





Thank you for purchasing one of our appliances.

The instructions for installation, maintenance and use given on the following pages have been prepared to ensure the long life and perfect operation of your appliance.

Carefully follow these instructions.

We have designed and built this appliance according to the latest technological innovations. Now, it is up to you to look after it.

Your satisfaction is our best reward.

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**CAREFULLY READ THE INSTRUCTIONS BEFORE INSTALLING THE MACHINE.**



**IMPORTANT: ANY NON-COMPLIANCE WITH THE REGULATIONS SPECIFIED 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 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.
- **The dishwasher is designed for washing dishes, glasses, trays and small patisserie/ bakery utensils. Any other use is deemed improper. DO NOT** wash articles polluted with petrol, paint, bits of steel or iron, fragile objects or material not resistant to the washing process. Do not use chemical, corrosive, acid or alkaline products, solvents or chlorine-based detergives.
- 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. In any case contact qualified 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.**



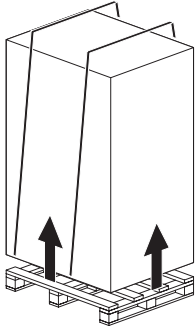
**IMPORTANT: WAIT AT LEAST 10 MINUTES AFTER THE MACHINE HAS BEEN SWITCHED OFF BEFORE CLEANING INSIDE IT.**



**WARNING: DO NOT INSERT HANDS AND/OR TOUCH THE PARTS AT THE BOTTOM OF THE TANK WITH THE MACHINE ON AND/OR HOT.**

**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. 19.

**1.2 Water connection**

Pressure table	Min	Max
	KPa	KPa
Static P	250	500
Dynamic P	200	400
Hardness	2 °f	10 °f

tab.1

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 the supply pressure is higher than 5 bar (500 KPa), installation of a pressure reducer is recommended.

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

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 (max 220 mm - see fig. 3), 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.

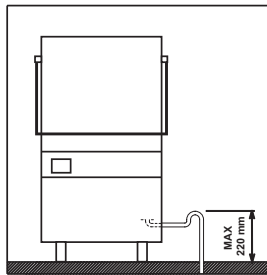


fig. 3

**1.3 Electrical connection**

The 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 the symbol (see fig.1) used for the equipotential connection between different appliances. The dataplate gives the max. power value in watts (W) and amperes (A), for dimensioning of the line, cable and switches.

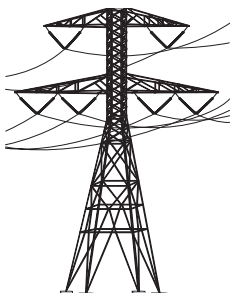


fig. 1



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.

Warning: some versions of this machine can dissipate more than 10mA to earth.

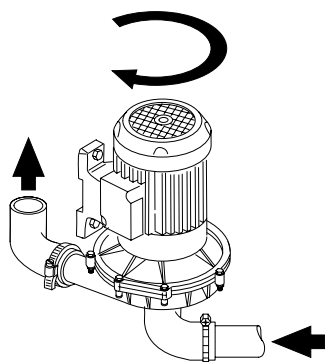


fig. 2

Start up the dishwasher and carry out possible calibration of the deteritive dispenser in the following way:

- 1) Turn the wall switch on and open the water cock.
- 2) Switch the dishwasher on by pressing the key (B) (see par. 2). The relative green LED lights up.
- 3) The machine starts to fill with water (Important: do not open the hood).
- 4) At the end of boiler filling, rinsing starts, to complete the tank filling. After filling, the boiler and then tank heating starts.
- 5) Check correct wash pump rotation because, in being three-phase, it could turn in the opposite direction. In addition to the arrow, this can be noticed by excessive noise during the washing cycle (see fig. 2).
- 6) 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 (17)) indicating fault code (7) (see chap. 21.2)

#### 1.4 Rinse aid dispenser operation

##### Operation:

it utilizes the water supply pressure min. 200 kPa.

##### Water connection (only in case of replacement):

- 1) use the rubber hose holder installed in the machine to connect the dispenser by its connection (B) to the special union located near the boiler (injector).
- 2) The green tube coming from the suction connection (C) must be inserted, with the filter and relative ballast, in the rinse aid drawing tank (always during use).

##### Priming:

To carry out priming, start the machine and carry out a few complete wash and rinse cycles or press the adjustment screw (D) repeatedly.

##### Adjustment:

With every rinse the dispenser draws a quantity of rinse aid adjustable from 0 to 4 cm<sup>3</sup> 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 product manufacturer's note (also see par. 17.4).

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 cm<sup>3</sup>/turn (approx. 0.21g/turn with rinse aid density of 1.05 g/cm<sup>3</sup>).

The rinse aid dispenser cannot work correctly if the difference in level between the bottom of the machine and the tank is more than 40 cm.

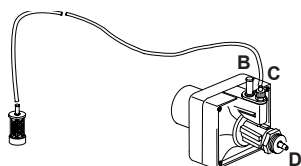


fig. 4

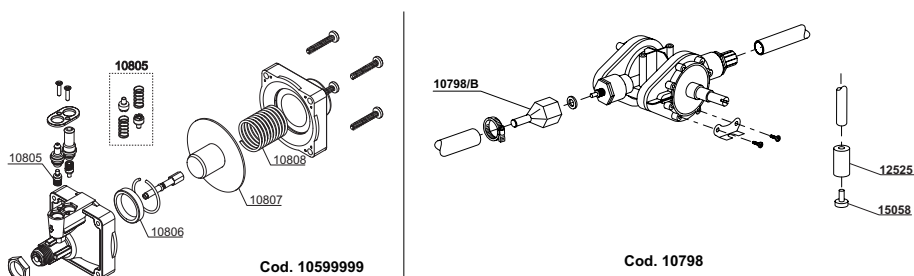


fig. 5

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 HARDNESS OF THE WATER.



TROUBLESHOOTING (PROBLEMS)	TROUBLESHOOTING (CAUSES AND CURES)
Water comes out the rinse aid suction tube	The delivery and intake valves 10805 are not tight due to foreign bodies in the Clean the valves 10805 and check that the rinse aid suction filter is present. Make sure there are no crystals or solid pieces inside the tank due to dried old product.
The dispenser does not draw rinse aid	a) the delivery valve 10805 is not tight due to foreign bodies in the closing seats. Check the valves and make sure the water supply pressure is not below 30 kPa Clean the valve 10805 and check that the rinse aid suction filter is present b) the piston gasket 10806 is ruined Replace the gasket 10806 with an original one c) check the integrity of the membrane 10807

### 1.5 Deterasive dispenser installation

#### Electrical connection:

See the wiring diagram attached to the dishwasher.

#### Water connection:

- In the dishwasher, the hole for inserting the injector is already available and closed with a plastic plug. Just remove the plug from the hole and fit the delivery connection (located at the front, below the control panel).
- Correctly install the injector (C), using the appropriate seals.
- Connect the suction tube to the dispenser suction connection (see fig. 6 - point A).
- Connect the delivery tube to the other connection of the dispenser and the delivery union (see fig. 6 - point B).
- Insert the tube with filter in the deterasive tank.
- Prime the deterasive and proceed with the dosage phase.

#### Dosage:

The deterasive dispenser delivery can be adjusted by directly operating with a screwdriver as shown in fig. 7. Turn it all the way clockwise, entering card programming and adjust the injection time (see tables 2 and 3 page 36/37 - parameters 15).

Every 2 cm of product drawn corresponds to 0.25 cm<sup>3</sup>, equal to 0.3 g (with density 1.2 g/cm<sup>3</sup>). Also see par. 16.1.

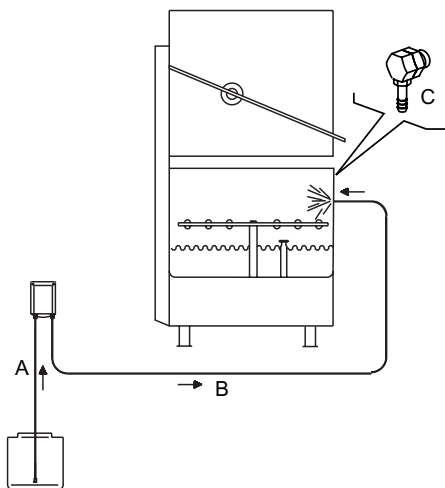


fig. 6

fig. 7

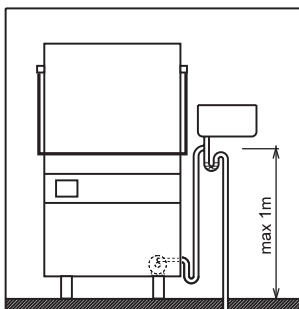
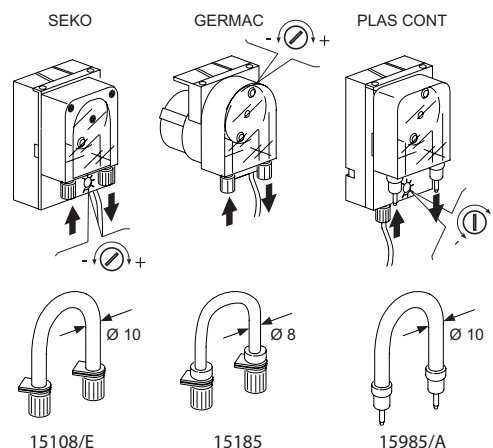


fig. 8

### 1.6 Installing the drain pump (optional)

When installing, pay particular attention to the position of the drain hose (see fig. 8). The drain pump can be installed if the wall drain is at a height of at least 220 mm. Max. drain height <1m; there must be a trap downstream of the drain. For the electrical connection see the wiring diagram notes.

### 1.7 Pressure increase pump

After periods of dishwasher inactivity and/or following repeated alarms (7) (see chap. 21.2), 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. 9).

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

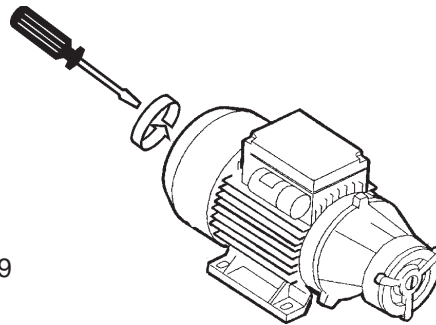


fig. 9

## 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.

### 2.1 Functions of keys during normal operation

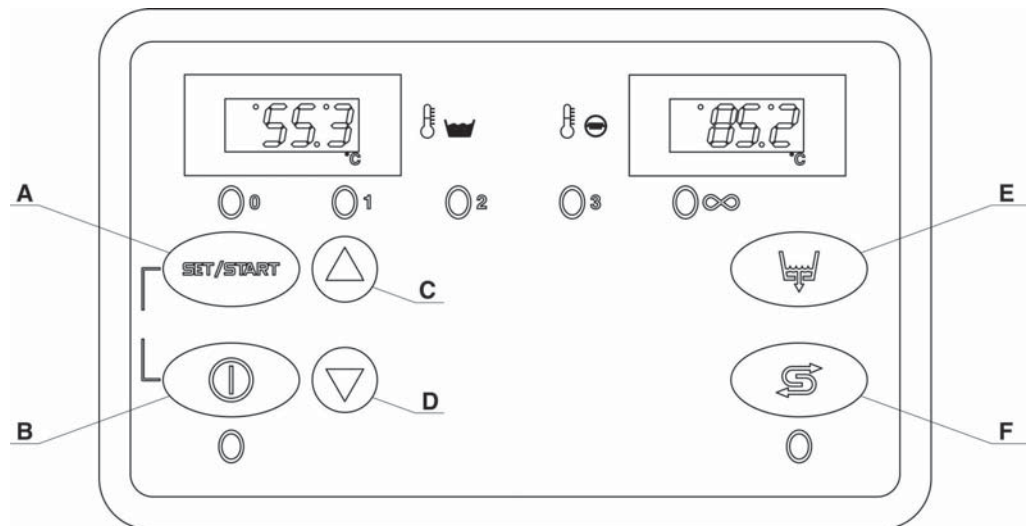


fig. 10

- A: Cycle Start - User Cycle Time Programming;
- B: On/Off (Stand-By) - Cycle Stop - Alarm Reset;
- C: Cycle Selection;
- D: Cycle Selection;
- E: Tank Draining (optional);
- F: Regeneration - Cleaning (if enabled).



## 2.2 Functions of keys during programming

- A: Programming;
- B: Output;
- C: Increase;
- D: Decrease;
- E: Cut out;
- F: Cut out.

## 3. CHARACTERISTICS

### 3.1 General characteristics

The microprocessor-managed control unit controls the following:

- boiler temperature adjustment;
- tank temperature adjustment;
- timed detergent concentration adjustment;
- water filling;
- boiler water filling;
- function cycles;
- faults.

## 4. MACHINE PROGRAMMING

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 (↑) (↓);
- confirm the password by pressing the key (A); if the password is correct the parameter choice will be accessed, otherwise the message (Key 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 Prg) will be displayed and the machine 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 (Pr) will be displayed; press the key (A) repeatedly to define the parameter number (P) (P1, P2, ... P20).

At this point it will be possible to:

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

### 4.2 Parameter programming

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

At this point it will be possible to:

- change the parameter value with the keys (↑) (↓);
- 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 (B).

The following parameters can be changed (see tables 2 and 3 on the next page):

**Electronic version - pushbutton panel code 50570**

P	Parameter	Min.	MAX.	Unit of Measure	Default	Notes
1	Wash time cycle 1	25	720	s	30s	step 5s
2	Pause time cycle 1	3	10	s	3s	
3	Rinse time cycle 1	10	20	s	15s	
4	Wash time cycle 2	25	720	s	80s	step 5s
5	Pause time cycle 2	3	10	s	3s	
6	Rinse time cycle 2	10	20	s	15s	
7	Wash time cycle 3	25	720	s	130s	step 5s
8	Pause time cycle 3	3	10	s	3s	
9	Rinse time cycle 3	10	20	s	15s	
10	Boiler temperature setting (§)	65	90	°C	85°C	step 1/2°C
11	Tank temperature setting	50	65	°C	55°C	step 1/2°C
12	Energy-saving threshold cycle 1	10	40	°C	10°C	
13	Energy-saving threshold cycle 2	10	40	°C	15°C	
14	Energy-saving threshold cycle 3	10	40	°C	20°C	
15	Detergent delivery time for cycle (*)	10	30	s	13s	
16	Final tank draining time	60	600	s	300s	step 5s
17	Water filling time-out	60	600	s	600s	step 5s
18	Atmospheric pressure boiler filling time-out	60	600	s	250s	
19	Start enabling with hood	0	1		1	1=enabled
20	Energy saving enabling	0	1		1	1=enabled
21	Thermostop enabling	0	1		1	1=enabled
22	Drain pump enabling	0	1		0	1=enabled
23	Degrees hardness water for regeneration (**)	0	1		0	step 5s
						0 = reg. excluded
						5°f = 250 cycles
						10°f = 180 cycles
						15°f = 140 cycles
						20°f = 110 cycles
						25°f = 95 cycles
						30°f = 75 cycles
35°f = 55 cycles						
40°f = 45 cycles						
∞	Wash time ∞	0	720	s	720	

(\*) automatically quadrupled with every tank filling

(\*\*) Do a correct analysis of the hardness of the water to plan the real degrees of hardness

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

tab. 2



## Atmospheric pressure boiler version - pushbutton panel code 50570/B

P	Parameter	Min.	MAX.	Unit of Measure	Default	Notes
1	Wash time cycle 1	25	720	s	35s	step 5s
2	Pause time cycle 1	3	10	s	3s	
3	Rinse time cycle 1	10	20	s	20s	
4	Wash time cycle 2	25	720	s	80s	step 5s
5	Pause time cycle 2	3	10	s	3s	
6	Rinse time cycle 2	10	20	s	20s	
7	Wash time cycle 3	25	720	s	130s	step 5s
8	Pause time cycle 3	3	10	s	3s	
9	Rinse time cycle 3	10	20	s	20s	
10	Boiler temperature setting (§)	65	90	°C	85°C	step 1/2°C
11	Tank temperature setting	50	65	°C	55°C	step 1/2°C
12	Energy-saving threshold cycle 1	10	40	°C	10°C	
13	Energy-saving threshold cycle 2	10	40	°C	15°C	
14	Energy-saving threshold cycle 3	10	40	°C	20°C	
15	Detergent delivery time for cycle (*)	10	30	s	13s	
16	Final tank draining time	60	600	s	300s	step 5s
17	Water filling time-out	60	600	s	600s	step 5s
18	Atmospheric pressure boiler filling time-out	60	600	s	60s	step 5s
19	Start enabling with hood	0	1		1	1=enabled
20	Energy saving enabling	0	1		1	1=enabled
21	Thermostop enabling	0	1		1	1=enabled
22	Drain pump enabling	0	1		0	1=enabled
23	Regeneration enabling	0	1		0	°f not applicable
∞	Wash time ∞	0	720	s	720	

(\*) automatically quadrupled with every tank filling

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

tab. 3

## 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.

Delays and minimum activation times are entered to reduce the electrical stress of the loads and output relay contacts.

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;
- if the card is switched off.

In the “Atmospheric pressure boiler version”, the boiler temperature adjustment output is kept off in the following cases:

- during the rinse phase;
- if there is no water in the boiler.

### 5.1 Switch-on minimum times and delays

At least 3s must elapse between output switch-off and switch-on, whereas when the output is switched on it remains activated for at least 5s.

## 6. ENERGY-SAVING FUNCTION

This function is activated by programming.

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.

**Note:** the temperature decrease is set to 20°C for the user cycle and the 0 cycle (stand-by).

## 7. THERMO-STOP FUNCTION

This function is activated by programming.

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 temperature.

## 8. START WITH DOOR FUNCTION

This function is activated by programming.

The “Start with door” function allows the wash cycle to be started as soon as the door is closed.

The button “B” can in any case be used to stop the wash cycle.

## 9. DOOR OPENING PISTON FUNCTION (optional)

The machine is equipped with an automatic system for the opening of the hood. during the first installation it is necessary to made at least 3 cycles to activate the automatic system.

Control of the door opening piston is only possible if the expansion card is present and the Atmospheric pressure boiler version is not active.

It is activated at the end of the wash cycle.

Piston operation always occurs in the following way:

- output switched on for 1s (to allow the steam in the tank to escape);
- pause with output switched off for 3s;
- activation of output for 7s.

**NOTE FOR USER:** In order to permit the dripping and the first exit of steam, the opening of the hood is made in two stages.



## 10. DETERGENT DELIVERY

Detergent delivery is timed and the duration can be set from 10s to 30s. This setting is valid during the wash cycle, whereas during water filling the set time is quadrupled.

If the door is opened delivery is cancelled in washing and also in water filling.

## 11. 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 "All" followed by the relative fault code.

**N.B.:** if programming is entered during water filling, filling is immediately stopped; water filling resumes on quitting programming.

### 11.1 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.

## 12. BOILER FILLING (Atmospheric pressure boiler version only)

Boiler water filling is controlled by a pressure switch.

Filling occurs by means of the solenoid valve on the "Dihrexp" expansion and when the pressure switch contact is closed.

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.

### 12.1 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.

## 13. CONTROL UNIT CONNECTION DIAGRAM

**To connect the control unit, see the wiring diagram attached to the machine.**

### Notes:

- The trimmers for adjusting tank temperature, boiler temperature and detergent delivery time (TR1, TR2, TR3) are not used (main card).
- The jumpers for enabling the energy-saving function and thermostop (JP1, JP2) are not used (main card).
- Before connecting the user interface card make sure the uP (IC2) is not present on the power card (main card).
- Do not insert the connector CN3 if the expansion card for regeneration (mother card) is not present.

## 14. WATER HARDNESS SETTING ON DISHWASHERS WITH OPTIONAL REGENERATION

See table 2 - parameter (23).

Access the parameter (23) 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 is advisable to install an external water softener if the hardness is more than 35°f.

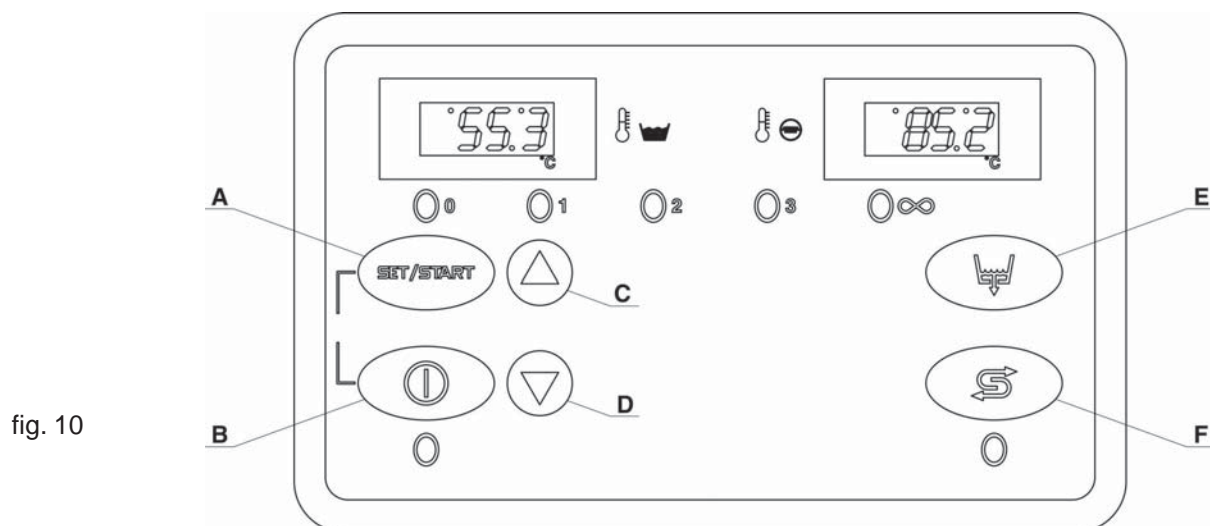


## 15. CONTROL PANEL AND RELATIVE SYMBOLS

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.

### 15.1 Functions of keys during normal operation



- A:** Cycle Start - User Cycle Time Programming;
- B:** Switch-off (Stand-By) - Cycle Stop - Alarm Reset;
- C:** Cycle Selection;
- D:** Cycle Selection;
- E:** Tank Draining (optional);
- F:** Regeneration (optional) - Cleaning;
- 🌡️🪴 : Tank Temperature;
- 🌡️⊖ : Boiler temperature.

## 16. CHARACTERISTICS

### 16.1 General characteristics

The microprocessor-managed control unit controls the following:

- boiler temperature adjustment;
- tank temperature adjustment;
- timed detergent concentration adjustment;
- water filling;
- boiler water filling;
- function cycles;
- faults.



## 17. OPERATION

- Insert the overflow pipe in the special seat inside the tank. 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 hood.  
Open the water cock, turn the main wall switch on and start the machine by pressing the key (B) (see fig. 10). 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 the boiler and 50-55°C for the tank.
- Insert the special green rinse aid dispenser tube in the liquid rinse aid 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 hood.
- Put the detergent in the tank before starting the wash cycle. If the optional detergent dispenser is provided for, insert the transparent tube in the detergent tank. Check that the quantity is sufficient for the daily requirement
- Select the wash cycle by means of the keys (C/D) (see fig. 10). The green LED of the selected cycle (0, 1, 2, 3, ∞) lights up.
- Start the cycle by closing the hood. 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 50 washes or twice a day.

N.B.: The machine does not accept other cycles until the hood is opened or the key (A) is pressed twice (see fig. 10).

The cycles (1, 2, 3,) are factory-set with times of 50" - 100" - 150". The user can vary the cycle (∞) from 100 to 300 seconds, in the following way:

- Select the cycle (∞) with the keys (C/D) (see fig. 10). Press the START key (A). TIN flashing will appear on the left display. On the right display select the required time in increasing or decreasing order with the keys (C/D), then press START again to confirm. Min. 100s - Max 300s
- The set time remains stored. To change it, repeat the sequences indicated.

### 17.1 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.

### 17.2 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 (H<sub>2</sub>O) will be displayed for 4sec (in version with flowswitch):
- on alarm;
- during tank filling.

### 17.3 Detergent use

It must be of the NON-FOAMING type and suitable for industrial dishwashers. The use of liquid detergents is recommended.

The detergent must be introduced in the tank.



The amount is recommended by the manufacturers. By request the dishwasher can be equipped with an adjustable automatic electric detergent dispenser, managed by the electronic card.

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

#### 17.4 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.

#### 17.5 Compliance with 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 set 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.

#### 17.6 Drain pump (optional)

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

At the end of the day, to completely empty the tank: When opened door and machine switched on, remove the overflow, then press the key (E) (see fig. 10); the message (UNLOAD) appears and the drain key indicator lights up. After emptying, the message (UNLOAD) disappears and the drain indicator goes off; the machine goes on stand-by. **IMPORTANT:** Always turn the main wall switch off and close the water cock at the end of use.

#### 17.7 Regeneration (optional)

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

Regeneration is carried out after the flashing signal of the regeneration key indicator (F) (see fig. 10).

**Note:** the signal will be present only if the parameter has been planned.

Regeneration is not allowed in the following conditions:

- during programming;
- during the wash cycle;
- during manual draining;
- while the machine is on Stand-By;
- if the hood is open (in this case the message (Door) will be displayed for about 4sec).

Before starting the regeneration cycle make sure there is salt in the container. Fill the salt container with 1 kg of coarse salt, with the machine switched off. Remove the overflow, switch the machine on with key (B) and press the (Regeneration) key (F) (see fig. 10) for about 3sec.

**N.B.:** Rinse the tank if salt is spilled it.

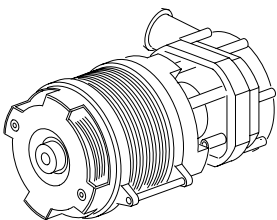


fig. 11

At this point the message "**Regen**" appears and the machine proceeds with the following phases:

- tank draining for the time set in programming (if the drain pump is available).

**N.B.:** the tank draining phase will not be carried out if the tank is already empty.

The regeneration cycle lasts about 20 minutes. After which the machine goes on stand-by.

Important: at the end of the day, turn the main wall switch off and close the water cock. Regeneration will be stopped in the following cases:

- if the tank is still not empty after draining;
- if the door is opened;

**Note:** in these cases the alarm message followed by the respective code will be displayed.

### 17.8 Energy-Saving function

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

This function offers energy saving

### 17.9 Thermostop function

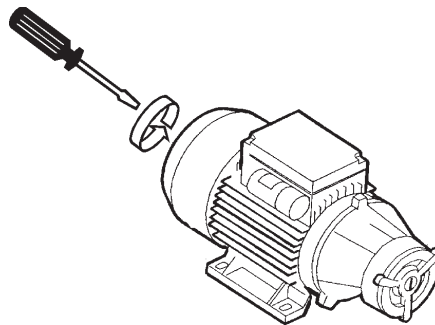
When enabled, at the end of the washing phase this function waits for boiler temperature to be reached, prolonging the wash before starting the rinse.

The thermostop function is essential for short cycles if the machine is fed with cold water.

### 17.10 Pressure increase pump

After periods of dishwasher inactivity, the pressure increase pump can become blocked due to oxidation. If the alarm (water filling (7) see chap. 21.2) is activated call Technical Assistance for clearing.

fig. 12



## 18. MAINTENANCE



**ATTENTION:** The machine is not protected against pressure water jets, therefore not do 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.

### 18.1 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. 10) and put the machine on stand-by.
- Turn the main wall switch off (IMPORTANT) and close the water cock.
- Drain the water, removing the overflow pipe. For machines equipped with drain pump carry out emptying before cleaning (see chap. 17.6).
- 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 hood 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 or corrosive products for cleaning.

#### B) Automatic cleaning cycle:

The "Cleaning" cycle works in an independent way.

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

- Put the dishwasher on stand-by by pressing the key (B) (see fig. 10).
- Press the (F) key for 3 seconds. The corresponding 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.

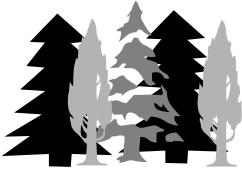
The filters must be cleaned by hand.

Turn the main wall switch off at the end of use.

### 18.2 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.



## 19. THE ENVIRONMENT

### 19.1 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.

### 19.2 Disposal

The use of the WEEE Symbol indicates that this product may not be treated as household waste. By ensuring this product is disposed of correctly, you will help protect the environment. For more detailed information about the recycling of this product, please contact your local authority, your household waste disposal service provider or the shop where you purchased the product.

For the disposal of the machine or one part of its, please follow the directives 2002/95/CE, 2002/96/CE and following changes and/or the legislative decrees of application.

This product or parts of it cannot be disposed of as domestic waste but must be treated by means of separate collection (see barred waste container symbol on product).

At the time of product disposal, the user must refer to the specific waste collection systems for electric and electronic appliances (WEEE).

The manufacturer guarantees the absence of dangerous substances in the EEE's used in compliance with the 200/95/CE Directive.

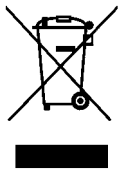
In the case of failure to comply with that prescribed, the user will be subject to the sanctions envisioned by the individual European Community member.

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.



## 20. ECOLOGY

### 20.1 Instructions for optimal use of energy, water and additives

If possible, use the machine at full load.

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

#### Detergents and rinse aids

Use detergent s 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. 8).

**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.**

## 21. ALARM AND FAULT DETECTION AND DISPLAY

### 21.1 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 in regeneration alarm: if the tank is still not empty after the tank draining phase.

### 21.2 Signalling

Faults are signalled by displaying the message (All) followed by the fault code.

TYPE OF FAULT	FAULT CODE	CURE
Faulty boiler sensor	1	Replace sensor
Faulty tank sensor	2	Replace sensor
Boiler heating failure	3	Check sensor or heating element. Call Technical Assistance
Tank heating failure	4	Check sensor or heating element. Call Technical Assistance
Boiler overtemperature	5	Faulty sensor/faulty control unit Call Technical Assistance
Tank overtemperature	6	Faulty sensor/faulty control unit Call Technical Assistance
Water load	7	Cock closed, water supply failure or pressure increase pump blocked
Water draining in regeneration	8	Overflow not removed
		Drain blocked
		Drain blocked
		Drain pump damaged
Door alarm in regeneration	9	Close the door
Boiler not filled*	10	Cock closed or water supply failure

tab. 5

\*only for version ATMOSPHERIC PRESSURE BOILER

### 21.3 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 message (Stb) being displayed.

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.

### 21.4 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 17 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.

**22. TROUBLESHOOTING (MACHINE PROBLEMS, CAUSES AND CURES)**

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
	Rinse arm nozzles or solenoid valve filter clogged and/or encrusted with scale.	Clean the rinse arm nozzles, pipes and the solenoid valve filter. Check the hardness of the feed water <10°f. If the machine is clean, check the salt or carry out regeneration more frequently
	Faulty pressure switch	Replace the pressure switch (contact Technical Assistance)
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
	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. Check rinse aid amount
	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. Call Technical Assistance for adjustment
	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")
	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 approx. 1-2 mm) and carry out resin regeneration more frequently. If scale is also noticed on the cabinet, have the purifier checked by qualified personnel
	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/boiler too high	Have the thermostat and pressure switch checked by the Assistance Centre
	Faulty pressure switch	
	Overflow incorrectly positioned	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

**N.B.: For any other problems, contact Technical Service.**

**The Manufacturer reserves the right to modify the technical characteristics without prior notice**

