Status indicator: red-green light to indicate ready to work or card malfunction alarm.

3.2. SETTING IN OPERATION:

1. Supply voltage through the main switch upstream from the appliance, the machine is in standby recognizable from the lit decimal points in the displays of the tab control.
2. Turn the water tap on.
3. Make sure that the filter and the overflow are placed in the correct position.
4. Shut the door or hood and press button P6 for at least 2 seconds, to exit from standby status and enter in working status. The machine starts filling up with water and possible detergent.
5. Once the machine has been loaded the status green light will lit (machine ready) the boiler heating elements automatically come into effect followed by the bowl heating element once the boiler temperature (85°C) has been reached. Once reaching the temperature of 55° C., in the bowl, the operation cycle can be started.

3.2.1. WARTER FILLING BY ATMOSPHERICAL DISHWASHING MACHINES

Atmospherical dishwashing machines have a different filling and heating up of the bowl's water.

1. First of all boiler will be filled and when the correct water level will be reached water heating up will be starting up to a temperature of 75°C.
2. After heating the machine will start to fill warm water in the bowl for 20sec. If reached level won't be correct the machine will be starting working as per point 1. This procedure will last up to required water level in the bowl will be reached. After that the green led light goes on (status led) and there will be a beep.
3. The rest of the functioning operations are the same as for pressure machines.

DEMARK: For best washing results it is advisable to wait for the achievement of temperatures above (indicated in the display).

If it is necessary to open the door when the machine is running **AVOID DOING IT TOO QUICKLY.**
Although the appliance is equipped with a safety switch to prevent the door from opening suddenly, spurts of water could still reach the user in the event of a hasty manoeuvre.

3.3. NORMAL OPERATING CYCLE:

Once the machine is ready to operate as per the "SETTING IN OPERATION" paragraph, follow the instructions below to run the desired wash cycles :

- Insert the rack with the soiled crockery;
- Select the preferred cycle pressing one of the buttons P1, P2 or P3. The cycle is also stored for subsequent washing and signalled by the flashing of the indicator light. When you turn the equipment on it is settled to start automatically with the medium cycle.
- Lower the hood to start the cycle, the indicator light changes from flashing mode to fixed rate and the green light "status LED" goes off. (The end of the wash cycle is indicated by the green "Status LEDs" and a beep).
- Open the door, extract the rack with the clean crockery and insert another rack, which has been previously loaded, into the dishwasher for the next wash cycle.

3.4. DRAINAGE CYCLE AND SANITATION:

- Remove the overflow (not the filter)
- Press button P4 to start the draining cycle. The bowl sanitizing cycle follows the discharge cycle only when hood is closed.

At the end of the cycle if you do not select any function the machine after 2min enters into standby mode

ADVICE AND ARRANGEMENT OF CROCKERY IN BASKETS:

- Do not immerse your hands in the wash lye. Should this happen rinse immediately with plenty of water.
- Place the dishes with the cavity facing upwards and the cups and glasses upside down. Place the saucers in the appropriate rack support and the knives and tea spoons in the cutlery basket with the point facing downwards.
- Do not place silver and stainless steel cutlery in the same container as this may cause silver to burnish and stainless steel to corrode.
- If possible, wash glasses and glass dishes before the wash cycle.
- Place the various types of crockery into the appropriate baskets (plates, glasses, mugs and cups, saucers, cutlery etc.).In order to save detergent and energy only start a wash cycle when the dishwasher is full without overloading the racks and avoiding any overlapping of crockery.
- In order to keep maintenance to a minimum, **we advise to clean the crockery before loading the machine**; by removing food, lemon peel, toothpicks, olive pits etc. which could partially obstruct the filter of the solenoid valve, thus compromising the washing performance, the quality of the final result will improve considerably.
- **Remove all food residue from the crockery. Leave the dishes and cutlery with dried-on**

food residue to soak in water before loading the rack.

NB : *If the instructions have been correctly followed, you will have, at this point, crockery perfectly cleaned, dry and hygienic. Not to spoil the work, ensure that the storage areas have the same requirements.*

3.5. DECALCIFICATION AND REGENERATION OF RESINS

Some dishwasher models are equipped with a system for water decalcification and the regeneration of ion exchange resins in salt water.

DECALCIFICATION : the system is designed for decalcifying the inlet water that runs through the boiler (without any external intervention).

REGENERATION OF RESINS: a regeneration of ion exchange resins in the water softener is required at regular intervals depending on the hardness of the inlet water (see table) and must be carried out as follows:
The machine is set to do the regen program every 60 washing cycles; the warning light (8) will start to blink when the regen program is requested. You can stop the blinking only by starting the regen program.

I's advisable to check the correct quantity of salt inside the salt container before switching on the machine.
If partially full or empty it is advisable to refill it with 1 Kg ok sodium chloride (cooking salt). Usually 1 filling is enough for ¾ regenerations.
The salt container can be reached by unscrewing the cap placed on the bottom of the tank:

1) Press button P5 to start the regeneration cycle;
2) When Led L5 lights off regeneration cycle is over, it lasts approx.20 min.

If after the cycle no function will be selected the machine after 2 min. will be in stand by position.

3.6. ADVICE TO USERS

At least twice a day, or if you notice turbidity and thickening of the washing water due to excessive concentration of dirt particles in suspension, it is **ESSENTIAL** to renew it. Washing in these conditions causes wasteful increasing of detergent and energy, to the detriment of the quality of washing.
Remove the overflow from the drain hole. When the tub is completely drained, carefully clean the bottom, removing any uneaten food or any solids.

Only after you have done this operation, remove the filter carefully in order to prevent food debris, entangled in the mesh of the filter, fall into the suction port of the pump.

Wash the filter carefully under running water and place it back into place. Leave the door open to ventilate the interior of the machine.

DO NOT OPERATE THE MACHINE WITHOUT PROTECTION FILTER OF THE PUMP.

In case there is a water softener it is possible to regenerate the resin as described in "softening and regeneration of the resins."

4. INSTRUCTION FOR MAINTENANCE

4.1. PERIODIC MAINTENANCE

Disconnect the appliance from the power supply before carrying out any cleaning or maintenance operations.
Remove the washing impellers every 2-3 days and make sure that there are no food deposits inside. Check the slits and clean thoroughly if necessary.
Make sure that the rinse arm can rotate freely.
Remove any residues that may obstruct the holes of the nozzles by gently using a thin point.
Usually, the lance swivel rinse does not require any special maintenance operation.
The external surfaces of the machine may be cleaned using non-abrasive products which are specifically designed for stainless steel maintenance.
Use a damp cloth avoiding spilling water on the control panel.
Do not clean the machine with pressure water jets.
Any marks on the appliance interior may be removed using a cloth dampened with water.
Do not use **corrosive products** such as sodium hypochlorite
(bleach) or hydrochloric acid (muriatic acid), steel wool or brushes.
Any disincrustation of the dishwasher must be carried out only by a specialised technician.
High quality products must be used, which are specifically designed by the best manufacturers of industrial cleaning equipment.
In case of dirt particles check that:

- The washing nozzles are clean;
- The washing temperature is approximately 60°C;
- The active chlorine detergent has been measured out correctly and is suitable for industrial cleaning.
- The pump suction filter is clean;
- The crockery has been placed in the appropriate rack;
- The crockery has been arranged well.

If the machine is left unused for extended periods, drain the water from the boiler and the electric pump and apply some Vaseline on the stainless steel surfaces.

N.B. : *These operations must be carried out only after power has been removed from the appliance by setting the main switch upstream from the machine into the "OFF" position.*

4.2. TABLE OF ALARMS

Alarm Type	Alarm Code	Abbr. on DISP 1	Abbr. on. DISP 2	Alarm description
Time-out bowl loading	**Alarm 1**	**AL**	**01**	loading, does not reach consensus by the pressure tank within a max. The load is locked
Time-out bowl draining	**Alarm 2**	**AL**	**02**	in the drain, the pressure switch signals still presence of water in the bowl after a time max. Clogged drain
Time-out heating boiler	**Alarm 3**	**AL**	**03**	Boiler heating element disconnected or damaged
Time-out heating bowl	**Alarm 4**	**AL**	**04**	Bowl heating element disconnected or damaged
Over temperature boiler	**Alarm 5**	**AL**	**05**	boiler temperature exceeds the settled maximum value
Over temperature bowl	**Alarm 6**	**AL**	**06**	bowl temperature exceeds the settled maximum value
Bowl overflow	**Alarm 7**	**AL**	**07**	the consent of the second pressure tank overflow is noted
Bowl temp. probe not connected	**Alarm 8**	**AL**	**08**	
Bowl temp. probe in short circuit	**Alarm 9**	**AL**	**09**	
Boiler temp. probe not connected	**Alarm 10**	**AL**	**10**	
Boiler temp. probe in short circuit	**Alarm 11**	**AL**	**11**	
Cold rinse	**Alarm 12**	**AL**	**12**	In a washing cycle is delayed rinsing because of the boiler temperature to below that desired, up to a maximum time. The cycle is completed, however, with pauses and cold rinse.

All alarms are "blocking", the machine stops its normal operation until the cancellation of the alarm that can be done by turning off the machine, the entrance into stand-by or starting a new cycle. If the alarm condition persists, the machine will return under alarm and goes immediately blocked.
Tank overflow alarms (**AL 07**) and timeout heating boiler (**AL 03**) are deleted automatically after the condition that caused the alarm.

4.3. SERVICE MANUAL AND ADVICE FOR TROUBLESHOOTING

Whenever the appliance fails to work, check for a solution from the following list so as to be able to give the Technical Assistance Centre useful information for troubleshooting. The most recurring causes of malfunction are:

A) BY SETTING THE SWITCHER INTO THE ON POSITION THE MACHINE DOES NOT START
B) THE WATER DOES NOT ENTER THE DISHWASHER
C) WATER KEEPS ENTERING THE DISHWASHER
D) THE WATER DOES NOT HEAT UP (TRI-PHASE MACHINE)
E) THE WASH ELECTRIC PUMP IS FAULTY
F) THE MACHINE DOES NOT RINSE
G) THE MACHINE RINSES UNINTERRUPTEDLY
H) THE WASH RESULTS ARE UNSATISFACTORY
I) THE WATER DISPENSER OF THE SURFACTANT IS FAULTY
J) THE ELECTRIC DISPENSER OF THE DETERGENT IS FAULTY
K) THE REGENERATION CYCLE DOES NOT START
L) THE DRAINAGE PUMP IS FAULTY

Once the area where the anomaly has presumably occurred, has been identified, proceed as indicated in the tables below.

A BY SETTING THE SWITCHER INTO THE ON POSITION THE MACHINE DOES NOT START

POSSIBLE CAUSE	SPECIFIC SOLUTION
• There is no voltage in the electrical system, or the main switch is disconnected or the corresponding fuses are burned-out;	• Check;
• The machine connecting cable may be interrupted;	• Replace;
• The conductors in the control panel terminal board may be loosened;	• Check and tighten;
• The machine line switch is inefficient;	• Replace;
• The conductor contacts are inefficient;	• Check and replace
• Electronic board	• Check connection and in case replace the board
• Control panel	• Check and replace;

B THE WATER DOES NOT ENTER THE DISHWASHER

POSSIBLE CAUSE	SPECIFIC SOLUTION
• There is no water in the water system or the tap is closed;	• Check;
• The supply pipe may be bent or compressed;	• Check;
• The filter of the solenoid valve may be dirty;	• Remove and clean;
• The coil of the solenoid valve may be broken;	• Replace;
• The small piston of the solenoid valve may be blocked.	• Remove and check;
• Connections on the circuit may be faulty;	• Check all connections;
• The pressure switch is faulty.	• Replace.
• Electronic board	• Check connection and in case replace the board
• Hood micro may by faulty	• Replace

C WATER KEEPS ENTERING THE DISHWASHER

POSSIBLE CAUSE	SPECIFIC SOLUTION
• The solenoid valve is dirty;	• Remove the solenoid valve and clean the membrane compensation cutout. Replace, in the case of a sealed solenoid valve;
• The membrane is torn;	• Replace;
• The small piston does not move into its housing.	• Check and replace the solenoid valve if necessary.
• Loose connection between small tube and pressure switch;	• Slightly shorten the tube and re-insert it by tightly fastening the strap;
• The air trap or the small tube are pierced;	• Replace;
• There is water in the pressure switch or in the air supply tube;	• Remove the small tube and blow the internal water away. Remove the pressure switch and try to expel the water from the inside. Replace if necessary;
• Loss of pressure in the pressure switch;	• Unload the dishwasher completely and reload it;
• Electronic board;	• Check connection and in case replace the board

D THE WATER IN THE BOILER AND/OR BOWL DOES NOT HEAT UP (TRI-PHASE MACHINE)

POSSIBLE CAUSE	SPECIFIC SOLUTION
• A phase is missing from the relay coil;	• Check;
• Remote control switch coil may be interrupted;	• Check;
• The remote control switch contacts may be worn-out;	• Replace the contactor;
• The connections or conductors may be faulty;	• Check;
• There is one phase missing;	• Check the appropriate circuit;
• The boiler heating element may be damaged;	• Replace;
• The connection between the terminals and the heating element is incorrect.	• Check;
• The bowl heating element may be damaged;	• Replace;
• The connections or conductors may be inefficient;	• Check the bowl contactor and thermostats;
• Temperature probe may be faulty;	•
• Electronic board	• Check connection and in case replace the board

E THE WATER IN THE BOILER AND/OR BOWL OVERHEATS

POSSIBLE CAUSE	SPECIFIC SOLUTION
• The remote control switch has remained in the "Closed position", even though voltage is supplied to the coil.	• Check the closure contacts and replace if necessary;
• Electronic board probe may be faulty;	• Check and replace;

F THE WASH ELECTRIC PUMP IS FAULTY

POSSIBLE CAUSE	SPECIFIC SOLUTION
• The thermal protection is disconnected;	• Replace;
• The door micro is faulty;	• Replace;
• The condenser is faulty;	• Replace;
• The motor winding is faulty;	• Replace;
• Wash pump relay may be faulty;	• Check and replace;
• Control panel may be faulty;	• Check and replace;
• Electronic board;	• Check connection and in case replace the board

• The rotor does not rotate properly and absorption exceeds the nominal values;	• Remove and clean the coil and replace the seal and the bearings. Check that the motor has been set at the system voltage. Remove any residues. Check that all phases are present;
• The motor rotor is blocked;	• Make sure that there are no large food deposits or cutlery in the body of the pump. Make sure that the mechanical seal and shaft bearings are not blocked;
• There is insufficient water in the bowl;	• Make sure that the overflow is perfectly tightened. Make sure that the pressure switch prevents water from entering the bowl at 1 cm from the overflow level;
• The pump suction filter is dirty;	• Make sure that the dishes are placed in the dishwasher only after they have been properly cleaned. Clean the filter regularly according to its use;
• The pump and the washing impellers are dirty.	• Make sure that the machine is not used without a filter or that the filter is perfectly inserted in its housing.

G THE MACHINE DOES NOT RINSE

POSSIBLE CAUSE	SPECIFIC SOLUTION
• There is no water in the system;	• Check;
• The tap is partially closed;	• Check;
• The supply pipe may be bent or squeezed;	• Check;
• The filter of the solenoid valve may be dirty;	• Remove and clean;
• The coil of the solenoid valve may be interrupted;	• Replace;
• The small piston of the solenoid valve may be blocked;	• Remove and check;
• Pressure in the system is insufficient.	• Make sure that the system pressure is at least 2 bar. If pressure is lower, install an auxiliary rinse pump;
• Electronic board	• Check connection and in case replace the board
• Faulty connections or inefficient conductors on the coil circuit;	• Check;
• The door micro may be faulty.	• Replace;
• There is lime in the rinse circuit;	• Check and clean. Install a decalcifyer if necessary;
• The sprayers may be obstructed or the rotating arms blocked	• Check and clean;

H THE MACHINE RINSES UNINTERRUPTEDLY

POSSIBLE CAUSE	SPECIFIC SOLUTION
• The solenoid valve is dirty;	• Remove the solenoid valve and clean the membrane compensation cutout. Replace, in the case of a sealed solenoid valve;
• The membrane is torn;	• Replace;
• The small piston does not move properly in its housing or it is blocked.	• Check and replace the solenoid valve if necessary.

I THE DISHES ARE NOT CLEAN

POSSIBLE CAUSE	SPECIFIC SOLUTION
• The electric pump may be faulty or damaged;	• Refer to various sections in paragraph F;
• The detergent is not suited to dishwashers;	• Check the amount of detergent. Use only EXCELLENT products, specifically formulated for industrial washing by leading companies of the sector.
• There is no detergent in the bowl;	• Always adhere to the doses stated on the product technical sheets. Check the corresponding dispenser where present;
• The impellers may be obstructed or damaged;	• Clean and/or replace;
• The washing impeller may be blocked;	• Check and unblock;
• The water temperature is insufficient;	• Adjust the thermostat by checking, through a thermometer, that the wash water temperature corresponds to the pre-set temperature when the indicator light illuminates;
• The kitchenware has been loaded incorrectly;	• Make sure that the crockery is arranged as per instructions and does not overlap;
• The baskets have been used incorrectly;	• Use the supplied specific baskets for each type of crockery and cutlery;
• The rinse cycle has not been carried out properly. The crockery is lightly soiled;	• Refer to specific sections in paragraph G;
• He washing slits are partially obstructed;	• Remove and clean;
• The dishes or other crockery are overlapping;	• Check and separate correctly. Use the appropriate rack;
• There is dried-on food residue on the crockery due to late washing.	• Soak the crockery in water and wash again.
• The wash cycle may be inefficient;	• Refer to various sections in paragraph F;
• The rinse cycle may be inefficient;	• Refer to various specific sections in paragraph G;
• The rinse water may be too hard and contain exceeding calcium and magnesium salts;	• Install a decalcifyer upstream from the machine with adequate capacity according to the consumption of the machine itself. If the machine is equipped with a water softener make sure that the regeneration of resins is carried out regularly;
• There is excessive surfactant concentration in the rinse water.	• Adjust the dispenser according to the doses suggested by the product manufacturer. Once the dispenser has been adjusted, it is necessary to wait until the product concentration has stabilised on the new values, after a few wash cycles, before being able to notice any improvement in the quality of the rinse cycle.
• The detergent or surfactant may not be suitable for industrial dishwashers;	• Use a foam breaking detergent and an anti-foam surcfactant;
• The wash water temperature may be too low.	• Check the calibration of the thermostat that regulates the bowl temperature and the status of the bowl heating element.

J THE WATER DISPENSER OF THE SURFACTANT IS FAULTY

POSSIBLE CAUSE	SPECIFIC SOLUTION
• The small transparent suction tube may be bent;	• Check;
• The small suction tube may have a hole;	• Check and replace if necessary;
• The small suction tube is not properly tightened to the rubber seal;	• Check and replace if necessary;
• The suction fitting of the dispenser is not tightened properly.	• Check.
• Pressure in the system is insufficient;	• Check;

K THE ELECTRIC DISPENSER OF THE DETERGENT IS FAULTY

POSSIBLE CAUSE	SPECIFIC SOLUTION
• The small tube inside the dispenser may be broken; • The small suction tube may be bent or damaged. • Faulty connection or inefficient conductors on the motor coil circuit; • Detergent dispenser electronic board may be faulty;	• Replace the small tube; • Check and replace if necessary. • Check and replace if necessary; • Check connection and in case replace the board

L THE REGENERATION CYCLE DOES NOT START

POSSIBLE CAUSE	SPECIFIC SOLUTION
• There is no water in the water system or the tap is closed; • The supply pipe may be bent or squeezed; • The filter of the solenoid valve may be dirty; • The coil of the solenoid valve may be interrupted; • The small piston of the solenoid valve may be blocked; • The connections on the coil electric circuit may be faulty. • Electronic board • Control panel	• Check; • Check; • Remove and clean; • Replace; • Remove and check; • Check all connections; • Check connection and in case replace the board • Check connection and in case replace the control panel

M THE DRAINAGE PUMP IS FAULTY

POSSIBLE CAUSE	SPECIFIC SOLUTION
• The coil may be interrupted; • The pump may be clogged; • The impeller of the drain pump may be damaged; • The drain pipe may be obstructed. • Electronic board • Control panel	• Replace the pump; • Remove and clean; • Replace the pump; • Remove any food residue. • Check connection and in case replace the board • Check connection and in case replace the control panel

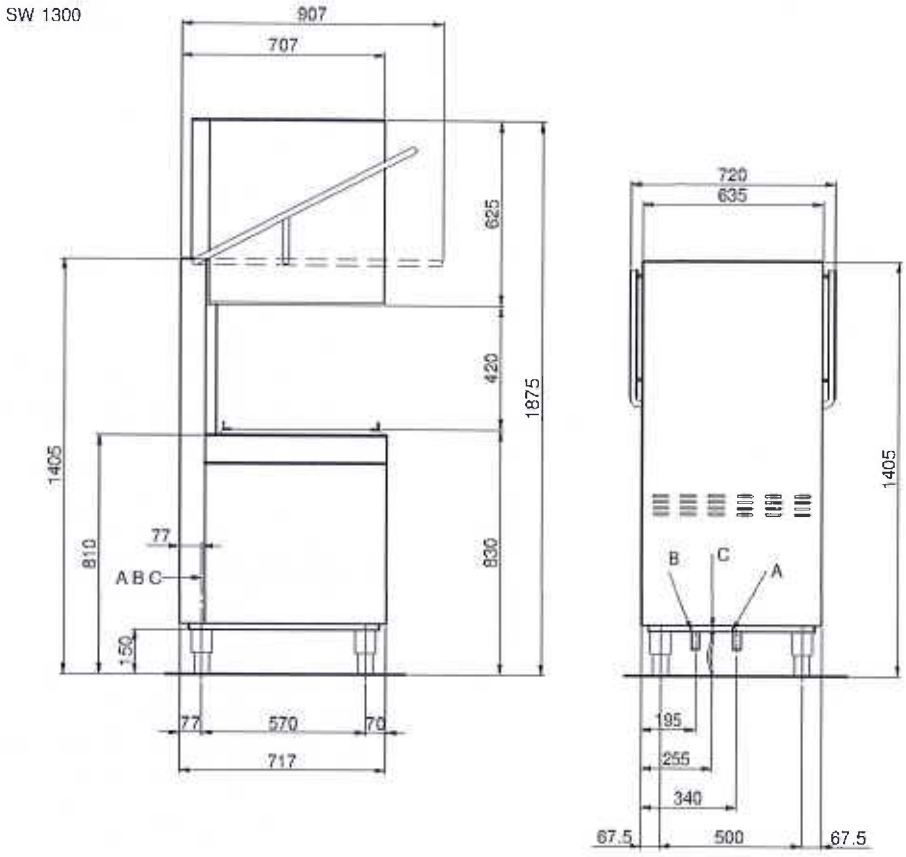
5. DISMANTLING - RECYCLING

In conformity with art.13 of Legislative Decree No. 151 of 25 July 2005, "Implementation of directives2002/95/CE,2002/96/CE and 2003/108/CE, regarding the reduction in use of dangerous substances in electrical and electronic equipment, as well as waste disposal"
Products bearing the barred dustbin symbol must be disposed of separately from other waste.
The recycling of old appliances is organised and managed by the manufacturer. Consumers should contact the manufacturer for information concerning the correct disposal of their old appliance.
Separate waste collection allows used equipment to be recycled, treated and disposed of without negative consequences for the environment and health, and it allows the materials in the equipment to be recycled.
Illegal dumping of the product by the user entails the administrative sanctions stated in the current legislation.

Materials used in the manufacture of the equipment:

- Stainless steel: bodywork
- Rubber: water system piping
- Copper: electric system
- PA (Nylon) wash circuit

6. INSTALLATIONS PLAN



A) SCARICO ACQUA Øi 31mm
TUYAU DE DECHARGE DE BAC Øi 31mm
WASSERABLAUFANSCHLUSS Øi 31mm
WATER OUTLET CONNECTOR Øi 31mm
DESCARGA DE AGUA Øi 31mm

B) ENTRATA ACQUA 3/4"
ALIMENTATION EAU 3/4"
WASSERZULAUFANSCHLUSS 3/4"
WATER SUPPLY 3/4"
ENTRADA AGUA 3/4"

C) ALIMENTAZIONE ELETTRICA (5x4mmq)
ALIMENTATION ELECTRIQUE (5x4mmq)
ELEKTROANSCHLUSS (5x4mmq)
ELECTRIC SUPPLY INLET (5x4mmq)
SUMINISTRO DE CORRIENTE (5x4mmq)

Prima di intervenire sull' apparecchiatura, scollegare l' alimentazione elettrica - Unplug the power supply before operating on the appliance
Bevor am gerät arbeiten ausschalten sie die elektrische speisung
Avant d'intervenir sur l'appareil, déconnectez l'alimentation électrique - Desconectar el alimentación antes cualquier intervención sobre el aparato

SCHEMA DI INSTALLAZIONE INSTALLATION DIAGRAM INSTALLATIONSPLAN SCHEMA DE INSTALLATION ESQUEMA DE INSTALACIÓN	MODELLO LAVASTOVIGLIE / DISWASHER GESCHIRRSPÜLMASCHINEN SW 1300	data: 20/12/2012 nome: Pin S. ultima mod.: 09/11/2012 FOGLIO:1/1	CODICE 255.967.00

7. TAB 1 - TECHNICAL DATA

TAB 1	
HOOD TYPE DIGITAL MODELS	
TECHNICAL CHARACTERISTICS	**MODELS**
	SW 1300 BT DT
Dimensions WxDxH (mm)	635x717x1405
Basket dimensions (mm)	500x500
Useable clearance (mm)	420
Total cycle time (sec)	55-100-150
Production baskets/hour	65-36-24
Rinse time (sec)	14
Tub capacity in lt.	36
Boiler capacity in lt.	12.4
Consumption of water per cycle (l)	3.5
Wash pump power (kW)	0.9
Rinse-booster pump power (kW)	0.33
Drain pump power (kW)	0.025
POWER WITH VOLTAGE 230V 1N 50 Hz	
Tub power (kW)	3
Boiler power (kW)	5.33
Total power kW	6.23
Water supply temperature °C	55
Water hardness °F	7-12
Pressure (bar)	1-4
The machines equipped with Water softener must be supplied at a pressure of 3-4 Bar and water hardness > 15 ° F	

8. TAB 2 – DOTATION AND ACCESSORIES ON REQUEST

TAB.2	
STANDARD EQUIPMENT	**SW 1300 BT DT**
Supply fitting ¾ "G	x
Tub drain pipe	x
Boiler safety thermostat	x
Shining product dosing device	x
Rinse-booster pump	
Break Tank	
rack for cutlery n°	1
Rack for plates n°	2
ACCESSORIES ON REQUEST	
Built in Water softener	x
VNR non return valve	x
Detergent dosing device	x
Drain pump	x
Break Tank	x
Rinse-booster pump	x