

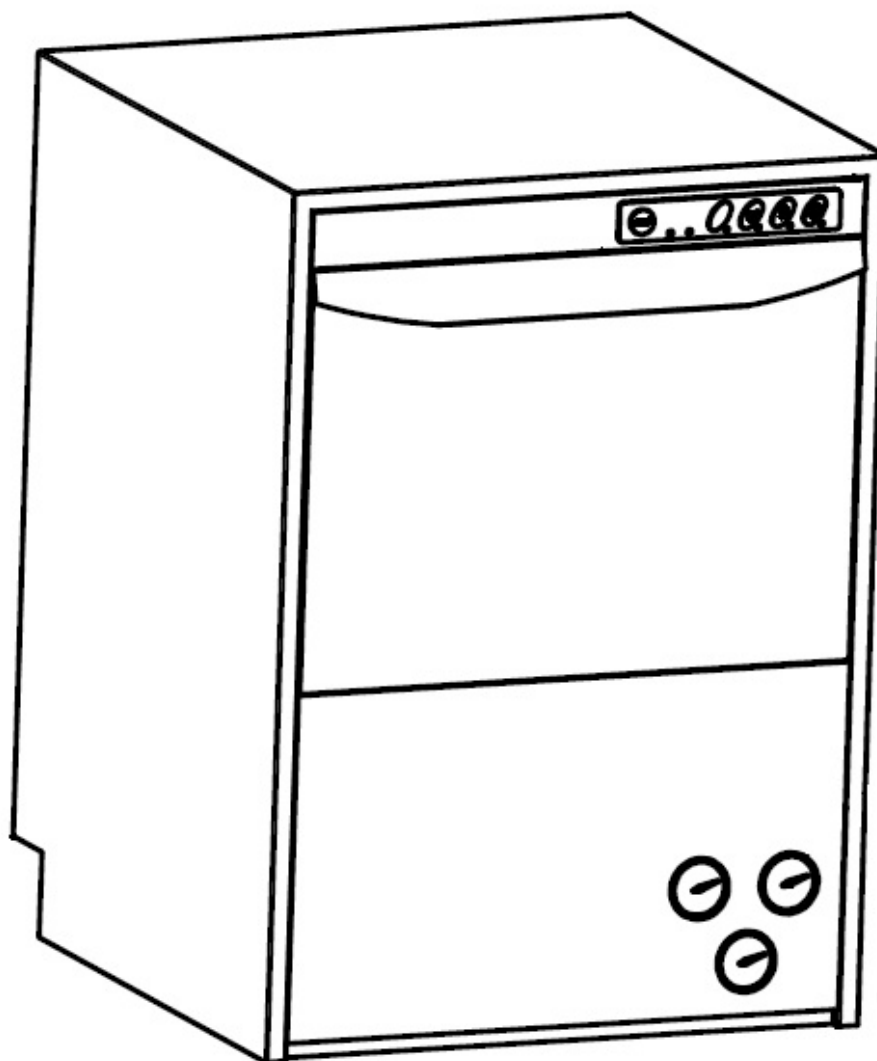


ergonomic products

Performance Without Compromise™

## Installation Manual

# Instrument Washer





**Thank you** for purchasing the Ergonomic Products Instrument Washer.

Years of research by dentists, engineers and designers have made this a uniquely effective product in the industry. We stand behind our equipment, and genuinely believe it to be the best available on the market.

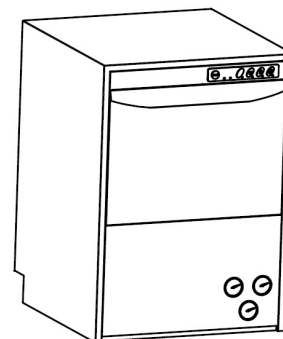
Should you have any questions regarding the product's installation or use, please don't hesitate to call our customer service specialists at **1-866-ERGO-4-US**. We may also be reached via email at **equip@ergonomic-products.com**.

We hope you enjoy the benefits and quality of your new equipment and look forward to handling your future needs as you and your practice continue to grow!

*- The Ergonomic Products Team*

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## QUESTIONS?

**Call our Customer Service Specialists at:**  
**1-866-ERGO-4-US.**



## 1 - WARNINGS

### WARNINGS

This instructions booklet must be kept with the machine for future consultations. If the machine is sold or transferred to other users, make sure the booklet always goes with the unit so that the new owner can have all the necessary information on operations and all relevant instructions.

The washer shall be installed in accordance with local codes, or in the absence of local codes, installed in accordance with the applicable requirements in the National Electrical Code, NFPA 70, Canadian Electrical Code (CEC), Part 1, CSA C22.1, and Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, NFPA 96.

These warnings are provided to safeguard the user in conformity with technical standards UL 921 and NSF3.

The instructions booklet must be carefully read before installation and before starting the machine.

The user must comply with the following rules:

- Adaptation of the electrical and water system for washer installation must be carried out by qualified operators only.
- The user shall not carry out any repair and/or maintenance operations.
- When the main switch is OFF, only qualified personnel can access the control panel.
- Servicing of this machine must be performed by authorized personnel only.  
Note: Use genuine spare parts only. Non-genuine parts will void the warranty and the manufacturer will take no responsibility for any damage.
- Do not use old hose, but only new ones.
- This appliance can be used by trained youth aged from 15 years and above. It cannot be used by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge.
- Children shall keep off the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.
- It is mandatory to install on the machine feeding line, exclusively dedicated for this unit:
  - A fuse protection system with the characteristics shown on the data-plate ( or an equivalent system).
  - A suitable omni-polar switch, sized according to the absorption shown on the data plate, in order to disconnect the power network completely. Only such a switch grants a full warranty of a complete separation from the electric network and it has to be used, always and strictly, before any intervention on the electrical panel, and by qualified personnel only. This switch shall be installed in the immediate vicinity of the machine.  
Only this switch must be used, always and strictly, to de-energize the machine at the end of the work session.
- Make sure the appliance is linked to an efficient ground connection.
- Do not open the machine doors when operating. After switching the machine off, wait for at least 15 seconds after the motors stop.



**WARNINGS: IT IS FORBIDDEN TO INSERT HANDS AND/OR TOUCH INTERNAL PART WHEN THE MACHINE IS OPERATING AND/OR AT THE END OF THE WASH CYCLE.**



## 1 - WARNINGS

- Before using the machine, the personnel shall know the position of the omni-polar switch that disconnected the machine from the electrical network, the position of the water connection shut-off valve and the procedures to switch off and secure the machine.
- Follow the instructions given in the manufacturer's booklet for cleaning operations (chap. 6).
- This machine must be disconnected from the main electrical supply after use at the end of the day and for any service/maintenance operation following this procedure: Switch the machine off from the control panel. Drain the tank by removing the overflow pipe. Disconnect the electrical supply by the omni-polar switch (main switch located on the wall). Shut the water supply valve(s). Disregarding the aforesaid prescriptions is a serious misuse and can cause damages and injures to property and people, and will relieve the manufacturer from whatever liability.
- Do not use water to extinguish fires on electrical parts.
- Do not cover the intake or dissipation grids.
- Water infeed to the machine 60PSI (400kPa) maximum.



**NOTICE:** This machine must be operated with an automatic detergent dosing pump including a visual means to verify that detergents are delivered, or a visual or audible alarm to signal if detergents are not available for delivery to the washing system. Please see instructions for electrical and plumbing connections located in this manual and in the feeder equipment manual.

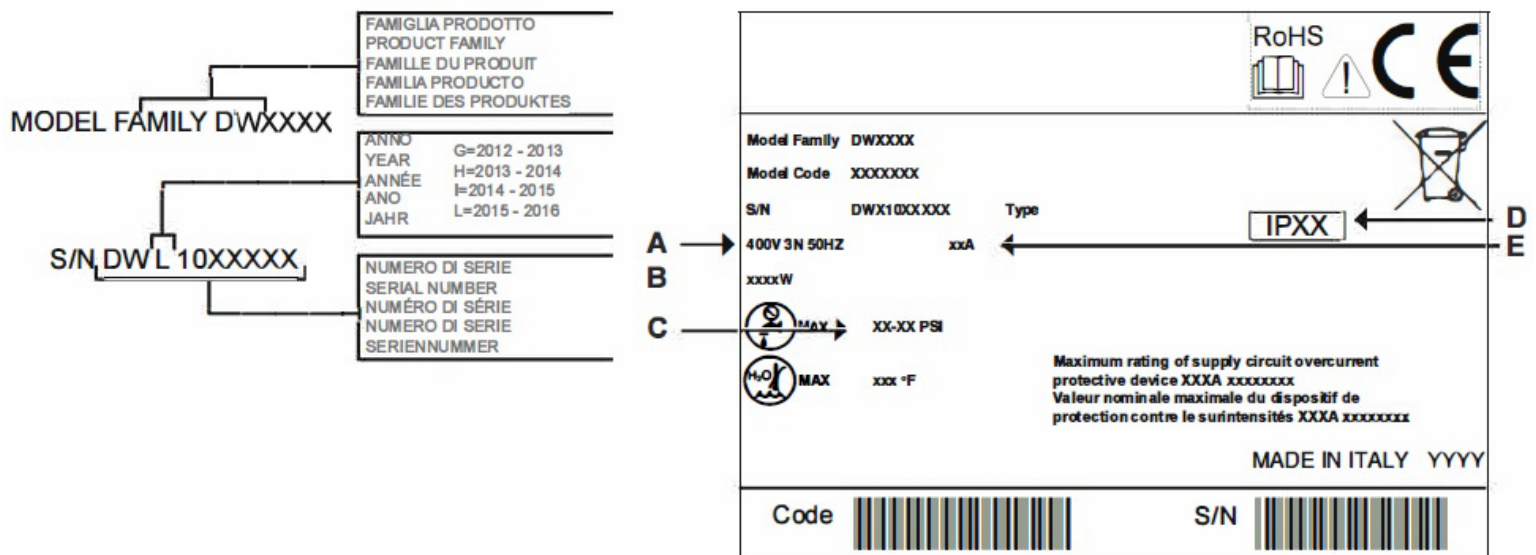
**Note:** The manufacturer declines any responsibility for accidents to people or any damage deriving from failure to observe the above listed instructions.



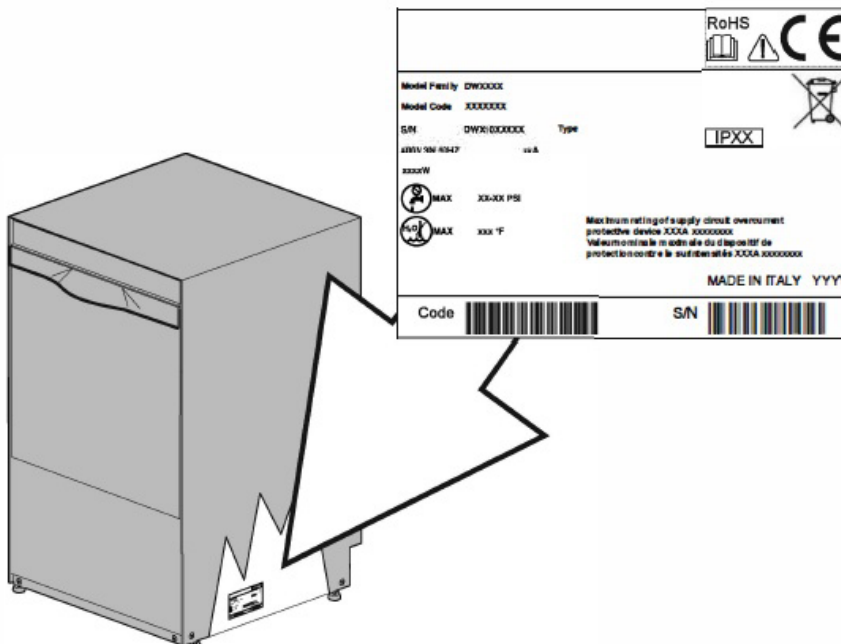
## 2 - SERIAL NUMBER DATA

### ATTENTION:

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

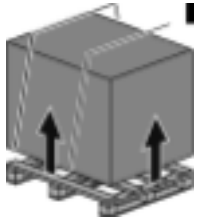


- A Power source
- B Total power installed
- C Dynamic pressure
- D Envelope protection degree
- E Total electricity absorption





### 3 - INSTALLATION



#### Receiving the machine

- Pay special attention in choosing the lifting points and the machine center of gravity during the loading and 1 unloading operations.
- Before accepting the machine, verify that all the data on the data-plate corresponds to the required ones and to the ones of the available electrical supply. (SEE PAGE 5)  
After unpacking, make sure the machine has not been damaged during transportation. If so, do notify the seller immediately about the problem. If the damage might question the machine safety, do not install it.

- Double check the firm tightness of all hose-clamps on piping, nuts, bolts and electrical connection that might have come loose during transportation, to prevent water dripping leakages, or other damages, during the machine operation.

- Storage temperature: min. +40° F (+4° C) - max. +122° F (+50°C) - humidity <90%  
The stored parts should be checked periodically to detect any sign of deterioration.  
Do not store the machine exposing it to atmospheric agents (rain, sun, cold, etc.).  
Do not place material on the packed machine.

- Prepare for installation  
This is just a guide-line for the machine installation. The installation must be performed by a qualified personal.

- Water connections  
Water connections must be carried out in compliance with current local standards.  
The Water system must have characteristics between the parameters specified in table 1.

Table 1

Water supply characteristics	Min	Max
Static Pressure*	30 PSI (~200Kpa)	60 PSI (~400Kpa)
Dynamic Pressure	30 PSI (~200Kpa)	50 PSI (~350Kpa)
Cold water-supply temperature (machine with extra power)	110°F (~43°C)	150°F (~65°C)
Hot water-supply temperature	140°F (~60°C)	150°F (~65°C)
Capacity	2,6 gpm (~10 l/min)	

\* If higher than 60 PSI (400Kpa), it is mandatory to install a pressure reducer.  
To improve the machine performance keep the temperature intervals indicated.  
It has to be installed a water supply shut-off valve close to the machine in an accessible point.  
Use only new flexible pipes for the water connections.



## 3 - INSTALLATION

### Water supply characteristics

The machine water supply must be potable. The inlet water must also meet the parameters given in the table 2.

Water parameters table	Min	Max
Chlorine <sup>1</sup>		2mg/l
pH	6,5 <sup>1</sup>	8,5 <sup>3</sup>
Water hardness		8°f <sup>2-3</sup>
Iron <sup>3</sup>		0,2 mg/l
Manganese <sup>4</sup>		0,05 mg/l

Table 2

<sup>1</sup> Out of range values might lead to corrosion and jeopardize the life of the machine.

<sup>2</sup> Should the water hardness is higher it is compulsory to install a water softner and check periodically its operation.

<sup>3</sup> Out of range values might lead scaling and sediments with a consequent lower performance, functionality, and expected life of the machine.

<sup>4</sup> Desired value: Out of range values might lead stainless steel blackening/tarnishing.  
It is recommended a water test once a year.

### Positioning the machine

- Remove the packing with care.
- Check that the machine is properly levelled, by adjusting the legs.
- Make sure the machine is not standing on the power cable or on the filling/drain hoses.
- Level the machine flat, by adjusting the support feet.

### Electrical connection

- Only qualified and properly trained personnel can operate on the electric board and connections.

### Before the installation

- Make sure the floor drain is installed
- Make sure that the voltage is the same as reported on the data-plate.
- Make sure the line voltage matches the machine power and voltage indicated on the machine data-plate

Electrical connection must be carried out in compliance with the current local standards.  
Use the data reported on the data-plate to check dimensions and electrical connections.





### 3 - INSTALLATION




It is mandatory to install on the machine feeding line, exclusively dedicated for this unit:

- A fuse protection system with the characteristics shown on the data-plate.
- A suitable omni-polar switch, sized according to the absorption shown on the data plate, in order to disconnect the power network completely. Only such a switch grants a full warranty of a complete.
- separation from the electric network and it has to be used, always and strictly, before any intervention. on the electrical panel, and by qualified personnel only.
- This switch shall be installed in the immediate vicinity of the machine.
- Only this switch must be used, always and strictly, to de-energize the machine at the end of the work session. Make sure the appliance is linked to an efficient ground connection.



**WARNING:** check very carefully if the “ground connection” of the machine, is properly sized and fully efficient, and that not too many units are connected on it. An undersized or poor “ground connection” might lead to corrosion and/or pitting effect on the stainless steel plates, even to perforation.

The machine has a terminal on the back panel indicated by the symbol  that is meant to link the metal structures of different appliances, to prevent electro-static shocks.

**Note:** Do not modify the protections or remove them. Only if the power supply is cut off from the main switch on the wall. Only if the power supply is cut off from the main switch on the wall it is possible to work on the dishwasher electric circuits. Lock the main switch on the wall to signal the work in progress on the washers electric circuits. **DANGER!**



**DO NOT USE POWER CORD OR GFI OUTLET**

**This unit MUST BE hard-wired to a dedicated appropriately size circuit breaker**

#### Temperature adjustment

The adjustments are already carried out during the factory testing. If necessary, the water temperatures of the wash and rinse cycles can be adjusted by means of the fine-tune screws on the respective thermostats. The set temperatures are 160° F (71 ° C) the wash cycle (tank) and 185° F (85°C) for the rinse cycle (boiler).





## 3 - INSTALLATION

### Rinse aid dispenser operation

- Operation: it utilizes the difference in combined pressure caused by turning the washing pump on and off, and the rinse pressure.

### Water connection

- Connect the dispenser tube fitting A to the pump, by means of the rubber tube installed in the appliance (pump pressure).
- Connect the small black rubber tube by the brass delivery fitting B to the connection near the boiler (injector).
- Make sure that the green product suction tube is inserted on the special fitting C and that the small filter and the ballast are inserted in the rinse aid tank.

### Priming

- To prime the dispenser, turn on the appliance and carry out several complete wash cycles or press the adjustment screw D during the wash cycle and open and close the door combined with pressing the pin D. This method speeds up the refill process.

### Adjustment

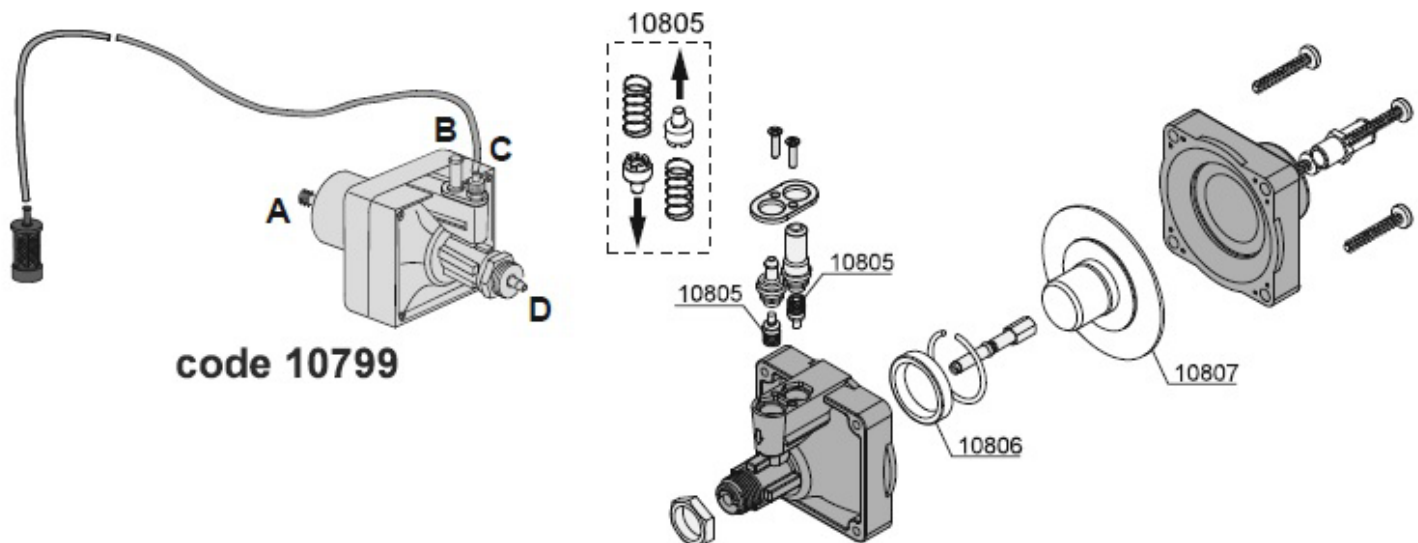
- with each rinse cycle, the dispenser draws an amount of rinse aid, adjustable 2 cubic inches (from 0 to 4 cc), equivalent to a length of 11" (30 cm) drawn into the suction tube.  
In order to regulate the dispenser to the minimum amount, turn the adjustment screw D completely clockwise. For the maximum amount, turn the screw counterclockwise about 20 complete turns. For the correct amount of rinse aid, see the paragraph Use of rinse aid (SEE PAGE 14)

### N.B.

- for each turn of the screw the amount of the product drawn into the tube varies by 5/8 inches (1,6cm), equivalent to 13/16 cubic inches/run (0,2 cm<sup>3</sup>/turn)
- (about 1/8 Dramme/run - 0,21g/turn - with a concentration of 0,60 oz/cubic inches - 1,05 g/cm<sup>3</sup> of rinse aid).  
The rinse aid cannot function properly if the difference in level between the bottom of the machine and the container exceeds 31 inches (80 cm).

THE DISPENSERS ARE PRE-SET TO A 2" (5 CM) INTAKE OF PRODUCT FOLLOWING A TEST PHASE SYSTEM CHECK. THIS MEASUREMENT SHOULD BE ADJUSTED ACCORDING TO THE TYPE OF RINSE AID USED AND WATER HARDNESS.

## 3 - INSTALLATION



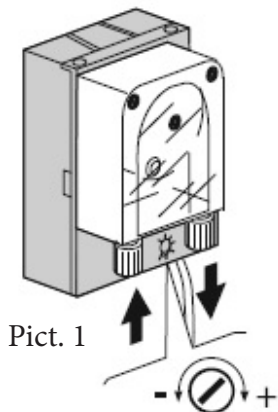
PROBLEMS	CAUSES AND SOLUTIONS
Water exits from the rinse aid suction tube.	The suction valves 10805 and delivery do not seal due to foreign bodies in the closing seats. Clean the valves 10805, check that the rinse aid suction filter is present, and filter the water entering the Instrument Washer
The dispenser does not draw rinse aid.	a) The delivery valve 10805 does not seal due to foreign bodies in the closing seats. Clean the valve 10805, check that the rinse aid suction filter is present and filter the water entering Instrument Washer
	b) The piston seal 10806 does not hold because it is damaged. Replace the seal 10806 with an original.
	c) Check the diaphragm 10807.



## 4 - DETERGENT DISPENSER INSTALLATION

### Electrical connection

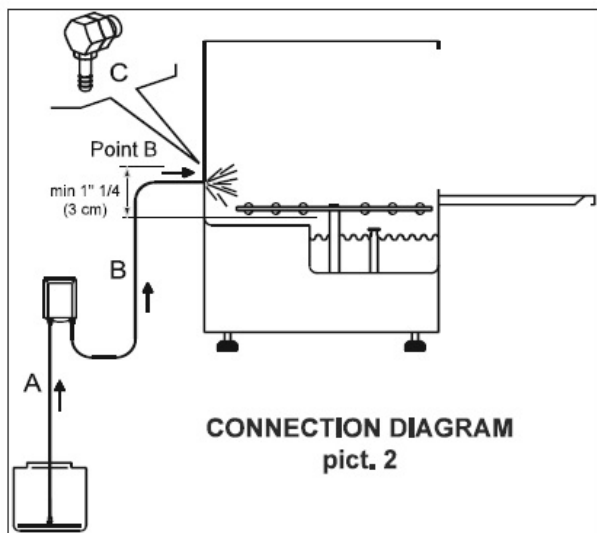
- Follow the wiring diagram attached to the machine.



Pict. 1

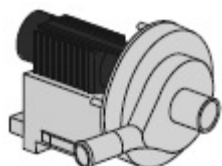
### Pipe connection

- Remove the cap from the hole and fit the delivery connection.
- Correctly mount the injector C using the appropriate fixtures.
- Connect the suction tube to the suction attachment of the dispenser (see pict. 2 - point A).
- Connect the delivery tube to the other attachment of the dispenser, and the delivery fitting (see pict. 2 point B).
- Insert the suction tube with filter in the detergent tank.
- Prime the detergent and proceed to dispense.



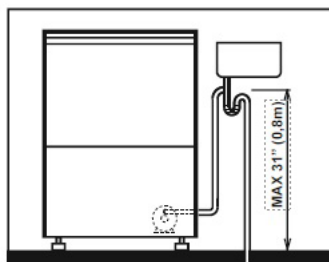
### Dispensing the detergent

- The detergent dispenser capacity can be adjusted using a screw driver as shown in picture 1.
- Every 13/16 inches (2 cm) of product drawn into the tube corresponds to 1/64 cubic inches (0,25 cm<sup>3</sup>) equivalent to 0,01 once (0,3 g) with a concentration of 1/16 once/cubic inches (1,2g/cm<sup>3</sup>). For proper dispensing (SEE PAGE 14)

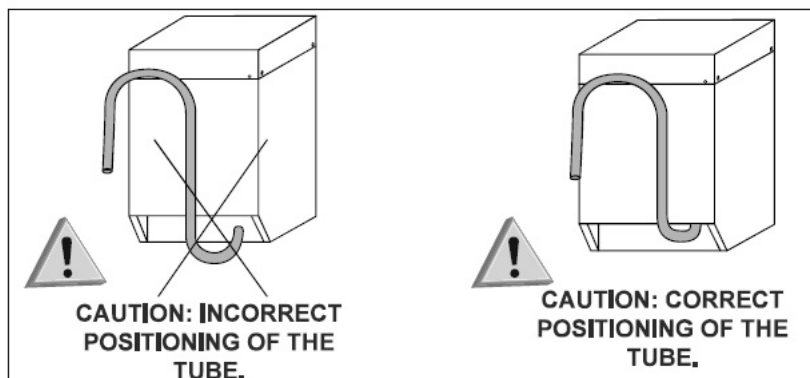


### Technical Data and Useful Information on Pumps

- Draining pump
- When installing, pay particular attention to the position of the draining tube (see pict. 3). (SEE PAGE 14) for operations description.



pict. 3





## 5 - CONTROL PANEL AND RELATIVE SYMBOLS

### CONTROLS

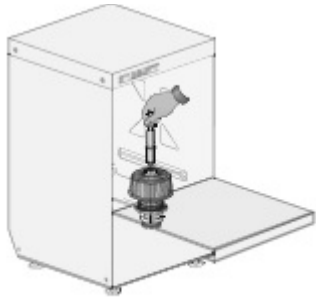
1		ON/OFF switch 0-1
2	<b>START</b>	Cycle START button
3		Manual drain button (optional)
4		Wash type selector

### INDICATORS

a		Power on indicator
b		Washing cycle indicator
c		Temperature indicator



## 6 - OPERATION



**pict. 4**

- Insert the overflow tube in the special seat inside the tub (pict. 4)
- Check that the filter is correctly fitted in its seat (pict. 4).  
The filter must be cleaned after every 20 wash cycles and whenever necessary. **DO NOT** use the appliance without the filter.
- Close the dishwasher door.
- Insert the special rinse aid dispenser tube in the liquid container and check that the quantity of additive is sufficient for daily use (see paragraph on rinse aid use).
- Turn on the water valve.
- Turn switch 0-1 1 (SEE PAGE 12) to position 1 (pressed).  
The operation is signalled by the switch indicator lighting up or by the indicator with the symbol a (SEE PAGE 12).  
The machine will automatically fill the tub with water; then the heating phase begins. Indicator c (SEE PAGE 12) comes on when the water temperature is reached.
- On machines with selector 4 (SEE PAGE 12) select the wash cycle required.
- To begin the wash cycle, if there is no automatic option, put the liquid detergent in the tub and press the START button 2 (SEE PAGE 12). The button light or indicator B will come on, indicating that the cycle has started. At the end of the washing cycle, a hot rinse cycle will take place. The indicator light of the START button 2 (SEE PAGE 12) will turn off when the cycle has finished.
- The appliance is now ready for a new wash.
- At the end of the day, clean the machine (SEE PAGE 15).
- Turn off the machine and the water tap.

### **WARNINGS:**

- Do not slam the door when opening and closing.
- Do not put material or objects on the machine.
- The water used for the washing and the rinsing is not potable because of the presence of chemical additives. In case of contact with skin or eyes wash them immediately with plenty of water and check the safety instructions of the detergent manufacturer. If necessary, contact a doctor.
- Some important rules must be followed for the use of this appliance:
  - 1) Never touch the appliance with wet hands or feet
  - 2) Never use the appliance when barefooted
  - 3) Do not install the appliance in places exposed to water splashes.
- This machine must be disconnected from the main electrical supply after use at the end of the day and for any service/maintenance operation. Switch off the main switch located on the wall, which shall be installed by a professional installer. Shut the water supply valve(s).

**WARNING: INTERNAL CLEANING OF THE MACHINE SHALL BE CARRIED OUT AT LEAST 10 MINUTES AFTER IT HAS BEEN TURNED OFF.**

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



## 6 - OPERATION



### Detergent use

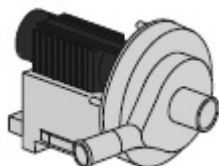
- ONLY use NON FOAMING types suitable for industrial glass-washers and dishwashers. It is advisable to use liquid detergents.
- The detergent must be put directly in the tub.  
The correct amount will be suggested by the product manufacturer according to the water hardness. By request, the dishwasher can be equipped with an automatic detergent dosing pump (always recommended).  
3/8 inches (1 cm) of the product drawn into the tube is equal to about 3/32 Dr (0,15g).  
A correct amount of detergent is very important for a successful wash.  
This machine must be operated with an automatic detergent dosing pump. Verify the correct operation by checking the detergent flow in the transparent suction hose from the detergent canister. Make the check during tank filling or rinse phase.



### Rinse Aid use

- The machine is equipped with a rinse aid dispenser.
- The machine automatically draws the product.
- The rinse-aid chemical, shall be suitable for professional glass and dishwashers. It is advisable to rely on specialized retailers in the sector.
- The amount dispensed can be regulated by operating the fine-adjustment screw on the dispenser.
- Reduce the amount by turning the screw clockwise, increase by turning it anticlockwise.
- The recommended amount is 7/8 - 1 15/6 inches (2-5 cm) of product measured on the suction tube.
- 3/8 inches (1 cm) of the product drawn into the tube is equal to about 1/16 Dramme (0,13g).
- A correct amount of rinse aid is very important for a quick and clean drying.

### Draining pump system



- To drain completely the wash-tank keep the machine ON, extract the overflow pipe and shut the door. Press the button 3 (see pg 12) for at least a second: the draining pump will automatically drain the wash-tank. When the drain is completed, turn the machine OFF, and after 5 seconds, ON (button 1 - SEE PAGE 12) to fill the wash-tank and run a new cycle. Opening the door will stop the machine that will re-start when the door is shut. During the wash-rinse cycle the water in excess is automatically drained. Drain every 14 cycles.



## 7 - MAINTENANCE



### Routine maintenance

ATTENTION: The machine is not protected against pressurized water sprays. Do not use pressure cleaning systems against the machine. It is recommended to contact your chemicals distributor for proper cleaning instructions, in order to have detailed indications on methods and products suitable for the correct periodical machine sanitation.

- Do not use bleach or detergents containing chlorine.
- To ensure the best performance of the machine a proper and systematic cleaning is required. The following shall be carried out, at least once/day:
  - Turn off the ON/OFF switch.
  - Turn off the water valve.
  - Drain the water removing the overflow pipe.
  - For appliances provided with emptying pump (SEE PAGE 14).
  - Remove the filter and clean it with a brush under running water.
  - Remove the rotors by loosening the fixing screws, and thoroughly clean the nozzles and cleaning and rinsing arms under running water.
  - Reassemble all parts and refit the rotors in their seats, fixing them with the relative screws.
  - Clean the tub thoroughly using specific products.
  - At the end of the day, it is advisable to leave the dishwasher door open.



Note: It is advisable to replace the tub water by refilling the tub at least every 20 wash cycles, or twice a day. Do not use metal brushes or corrosive products which can damage the machine.

### Special Maintenance



Once or twice a year have the machine inspected by a qualified technician, in order to:

- 1 - Clean the inlet filter of the solenoid-valve
- 2 - Remove incrustations from the heating elements
- 3 - Check the status and the tightness of all gaskets
- 4 - Check the wearing of each component
- 5 - Check the efficiency of the dosing pumps.





## 8 - ENVIRONMENTAL ASPECTS



### Packing

- The packing consists of the following: a wood pallet, a nylon bag (LOPE), multi-layered cardboard, polystyrene foam (PS), polypropylene support (PP).
- Please dispose of the materials listed above, according to the current regulations.

### Disposal



The machine must be disposed of according to current regulations:

- Contact the Municipalized Firm responsible for collection of urban solid waste.
- Before disposing of the appliance, disconnect all water and electrical connections.
- Cut the electrical cable in such a way as to prevent further use.
- As all metal parts are stainless steel, they are therefore recyclable.

**Recyclable plastic parts are identified by the plastic symbol**



## 9 - ECOLOGICAL ASPECTS

### Recommendations for optimal use of energy, water and additives

Use the machine fully loaded when possible.

- This shall prevent detergent, rinse aid, water and energy waste.



Detergent and rinse-aid

- Use Detergent and rinse-aid chemicals with high biodegradability, to respect the environment best. Verify the proper dosage in relation to water hardness at least once a year. Excess of product pollutes rivers and seas while an insufficient dosing will cause unsatisfactory dish washing and/or hygiene.

Tank and boiler temperatures

- The tank and boiler temperatures are set by the manufacturer in order to obtain the best washing results with detergents on the market. These may be re-set by the installer according to your detergent (SEE PAGE 8).

Cleaning off

- Carefully remove solids off the kitchenware using water at room temperature so as to make removal of animal fats easier. To remove encrusted matter, soaking in hot water is recommended.

Notes:

Wash the objects as soon as possible in order to prevent the deposits from drying and jeopardizing the effectiveness of the washing. To get an efficient wash, it is advisable to regularly clean and maintain the machine (SEE PAGE 15).

Disregarding the points listed above and any information contained in this manual can cause energy, water and detergent waste with a subsequent increase in running costs and/or performance reduction.



## 10 - TROUBLESHOOTING

Type of problem	Possible causes	Cure
The machine does not turn on	Main switch not ON.	Turn switch ON.
The machine does not load water.	Water valve shut.	Open the hot and/or cold water valve.
	The spray arm nozzles or the solenoid filter are clogged and/or caked with lime deposits	Clean the rinsing arm nozzles, the pipes and the filter. Check that the water hardness is <10°f. Equip the machine with an external water softener
	Faulty pressure switch	Replace the pressure switch (call the Technical Assistance service)
Washing results are unsatisfactory.	The washing nozzles are obstructed or the rack does not rotate.	Unscrew and clean the nozzles and the rotation shaft carefully, refit them correctly in their seats
	Filters are dirty.	Remove filters, clean with brush under a jet of water and replace in original position.
	Presence of foam	Always use a non-foaming detergent. Have the detergent and rinse aid dosages checked
	Fats or starches are not removed	Detergent concentration too low
	Check the tank temperature (it must be about 160°F - 71°C)	Adjust the thermostat or check correct heating element operation
	Length of washing cycle inadequate for type of grime build-up	Choose a longer cycle if possible, otherwise repeat wash cycle
	Wash water too dirty	Empty water from the tank, clean filters; refill the tank and correctly refit the filters
The objects are not dried properly	Wrong rinse aid concentration	Have the rinse aid dosage checked
	The rack is unsuitable for the glasses and dishes	Use a suitable rack enabling the dishes to be tilted so water can run off
	The dishes have been too long in the tank	As soon as the wash cycle is finished, pull the rack out immediately, allowing the air to dry the glasses and dishes more quickly
	Rinse water temperature is less than 185°F (85°C)	Check the temperature of the booster thermostat. Call the Technical Assistance service to adjust
	Surface of dishes and glasses too rough or porous for material wear.	Replace type of dishes and glasses used
Streaks and spots	Wrong rinse aid concentration	Have the rinse aid dosage checked
	Too hard water.	Check the water quality. Water must not exceed 10°f in hardness. Equip the machine with an external water softener
The machine suddenly stops during the cycle	The machine is connected to an overloaded circuit	Connect the machine separately (call the Technical Assistance service)
	A safety device has been activated	Check safety devices (call the Technical Assistance service)
During wash cycle the machine stops and draws water	Water from the previous day has not been replaced	Empty the tank and refill it
	Faulty pressure switch	Have the Technical Assistance service check the thermostat and the pressure switch
	The overflow tube is incorrectly positioned	Remove the overflow tube and correctly reposition it

Note For any other problems, contact the Technical Assistance service.

The manufacturer reserves the right to alter the technical characteristics without prior notice.