



Thank you for choosing our appliance.

The installation, use and maintenance instructions given in this manual have been prepared to ensure the long life and correct operation of your appliance.

Follow these instructions carefully.

We have designed and manufactured this appliance according to the latest technological developments. Now, it is in your care.

Your satisfaction is our greatest reward.

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READ THE INSTRUCTIONS CAREFULLY BEFORE INSTALLING THE MACHINE.



WARNING: FAILURE TO COMPLY (EVEN PARTIALLY) WITH THE RULES GIVEN IN THIS MANUAL WILL INVALIDATE THE PRODUCT WARRANTY AND RELIEVES THE MANUFACTURER OF ANY RESPONSIBILITY.

INSTRUCTIONS



This instruction booklet must be kept with the dishwasher for future consultation. If the dishwasher is sold or transferred to another user, make sure the booklet always goes with the appliance so that the new owner can have the necessary information on its operation and the relative instructions.

The instruction booklet must be carefully read before installation and first use of the dishwasher.

These instructions are supplied to safeguard the user in compliance with Directive 73/23 as amended and the “harmonized product Technical Standard” EN 60335-1 and EN 60335-2-58.

- ADAPTATION OF THE ELECTRICAL AND WATER SYSTEMS FOR DISHWASHER INSTALLATION MUST ONLY BE CARRIED OUT BY QUALIFIED OPERATORS.
- This dishwasher must only be used by adults. This is a professional machine to be used by qualified personnel, and installed and repaired exclusively by a qualified technical assistance service. The Manufacturer declines any responsibility for improper use, maintenance or repair.
- Accompany the door in opening and closing.
- Make sure the dishwasher is not resting on the power cord or the filling and drain hoses. Level the machine by adjusting the support feet.
- Do not use the appliance or any part of it as a step or support, since it is only designed to take the weight of the basket of dishes to be washed.
- **The dishwasher is designed for washing dishes, glasses and various crockery with residuals of food. Any other use is deemed improper. DO NOT** wash articles different from those specified or polluted by petrol, paint, bits of steel or iron, fragile objects or items not resistant to the washing process. Do not use chemical, corrosive, acid or alkaline products, solvents or chlorine-based detergents.
- Do not open the dishwasher door when it is working. In any case, the dishwasher has a special safety device which immediately stops it if the door is accidentally opened, thus preventing water spillage. Remember to always switch the dishwasher off and empty the tank before accessing the inside for cleaning or any other purpose.
- **After use, at the end of the day and for any kind of maintenance, it is advisable to disconnect the dishwasher from the power supply by means of the service switch and the main wall switch. Close the water supply cock.**
- The user must not carry out any repair and/or maintenance operations. If necessary, contact qualified and/or enabled personnel.
- Servicing of this dishwasher must be performed by authorized personnel.
N.B.: Only use original replacement parts. Otherwise the product warranty is invalidated and the manufacturer is no longer responsible.
- Some important rules must be followed for using this appliance:
 - 1) never touch the appliance with wet hands or feet,
 - 2) never use the appliance when barefoot,
 - 3) do not install the appliance in places exposed to water sprays.
- This appliance is designed to work at room temperatures up to a max. 35°C, in a suitable place with temperature not below 5°C.

N.B. :The manufacturer declines any responsibility for accidents to persons or damage to things caused by non-compliance with the above rules.

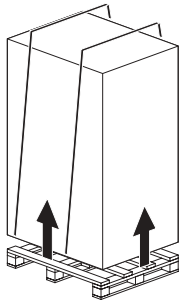
IMPORTANT: WAIT AT LEAST 10 MINUTES AFTER THE MACHINE HAS BEEN SWITCHED OFF BEFORE CLEANING INSIDE IT.

WARNING: DO NOT INSERT HANDS AND/OR TOUCH THE PARTS AT THE BOTTOM OF THE TANK DURING AND/OR AT THE END OF THE WASH CYCLE.



ATTENTION:

At the end of installation make sure to remove the parts of this booklet relevant to the installer, for future consultation.



1. MACHINE INSTALLATION

1.1 Receiving the product

After unpacking, make sure the appliance has not been damaged due to transport. Otherwise, report the anomaly to the dealer. For disposal of the packing, see chap. 17.

1.2 Water connection



Pressure Table	Min	Max
	kPa	kPa
Static P.	250	400
Dynamic P.	200	350
Hardness	2°f	10°f

Tab. 1

Supply H 2 O temperature table	
Machine by request	Machine in catalogue
Cold H ₂ O	Hot H ₂ O
5°C t < 35°C	50°C t ≤ 60°C

Connect the machine water supply to an on/off valve that can rapidly and completely shut off the water inflow.

Make sure the water supply pressure is within the values given in table 1.

If it is below 200 kPa dynamic pressure, for optimal machine operation a pressure increase pump must be installed (the machine can be supplied with such a pump by request).

If the supply pressure is higher than 4 bar (400 KPa), installation of a pressure reducer is recommended.

A water softener must be installed for waters with average hardness above 10 °f.

To ensure optimum performance, the water supply temperature range must come within the values given in table 1.

This will ensure cleaner dishes/articles and longer machine life. Every machine is supplied with a rubber hose for water filling with 3/4" F threaded connection.

It is advisable to connect the hose to a water supply not above 55° C, if connected to the hot water.

Connect the drain hose, supplied with the machine, to the drain union in such a way that water flows freely (therefore ensuring a minimum slope). If the water cannot be discharged to a level below the machine drain, it is advisable to install a drain pump suppliable on request.

The drain hose must always be connected to a trap to prevent the return of odours from the system.

1.3 Electrical connection

Electrical connection must be carried out in compliance with current standards.

Make sure the line voltage matches that given on the machine dataplate. An omnipolar thermal magnetic switch with contact breaking distance of at least 3 mm and adequate for the absorption must be installed (the machine must be turned off with this switch).

The switch must be used only and exclusively for this use and installed in the immediate vicinity.

Ensure that the system has an efficient earth.

On the back of the machine there is also a terminal marked by a symbol (see fig.1) used for the equipotential connection between different appliances. The special dataplate gives the max. power value in watts (W) and amperes (A), for dimensioning of the line, cable and switches.

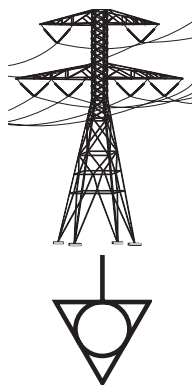


fig. 1



N.B.: for machines with 400Vac3N, H05RN-F or H07RN-F type cables must be used, or replace them with others conforming to the standards in the country where the dishwasher is installed. The dealer/importer/installer must adapt the power cable insulation class according to the work environment, in conformity with current Technical Standards.

In machines with three-phase pump, pay attention to correct pump rotation. Start up the dishwasher and carry out any calibration of the detergent dispenser in the following way:

- 1) Turn the wall switch on and open the water cock.
- 2) Switch the dishwasher on, pressing the key (B) (see chap. 2). The relative green LED lights up.
- 3) The machine starts to fill with water (important: do not open the door).
- 4) At the end of boiler filling, rinsing starts, to complete the tank filling. After filling, the dishwasher starts heating the boiler and tank.
- 5) The machine is ready for washing.

N.B.: If the cock is closed or the filling time is too long, the dishwasher may go on tank filling time-out (programming parameter (B)) indicating fault code (3).

1.4 Rinse aid dispenser operation

Operation: it utilizes the combined difference in pressure resulting from the start/stop of the wash pump and the rinse pressure.

Water connection:

- 1) connect the dispenser by its hose holder fitting (A) to the pump, by means of the rubber hose installed in the machine (pump pressure).
- 2) Connect the black rubber tube by its delivery connection (B) to the union located near the boiler (injector).
- 3) Ensure insertion of the green product-suction tube in the special connection (C) and the filter and ballast in the rinse aid tank.

Priming: to carry out priming, start the machine and do a few complete wash cycles or press the adjustment screw D during the wash cycle and open and close the door combined with the pressure of pin D. This system speeds up reinstatement.

Adjustment: with every rinse the dispenser draws a quantity of rinse aid adjustable from 0 to 4 cm³ equivalent to a length of 0 to 30 cm drawn in the tube.

Min. delivery is obtained by screwing the adjustment screw D (clockwise) all the way, whereas max. delivery is obtained by unscrewing the adjustment screw approx. 20 turns (anticlockwise).

For the right amount of product see the paragraph **"Rinse aid use"** (chap. 15.2).

N.B.: for every turn of the screw the amount of rinse aid drawn in the tube varies by 1.6 cm, equal to 0.2 cm³/turn (approx. 0.21g/turn with rinse aid density of 1.05 g/cm³).

The rinse aid dispenser cannot work correctly if the difference in level between the bottom of the machine and the tank is more than 80 cm.

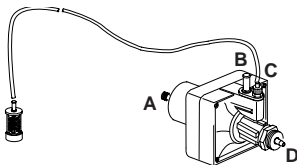
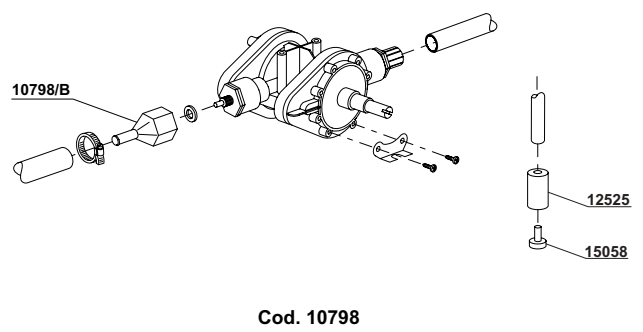
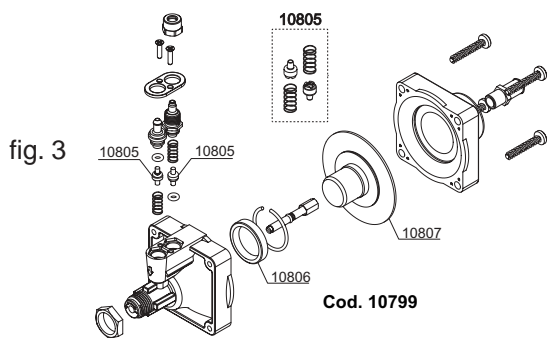


fig. 2





THE DISPENSERS ARE FACTORY-SET FOR DRAWING 5 CM, FOLLOWING A FUNCTIONAL CHECK DURING THE TESTING PHASE. THIS VALUE MUST ALWAYS BE MODIFIED ACCORDING TO THE TYPE OF RINSE AID AND THE HARDNESS OF THE WATER.

TYPE OF PROBLEM	POSSIBLE CAUSE AND CURE
Return of water in rinse aid container during rinse.	<p>Check the silicone valves code 10805.</p> <p>Silicone valve check: Rinse them under a jet of water and replace them if deformed.</p>
The dispenser does not draw rinse aid.	<p>As above, check the valves and make sure the water supply pressure is not below 200 kPa. If necessary increase the amount by operating the middle screw.</p> <p>Check the integrity of the membrane code 10807 and sliding of the piston on the seal code 10806</p>



1.5 Deterasive dispenser installation

Electrical connection:

See the wiring diagram attached to the dishwasher and follow the instructions on the diagram.

Water connection:

a) A $\varnothing 12$ hole must be made in the back of the dishwasher. In some dishwashers the hole is already available, and closed with a plastic plug. Remove the plug from the hole and fit the delivery connection.

b) Otherwise, make a hole of the same diameter as your injector in the rear part of the tank (see fig. 4); this operation must be carried out by Technical Assistance.

The hole must be made above the water level.

Important: make the hole in a place away from the overflow, in order to avoid the immediate spilling of detergent, and fix the dispenser upright with the hose holders turned downwards, taking care not to position the injector over live parts or where it interferes with filters.

c) Correctly install the injector (C), using the appropriate seals.

d) Connect the suction tube to the dispenser suction connection (see fig. 4 - point A).

e) Connect the delivery tube to the other connection of the dispenser and the delivery union (see fig. 4 - point B).

f) Insert the tube with filter in the detergent tank.

g) Prime the detergent and proceed with the dosing phase.

Dosage:

The detergent dispenser delivery can be adjusted by directly operating with a screwdriver as shown in fig. 5.

Every 2 cm of product drawn corresponds to 0.25 cm^3 , equal to 0.3 g (with density 1.2 g/cm^3). Also see chap. 15.1.

IMPORTANT: DO NOT INVERT THE TUBES IN THE PRODUCTS: IF THIS OCCURS, THE DOSING PUMPS WOULD BE RUINED AND DISHWASHER OPERATION WOULD BE COMPROMISED.

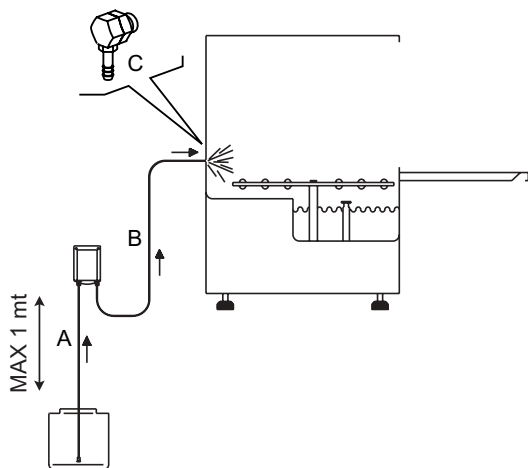
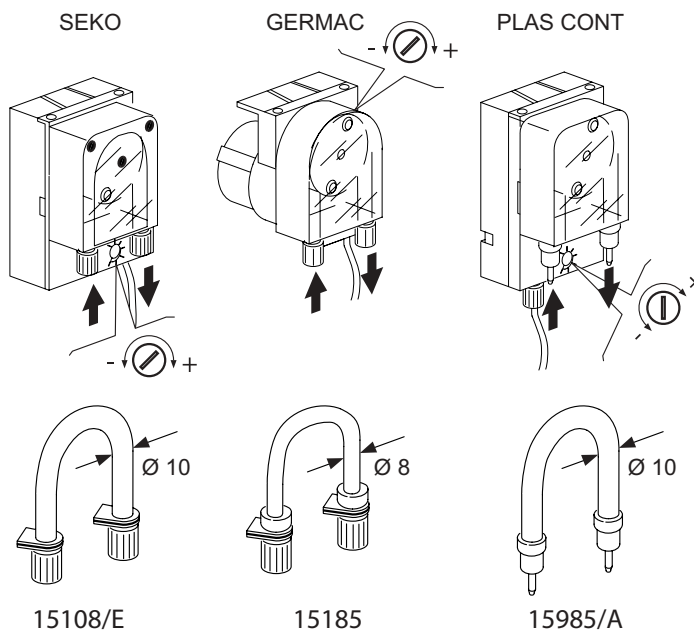


fig. 4

fig. 5

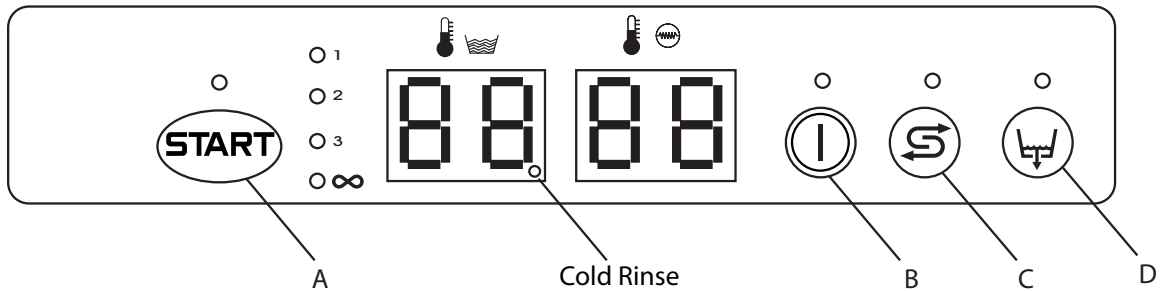


2. CONTROL PANEL AND RELATIVE SYMBOLS

The purpose of these specifications is to describe card operation.

To simplify the description of the various functions, the layout of the control panel and the various functions assumed by the keys according to the function mode is given below.

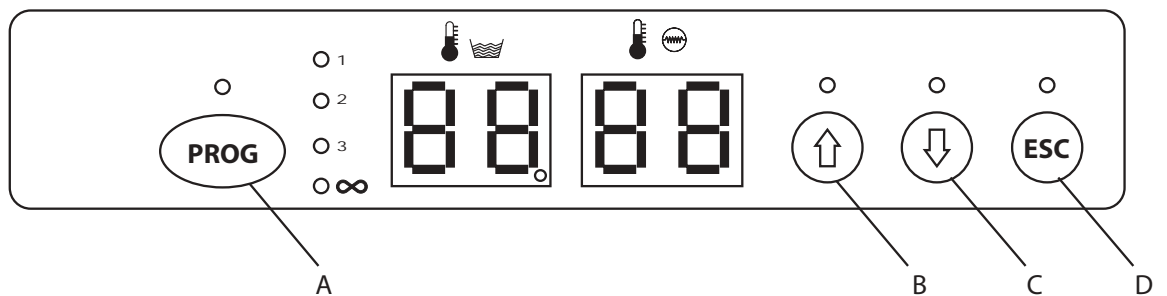
fig. 6



2.1 Functions of keys during normal operation:

- A:** Cycle Start - Cycle Stop - Cycle Selection 1-2-3 ∞ - Self-cleaning;
- B:** On/Off (Stand-By) - Cycle Stop - Alarm Reset;
- C:** Regeneration (optional) - Cold rinse selection (when provided for);
- D:** Drain (when provided for).

fig. 7



2.2 Functions of keys during programming.

- A:** Programming;
- B:** Increase;
- C:** Decrease;
- D:** Exit programming

3. CHARACTERISTICS

3.1 General characteristics

The microprocessor-managed control unit controls the following:

- boiler temperature adjustment;
- tank temperature adjustment;
- wash and rinse function cycles;
- purifying function cycles (when provided for);
- tank emptying cycle (when provided for);
- water filling cycle;
- volumetric meter for controlling water supply flowrate (when provided for);
- displays and programming;
- fault detection and display.

4. MACHINE PROGRAMMING

This section applies to the electronic version with conventional cycle standard and the total water change (CLEAN WATER) electronic version.

N.B.: the conventional cycle version is fitted standard with a flowswitch that controls the presence of supply water and with which, entering programming, a constant consumption of water in the rinse phase can be defined regardless of the supply pressure.

To enter programming:

- press the keys (A) and (B) at the same time, making sure to lightly press the key (B) first, for about 5 seconds, after which the message (Key) will be displayed;
- set the value of the password to (15) with the keys (↑ B) (↓ C);
- confirm the password pressing the key (A); if the password is correct the parameter choice will be accessed, otherwise the message (Err) will be displayed for about 4 seconds.

N.B.: to enter programming the machine must not be washing; if you try to enter programming during washing, the message (no Pr) will be displayed and the dishwasher will continue the cycle.

The machine will automatically exit programming if no key is pressed for about 20 seconds.

4.1 Parameter choice

On entering parameter choice the message (P) will be displayed; press the key (A) repeatedly to define the parameter number (P) (P1, P2, ... PJ).

At this point it will be possible to:

- select the number of the parameter to be modified by pressing the keys (↑ B) (↓ C);
- enter programming of the parameter selected pressing the key (A);
- exit programming pressing the key (D).

4.2 Parameter programming

On entering parameter programming the message (P) and the parameter number followed by the parameter value are displayed.

At this point it will be possible to:

- change the parameter value with the keys (↑ B) (↓ C);
- confirm the value and go to programming of the next parameter, by pressing the key (A);
- return to the parameter selected without changing the data by pressing the key (D).

The following parameters can be changed (see table 2 on the next page):



Parameter programming - pushbutton panel code 50580

tab. 2

Number	Parameter	Min.	Max.	Unit of Measure	Clean Water	Cycle standard	Notes
0	Wash time cycle 1	25	300	s	60s	60s	step 5s
1	Wash time cycle 2	25	300	s	120s	120s	step 5s
2	Wash time cycle 3	25	300	s	180s	180s	step 5s
3	Wash time cycle 4	25	300	s	300s	300s	step 5s
4	Boiler temperature setting (§)	65	90	°C	85°C	85°C	step 1/2°C
5	Tank temperature setting	50	65	°C	55°C	55°C	step 1/2°C
6	Energy-saving threshold cycle 1	10	40	°C	10°C	10°C	
7	Energy-saving threshold cycle 2	10	40	°C	15°C	15°C	
8	Energy-saving threshold cycle 3	10	40	°C	20°C	20°C	
9	Energy-saving threshold cycle 4	10	40	°C	20°C	20°C	
A	Tank draining time	10	99	s	30s	30s	
B	Water filling time-out	60	600	s	100s	300s	step 5s model 40: 120s other models: 300s
C	Supply water hardness	0	40	°f	30	30	step 5s 0=cut out 30=default
D	Rinse water volume	0	99	dl	*	** *** ****	
E	Drain pump enabling	0	1		0	0	only if cycle standard
F	Clean water enabling *****	0	1		1	0	1=clean water
G	Flowswitch enabling	0	1		0	1	1=enabled
H	Start enabling with door	0	1		0	0	1=enabled
I	Cold rinse enabling	0	1		0	0	1=enabled
J	Regeneration cycle enabling	0	1		0	0	1=enabled

* The water volume for rinse in Clean Water machines is regulated by pressure switch and not flowswitch.

** The "Rinse water volume" parameter setting of 2,0 litres is recommended for models 35/37

*** The "Rinse water volume" parameter setting of 2,4 litres is recommended for models 40

**** The "Rinse water volume" parameter setting of 3,0 litres is recommended for models 45/50

***** If the machine is not manufactured for this function, do not enable the parameters

(§) Machine with extra power max. boiler temperature setting 80°C

Parameter programming for atmospheric pressure boiler version - pushbutton panel code 50590 - only for baskets 500x500

tab. 2a

Number	Parameter	Min.	Max.	Unit of Measure	Cycle standard	Notes
0	Wash time cycle 1	25	300	s	60s	step 5s
1	Wash time cycle 2	25	300	s	120s	step 5s
2	Wash time cycle 3	25	300	s	180s	step 5s
3	Wash time cycle 4	25	300	s	300s	step 5s
4	Boiler temperature setting (§)	65	90	°C	85°C	step 1/2°C
5	Tank temperature setting	50	65	°C	55°C	step 1/2°C
6	Energy-saving threshold cycle 1	10	40	°C	10°C	
7	Energy-saving threshold cycle 2	10	40	°C	15°C	
8	Energy-saving threshold cycle 3	10	40	°C	20°C	
9	Energy-saving threshold cycle 4	10	40	°C	20°C	
A	Tank draining time	10	99	s	30s	
B	Water filling time-out	60	600	s	120s	step 5s
C	Supply water hardness*****	0	40	°f	0	step 5s 0=cut out 5=760 lt 10=380 lt 15=300 lt 20= 240 lt 25=200 lt 30=160 lt 35=120 lt 40=100 lt
D	Hot rinse time	10	30	s	15	step 1m
E	Drain pump enabling*****	0	1		0	1=enabled
F	Atmospheric pressure boiler filling time out	60	600	s	120s	step 5s
G	Flowswitch enabling*****	0	1		0	1=enabled
H	Start enabling with door	0	1		0	1=enabled
I	Optionale parameter	0	1		0	1=enabled
J	Regeneration cycle enabling*****	0	1		0	1=enabled

***** If the machine is not manufactured for this function, do not enable the parameters

(§) Machine with extra power max. boiler temperature setting 80°C

5. TEMPERATURE ADJUSTMENT

Boiler temperature adjustment always has priority over that of the tank, and the tank and boiler cannot be switched on at the same time.

To reduce the electrical stress of the loads and output relay contacts, delays and minimum activation times are entered.

The temperature adjustment outputs are kept off in the following cases:

- if the temperatures measured are below 5°C;
- if there is a fault;
- if there is no water.

During wash pump operation the tank heating element does not work.

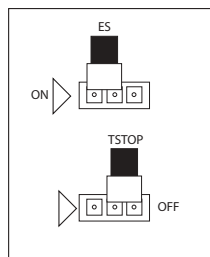


fig. 8

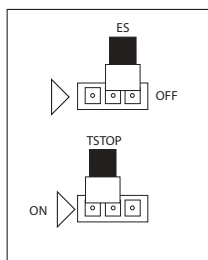


fig. 9

6. ENERGY-SAVING FUNCTION

This function is activated by a jumper (see fig. 8).

The energy-saving function only acts on the boiler temperature adjustment and when the machine is not in operating cycle.

If activated, the temperature setting is decreased, with respect to that entered, by the programmed amount.

During operation the temperature setting returns to that entered.

7. THERMO-STOP FUNCTION

This function is activated by a jumper (see fig. 9).

During the cycle, at the end of wash time, the next phases are carried out after the boiler has reached the set temperature.

If this function is deactivated the machine goes to the subsequent wash cycle phases, whatever the boiler te

8. WATER FILLING

Water filling is controlled by a pressure switch.

Filling occurs by means of the solenoid valve used for the rinse and when the pressure switch contact is open.

There is a maximum water filling time, settable in programming, after which the machine stops if the level is not reached, displaying the message (Er) followed by the relevant fault code.

8.1 Conditions preventing water filling

Water filling is not carried out if the Atmospheric pressure boiler version is being used and boiler filling is under way.

9. BOILER FILLING (Atmospheric pressure boiler version only)

Boiler water filling is controlled by a pressure switch.

There is a maximum boiler water filling time, settable in programming, after which the machine stops if the level is not reached, displaying the message (All) followed by the relative fault code.

9.1 Conditions that zero-set boiler filling.

The boiler filling cycle is cancelled in the following cases:

- if the card is switched off.
- during the hot rinse; boiler filling will resume at the end of the hot rinse.

10. WATER HARDNESS SETTING ON DISHWASHERS WITH OPTIONAL REGENERATION

See table 2 - parameter (C).

Access the parameter (C) and set the hardness value in °f of the water introduced in the dishwasher.

The dishwasher automatically signals when it is time to carry out regeneration.



It's advisable to install an external water softener if the hardness is more than 35°f.

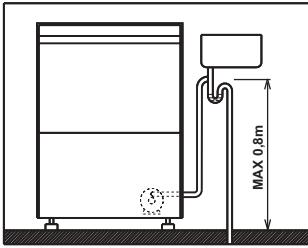


fig. 10

11. DRAIN PUMP OPERATION (optional on standard version machines)

Draining is activated manually or automatically.

For standard version machines the presence of the drain pump is selectable from programming, whereas in (CLEAN WATER) machines the pump is always present.

The maximum height of the drain must not be above 0.80m (see fig. 10). The drain must be ahead of a trap.

11.1 Manual draining

Press the key (D) after removing the overflow and the pump operates for the time set in programming.

The drain pump is activated in the following way:

- activation of a 5sec delay at start;
- activation of the drain pump for the time set in programming, up to the level indicated by the pressure switch.

Note: after the set time and if the level of the pressure switch is at minimum the machine goes on Stand-By, otherwise after about 3min. it goes on water drain alarm (alarms 8 - table 3 - chap. 19.2).

The card must not be activate during manual draining in standard version and clean water.

11.2 Automatic draining

Draining is activated automatically in the following situations:

- at the end of the wash cycle (only if in clean water function mode);
- after 5sec from activation of hot rinse;
- when a cooling cycle in boiler temperature alarm is activated.

Activation of the drain pump always occurs in the following way:

For function mode with standard version:

- activation of a 5sec delay at start;

If the cold rinse is enabled:

- output switch-off after 10sec from the end of cold rinse.

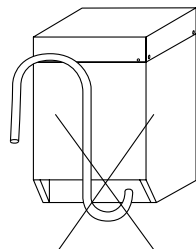
If the cold rinse is not enabled:

- output switch-off after 10sec from the end of hot rinse.

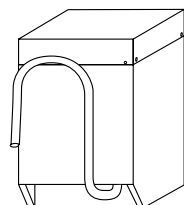
For the function mode with (CLEAN WATER):

- drain pump activation
- wait for reaching of min. level (level pressure switch opening);
- pump activation for a time equal to:
("min. level reaching time" + "programmed drain time").

Drain pump operation occurs even if the door is opened or an alarm is present.



ATTENTION: INCORRECT POSITIONING OF DRAIN PIPE.



ATTENTION: CORRECT POSITIONING OF DRAIN PIPE.

12. PRESSURE INCREASE PUMP (optional)

Following repeated alarms (flowrate alarm 9 - chap. 19.2) or after periods of dishwasher inactivity, make sure the supplementary pressure increase pump rotates freely. To do this, operate by inserting a screwdriver in the special notch on the motor shaft, ventilation side (see fig. 11).

In case of blocking, move the motor shaft, inserting the screwdriver in the notch, turning it clockwise and anticlockwise.

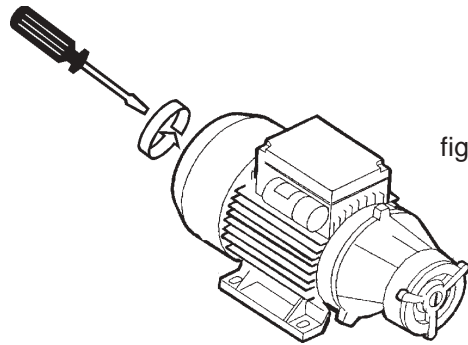


fig. 11



13. WASH CYCLE SELECTION

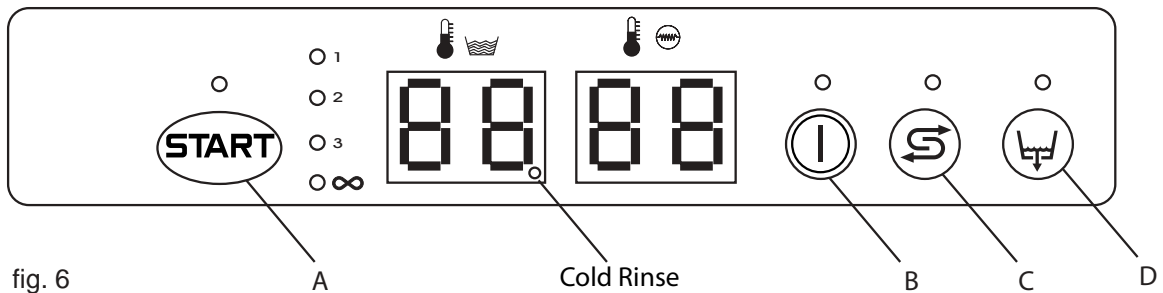


fig. 6

- A:** Cycle Start - Cycle Stop - Cycle Selection 1-2-3 ∞, Self-cleaning;
B: On/Off (Stand-By) - Cycle Stop - Alarm Reset;
C: Regeneration (optional) - Cold rinse selection (when provided for);
D: Drain (when provided for);
 Tank temperature;
 Boiler temperature.

The wash cycle can be selected by pressing the key (START) for more than 5sec. The cycle selected is signalled by lighting of the relevant LED (see front panel).

4 selections can be made:

- cycle 1: the wash time of this cycle is factory-set to 60sec;
- cycle 2: the wash time of this cycle is factory-set to 120sec;
- cycle 3: the wash time of this cycle is factory-set to 180sec;
- cycle 4: the wash time of this cycle is factory-set to 300sec.

Note: the other times, which cannot be changed, relevant to the cycle are given below:

- pause time after wash: 3sec
- if the parameter (Flowswitch) is not enabled, hot rinse time: 15sec
- cold rinse time (at system temperature): 10sec (when provided for)

14. GENERAL OPERATION CYCLE

With the machine activated (green LED on), press the (Start) button for less than 1 second and release it to activate wash cycle start.

Keep the button pressed for more than 5sec to select the required wash cycle.

After the type of cycle has been selected, the relevant LED stays on.



14.1 Clean water function cycle

This working cycle is only for machines clean water version.

The cycle sequence is as follows:

- lighting of selected cycle LED;
- activation of wash pump for the time set in programming;

Note: the wash time can be increased if the thermostat function is activated, which waits for the boiler temperature to reach the set temperature before the cycle goes to the next phases.

- at the end of wash time the pump is switched off and tank emptying is activated;
- after emptying the tank it is filled (rinse);
- at the end of rinse the cycle is finished, signalled by the message (End).

14.2 Standard function cycle

The cycle sequence is as follows:

- lighting of selected cycle LED;
- activation of wash pump for the time set in programming;

Note: the wash time can be increased if the thermostop function is activated, which waits for the boiler temperature to reach the set temperature before the cycle goes to the next phases.

- at the end of wash the cycle the pump is switched off and a 3sec. pause is activated.

If the parameter (Flowswitch) is enabled:

- at the end of the pause the hot rinse for the quantity of water delivered useful for the rinse set in programming, is activated.

If the parameter (Flowswitch) is not enabled:

- at the end of the pause the hot rinse is activated for 15sec.

If the cold rinse is enabled:

- at the end of hot rinse the cold rinse is activated for 10sec.
- after 5sec from the start of hot rinse the drain pump is activated and then deactivated 10sec after the end of cold rinse, even if the door is opened (only if the parameter (Drain Pump) is enabled).

If the cold rinse is not enabled:

- after 5sec from the start of hot rinse the drain pump is activated and then deactivated 10sec after the end of hot rinse, even if the door is opened (only if the programming parameter (Drain Pump) is enabled).
- at the end of hot or cold rinse (if enabled) the cycle finishes, signalled by the message (End).

N.B: Another cycle cannot be restarted:

- if the door is not opened.
- if the (Stop) button is not pressed.
- if the (Off) button is not pressed.

14.3 Conditions that zero-set the wash

The cycle is cancelled, going to stop conditions, in the following cases:

- in case of a fault.
- if the (Stop) button is pressed for more than 2sec.
- if the (Off) button is pressed.

14.4 Conditions preventing the start of washing

The cycle is inhibited in the following cases:

- if the door is open; in this situation the message (Door) is displayed for 4sec:
- if there is no water; in this situation the message (H₂O) will be displayed for 4sec (in version with flowswitch):
- on alarm;
- during tank filling.

14.5 Conditions that block the wash cycle

The cycle times are blocked in the following cases:

- if the door is opened;
- if there is no water (in version with flowswitch).

15. OPERATION

- Insert the overflow pipe in the special seat inside the tank (standard version only). Make sure all the filters are properly fitted in their seats. The filters must be cleaned every 30-40 wash cycles and whenever necessary.
- **Do not operate the machine without filters and in particular the pump suction filters).**
- Close the door.
Open the water cock, turn the main wall switch on and start the machine pressing the key (B) (see fig. 6). The green LED lights up. After a few seconds the tank filling phase starts.
- After filling, the machine automatically starts the heating phase.
- The machine will be ready for washing only when the boiler and tank thermometers indicate that the required temperatures have been reached, which are 80-85°C for boiler and 50-55°C for the tank.
- Insert the special green rinse aid dispenser tube in the liquid rinse aid container (the transparent tube must only be inserted in the detergent container) and check that the quantity is sufficient for the daily requirement.
- Insert the basket with dishes or various articles to be washed and close the door.
- For cycle choice, select the wash cycle (1, 2, 3, ∞) with the key (A) (see fig. 6) keeping it pressed for more than 5 seconds and release when the LED of the required cycle lights up. The green LED of the selected cycle lights up (1, 2, 3, ∞).
- Start the cycle by pressing the key (A) for not more than 1sec (see fig. 6). Starting of the cycle is signalled by the indicator of the selected cycle flashing. At the end of the cycle the indicator stops flashing and the message (END) appears on the display.
- The machine is ready for a new wash.

It is advisable to change the tank water, by means of another filling, at least every 40-50 washes or twice a day.

N.B.: the machine does not accept other cycles until the door is opened or the key (A) is pressed twice (see fig. 6).

The cycles (1, 2, 3, ∞) are factory-set with times of 60 - 120 - 180 - 300 seconds and can be changed with programming by the installer.

Clean the machine at the end of the day (see chap. 16 Maintenance).

Switch the machine off and close the water cock.

15.1 Deterasive use

It must be of the NON-FOAMING type and suitable for industrial dishwashers.

The use of liquid detergents is recommended.

The deterasive must be introduced in the tank.

The amount is recommended by the manufacturers according to the water hardness. By request the dishwasher can be equipped with an electric deterasive dispenser (always recommended).

1cm of product drawn in the transparent tube corresponds to approx. 0.15g. A correct amount of detergent is very important for efficient washing.

15.2 Rinse aid use

The machine comes standard with a rinse aid dispenser. The machine draws the product on its own. The amount can be varied by operating the dispenser micrometrical screw. Turn clockwise to increase the amount and anticlockwise to decrease it.

An amount of 2-5cm of product measurable on the suction tube is recommended. 1cm of product drawn in the green tube corresponds to approx. 0.13g. A correct amount of rinse aid is very important for quick drying and sparkling dishes.

N.B.: too much product, or foam, reduces the efficiency of the wash pump.



15.3 Compliance with the H.A.C.C.P. and hygiene standards.

- The machines are equipped with temperature gauges that indicate the boiler and tank temperatures. Make sure to wait until the tank and boiler temperatures are reached.
- Carefully remove any residuals from the dishes so as not to clog the filter, nozzles and tubing.
- Empty the wash tank and clean the filters at least twice a day.
- Make sure the amounts of detergent and rinse aid are correct (as recommended by the supplier). In the morning, before starting the machine make sure the quantity of product in the tanks is sufficient for the daily requirement.
- Keep the dish support top clean.
- Remove the dish basket using clean gloves or hands so as not to contaminate the cutlery.
- Do not dry or polish the dishes with rags, brushes or dishcloths that are not sterile.

15.4 Drain pump (optional only on standard machines - standard on CLEAN WATER)

The cycle (Drain pump) works in an automatic and independent way.

At the end of the day, to completely empty the tank: Press the key (B) (see fig. 6) and put the machine on stand-by (the red LED comes on), remove the overflow (only on standard version). Close the door then press the key (D) (see fig. 6); the green tank drain indicator comes on for the programmed set time. After emptying, the dishwasher stays on stand-by and the drain LED goes off.

If the alarm (8) appears (see tab. 3 - chap. 19.2) this means that the emptying did not occur in the set time.

Check if the overflow has been removed on the standard version or if the filter is dirty on the CLEAN WATER or the drain is blocked. If this is not the cause, call Technical Assistance.

N.B.: The machine must not be switched on during the emptying phase.

Remove the filters and clean them by hand, rinsing under a jet of water.

IMPORTANT: Always turn the main wall switch off and close the water cock at the end of use.

15.5 Pressure increase pump (optional)

After periods of dishwasher inactivity, the dishwasher supplementary pressure increase pump can become blocked due to oxidation; call Technical Assistance to free the pump if slow filling of the wash tank is noticed (card error no. 9 - chap. 19.2). To do this, operate by inserting a screwdriver in the special notch on the motor shaft, ventilation side (see fig. 13).

In case of blocking, move the motor shaft by inserting the screwdriver in the notch, turning it clockwise and anticlockwise.

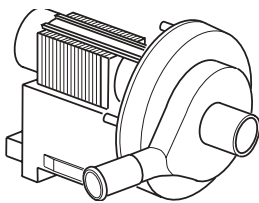


fig. 12

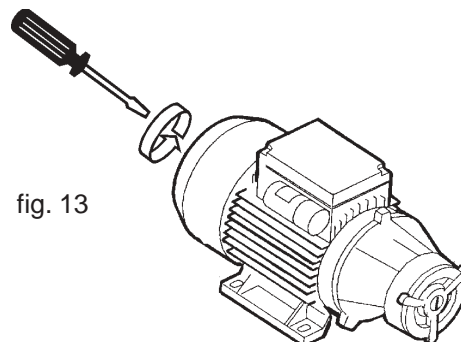


fig. 13

15.6 Regeneration function (optional)

Regeneration is carried out after the flashing signal of the regeneration key indicator (C) (see fig. 6).

The optional regeneration is not allowed in the following conditions:

- during programming;
- during the wash cycle;
- during manual draining;
- while the machine is doing a cycle;
- if the door is open (in this case the message (Door) will be displayed for about 4sec);
- if the tank is full; in this case the message (Er8) will be displayed for about 4sec;
- if the machine is on.

IMPORTANT:

- Before starting a regeneration cycle check if there is salt in the special container.
- Fill the special salt container with tank empty and machine off.
- Rinse the tank immediately if salt is spilled in it.

To start the regeneration cycle, switch the machine off with the key (B). The red LED lights up. Empty the tank. If standard version without drain pump, remove the overflow. If CLEAN WATER with drain pump see chap. 15.4. Close the door. Press the (C) (Regeneration) key for about 3sec.

The regeneration green LED lights up and the machine carries out with the various phases.

The cycle is finished when the indicator (C) goes off, after around 20 minutes.

Note: Regeneration times will be blocked only if the door is opened.

15.7 Cold rinse (optional)

This function can only be enabled in the following cases:

- if the parameter (Cold rinse) is enabled and the supplementary solenoid valve is installed.
- if the machine is on.
- if standard version function mode is enabled (not applicable to CLEAN WATER version machines).

Once activation and deactivation of the cold rinse is enabled, it can be obtained by keeping the key (C) pressed for at least 3sec with the machine on.

During the wash cycle or manual draining the type of rinse selected cannot be changed.

The cold rinse selection is displayed with the decimal point of the second display lighting up.

Note: The cold rinse selection is not memorized and must be set every time the machine is switched off and then on again (if this function is required).

15.8 Energy-Saving function

When enabled, this function lowers the boiler temperature when the machine is waiting for another cycle.

This function offers energy saving.

15.9 Thermostop function

When enabled, at the end of the washing phase this function waits for boiler temperature to be reached, prolonging the wash before starting the rinse.

This is a guarantee to sanitize as expectation of the norm H.A.C.C.P.

16. MAINTENANCE



ATTENTION: The machine is not protected against pressure water jets, therefore do not use such cleaning systems on the cabinet.

It is also advisable to contact cleaning product dealers for detailed information on methods and products for periodical sanitizing of the machine.

Do not use bleach or chlorine-based deteratives for cleaning.

16.1 Routine maintenance

Perfect machine operation depends on careful cleaning, which must be carried out at least once a day, in the following way:



A) Manual cleaning:

- Switch off the dishwasher from the keypad by pressing the key (B) (see fig. 6) and put the machine on stand-by.
- Drain the water, removing the overflow pipe (standard version). For machines equipped with drain pump and for the CLEAN WATER version carry out emptying before cleaning (see chap. 15.4).
- Turn the main wall switch off and close the water cock.
- Remove the filters and clean them with a brush under a strong jet of water.
- Remove the impellers by undoing the fixing screws and carefully clean the nozzles, wash arms and rinse under running water.
- Refit all the parts and arrange the impellers in their seats, securing them with the relative fixing screw.
- Carefully clean the tank; do not use chlorine-based deteratives.
- At the end of the day it is advisable to leave the machine door open.

N.B.: It is advisable to change the tank water, by new filling, at least every 40-50 washes or twice a day. Do not use metal scouring pads to clean and/or corrosive products that can damage the machine.

B) Automatic cleaning cycle (if enabled by program):

The (Cleaning) cycle works in an independent way.

The cycle is inhibited if the door is open or the tank is full. The relative messages (Door) or (H₂O) appear on the display.

- Put the dishwasher on stand-by pressing the key (B) (see fig.).
- With the empty tank, press the START (A) key for 3 seconds. The relative green LED lights up and the message (CLEAN) appears on the display.
- A cleaning cycle is activated with door closed. A rinse is carried out for 20 seconds with the hot water in the boiler to rinse the tank and the washing chamber.

N.B: If the tank has not been emptied the (Cleaning) cycle will not start and the message (H₂O) is displayed.

At the end of the cycle the green LED goes off; then turn the main wall switch off and close the water cock.

The filters must be cleaned by hand. Then proceed as for routine maintenance.

16.2 Extraordinary maintenance

Once or twice a year have the machine checked by a qualified technician, to:

- Clean the solenoid valve filter;
- Remove scale from the heating elements;
- Check the tightness of seals;
- Check the integrity and/or wear of components;
- Check the functionality of the dispensers;
- Have the electrical connection terminals tightened at least once a year by Technical Assistance.

17. THE ENVIRONMENT

17.1 Packing

The packing consists of the following:

- a wooden pallet;
- a nylon (LDPE) bag;
- a multilayer cardboard box;
- polystyrene foam (PS);
- polypropylene (PP) straps.

Please dispose of the materials listed above, according to the current regulations.

17.2 Disposal

The machine must be disposed of in compliance with current regulations: contact the Municipalized Company responsible for collection of urban solid waste.

Disconnect the machine from the electrical and water supply before disposal.

Cut off the electrical cable in order to make any other use impossible.

All the metal parts are recyclable as they are in stainless steel.

Recyclable plastic parts are marked with the symbol of the plastic material.

18. ECOLOGY

18.1 Instructions for optimal use of energy, water and additives

Salt dosage

The salt is injected in the resins with every regeneration cycle in a quantity fixed by the manufacturer. It is important to carry out regeneration when the machine signals it in order to avoid wasting salt or clogging due to scale.

If possible, use the machine at full load.

This will avoid wasting detergent, rinse aid, water and energy.

Detergents and rinse aids

Use detergents and rinse aids having the highest biodegradability, for greater environmental respect. Have the correct dosage according to the water hardness checked at least once a year. An excess of product pollutes rivers and seas, whereas an insufficient amount compromises dish washing and/or hygiene.

Tank and boiler temperatures

The tank and boiler temperatures are factory-set in order to obtain the best washing result with the majority of detergents available on the market. These can be reset by the installer according to the detergent used.

Removing residuals

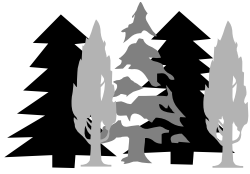
Carefully remove any residuals using a moderate amount of water at room temperature to facilitate the removal of animal fats. To remove encrusted matter, soaking in hot water is recommended.

Notes:

Wash objects as soon as possible to prevent the deposits from drying and compromising washing efficiency.

For efficient washing carry out regular cleaning and servicing of the dishwasher (see chap. 16).

Non-compliance with the above points and all the information described in this manual could determine a waste of energy, water and detergent, with consequent increase in operating costs and/or decrease in performance.



19. ALARM AND FAULT DETECTION AND DISPLAY

19.1 Detection



The following faults are managed and displayed:

- sensors: when they are in short-circuit or interrupted, or when the temperatures measured are below 0°C or above 125°C;
- boiler overtemperature: when the boiler temperature exceeds 105°C;
- tank overtemperature: when the tank temperature exceeds 90°C;
- boiler heating failure: if the set temperature is not reached within 15min. of boiler heating element activation;
- tank heating failure: if the set temperature is not reached within 1h of tank heating element activation;
- water loading: if filling is not completed within the set time;
- drain alarm: if the tank is not empty within 3 min. of drain activation;
- flowrate alarm: if the water supply flowrate is less than 4 litres/minute (if enabled);
- filter alarm: in case of filter failure (if enabled).

19.2 Signalling

Faults are signalled by displaying the message (Er) followed by the fault code (see table 3 and 4 to the following page).

19.3 Cancelling alarms or faults

Alarms or faults can be cancelled by pressing the button (B) for about 3 seconds; in this way the machine goes on stand-by signalled by the red LED (Off).

To reactivate the machine press the button (B) again.

If the fault has been repaired the machine displays the tank and boiler temperatures, otherwise the alarm message will reappear.

19.4 Boiler overtemperature alarm

This type of alarm is activated when the boiler temperature exceeds 105°C.

At the same time also boiler cooling is activated and occurs in the following way:

- introduction of cold water, by means of the water fill/rinse solenoid valve, for the quantity of water delivered useful for the rinse set in programming;

If the parameter (Flowswitch) is not enabled:

- introduction of cold water, by means of the water fill/rinse solenoid valve for approx. 15 sec;
- 43sec pause

This cycle is repeated until the boiler temperature falls below 105°C.

The cooling function is not executed or is stopped if the door is opened.

tab. 3

Signaling faults - pushbutton panel code 50580

table 3

TYPE OF FAULT	FAULT CODE	CURE
Faulty boiler sensor	1	Replace sensor
Faulty tank sensor	2	Replace sensor
Water load	3	Cock closed or water supply failure
Boiler heating failure	4	Check sensor or heating element Call Technical Assistance
Tank heating failure	5	Check sensor or heating element. Call Technical Assistance
Boiler overtemperature	6	Faulty sensor/faulty control unit Call Technical Assistance
Tank overtemperature	7	Faulty sensor/faulty control unit Call Technical Assistance
Drain	8	Overflow not removed.
		Drain filter dirty on CLEAN WATER.
		Drain blocked. Drain pump damaged
Flowrate alarm	9	Check water supply pressure - min. 4 l/min. Cock closed. Make sure the pressure increase pump is not blocked. Call Technical Assistance
Filter failure	10	No filter
Open door/Door micro	Door	Closed the door. Check the micro safety door

Signaling faults - pushbutton panel code 50590 - only for baskets 500x500

table 4

TYPE OF FAULT	FAULT CODE	CURE
Faulty boiler sensor	1	Replace sensor
Faulty tank sensor	2	Replace sensor
Water load	3	Cock closed or water supply failure
Boiler heating failure	4	Check sensor or heating element Call Technical Assistance
Tank heating failure	5	Check sensor or heating element. Call Technical Assistance
Boiler overtemperature	6	Faulty sensor/faulty control unit Call Technical Assistance
Tank overtemperature	7	Faulty sensor/faulty control unit Call Technical Assistance
Drain	8	Overflow not removed.
		Drain blocked.
		Drain pump damaged
Flowrate alarm	9	Check water supply pressure - min. 4 l/min. Cock closed. Make sure the pressure increase pump is not blocked. Call Technical Assistance
Boiler not filled	10	Cock closed or water supply failure
Rinse missed	11	Drain pump damaged. Call Technical Assistance

20. TROUBLESHOOTING

Type of problem	Possible causes	Cure
The machine does not start	Main switch turned off	Turn switch on
The machine does not load water	Water supply cock closed	Open the water cock
	Spraying arm nozzles clogged	Clean the spraying arm nozzles and the pipes. If the machine is clean, check the salt or carry out regeneration more frequently
	Solenoid valve filter clogged with sand	Clean the filter
	Faulty pressure switch	Replace the pressure switch
Inadequate washing results	The washing nozzles are clogged or the washing arms do not turn	Unscrew and clean the nozzles and the rotation shaft and correctly refit everything in the special seats
	Detergent concentration too low	Change the amounts of detergent
	Filters too dirty	Remove and clean the filters with a brush under a jet of water then refit them in their seats
	Presence of foam	Use a non-foaming detergent or reduce the amounts of that used. Also check the rinse aid dosage
	Fats or starches not removed	Inadequate concentration of detergent
	Check the tank temperature (it must be between 50°C and 60°C)	Adjust the thermostat or check correct operation of the heating element
	During wash, insufficient for the type of dirt	Select the longest cycle when possible, otherwise repeat the wash cycle
	Washing water too dirty	Drain the tank water, clean the filters; refill the tank and correctly refit the filters
Pots and dishes are not properly dried	Insufficient rinse aid dosage	Increase the amount by adjusting the dispenser screw (see par. "Rinse aid dispenser")
	Basket unsuitable for the pots and dishes	Use a suitable basket that allows the pots to be tilted so that the water runs off
	The dishes may have been inside the tank for too long	As soon as the wash cycle is over immediately remove the basket with pots and dishes so that they can dry quicker with air
	Rinse water temperature below 80°C	Check the boiler thermostat temperature - chap. 11. If necessary have Technical Assistance set the correct value
	If the machine is fed with cold water	Use the long cycle
Streaks or smears on pots and dishes	Rinse aid concentration too high	Reduce the rinse aid concentration by means of the dispenser micrometrical screw (see par. "Rinse aid dispenser 1.4")
	Water too hard	Check the quality of the water. The water hardness must not be more than 10°f
	For machines with purifier: insufficient salt in the special container or the resins were not correctly regenerated	Fill the salt container (coarse salt: grains 1-2mm). If scale is also noticed on the cabinet, have the purifier checked by qualified personnel. Adjust the degree of water hardness in the card - page 39.
	Salt in the machine tank	Thoroughly clean and rinse the machine and avoid spilling the product when filling the salt container
During operation the machine suddenly stops	The machine is connected to an overload system	Connect the machine separately (call the authorized personnel)
	A machine safety device has triggered	Check the safety devices (call the authorized personnel)
During the wash phase the machine stops and replenishes water	The previous day's water was not changed	Empty the tank and carry out a new filling
	Temperature of water in tank too high	Have the thermostat and pressure switch checked by the Assistance Centre
	Faulty pressure switch	Remove and correctly position the overflow
The booster pump can't prime	Little pressure on feeding	Take out the boiler pipe and drain the pump
The machine does not wash and the wash pump is noisy on machines with three-phase pump	The pump direction is inverted due to incorrect power cable connection	Check and correctly connect the cable wires
Rinse aid dispenser problems	See chap. 1.4	Technical Assistance - chap. 1.4

N.B. For any other problems, contact the Technical Assistance service.
The manufacturer reserves the right to alter the technical characteristics without prior notice.