
INSTALLAZIONE, USO E MANUTENZIONE
INSTALLATION, OPERATION AND MAINTENANCE
INSTALLATION, EMPLOI ET ENTRETIEN
INSTALLATION, GEBRAUCH UND WARTUNG
INSTALACION, USO Y MANTENIMIENTO

LV300R LV500R

LV301R LV501R

VEGETABLE WASHER WITH TILTING BASKET



DOC. NO. **0270 03600 GB**

EDITION 1 9811

**SCHEMA D'INSTALLATIONE - INSTALLATION DIAGRAM - SCHEMAS CONCERNANT L'INSTALLATION -
INSTALLATIONSDIAGRAMM - ESQUEMA PARA LA INSTALACION**

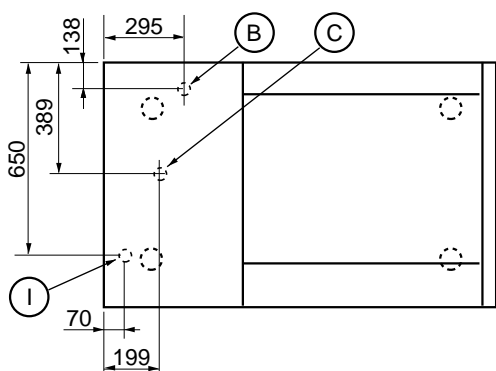
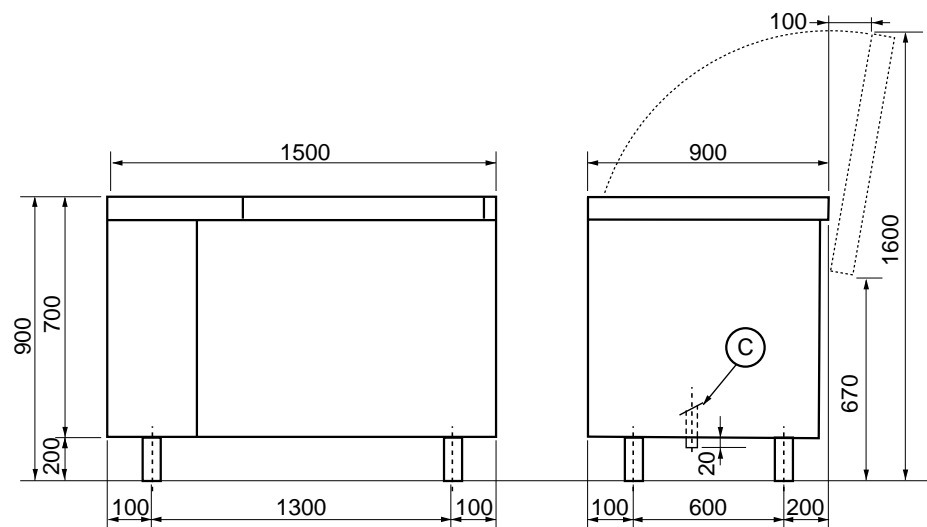


Fig. 1a
LV300R Mod.660034
LV301R Mod.660030

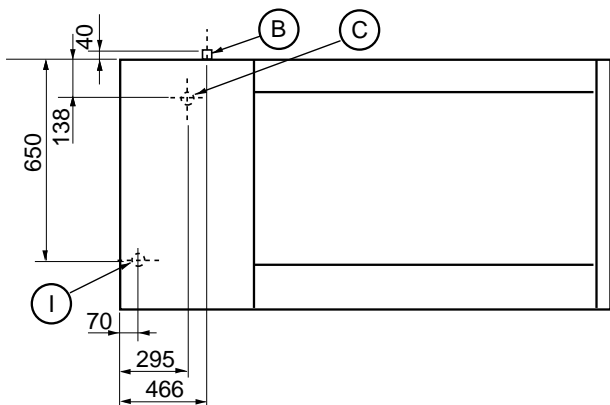
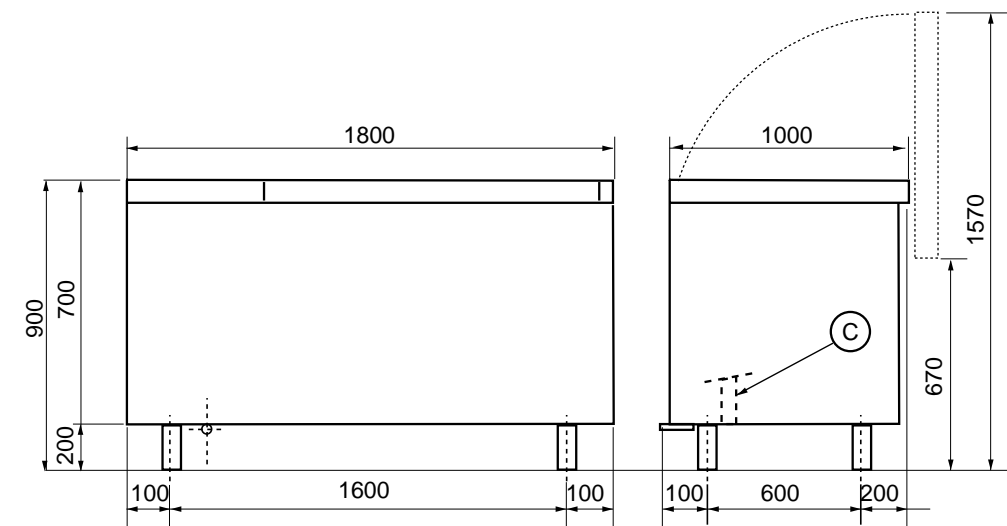
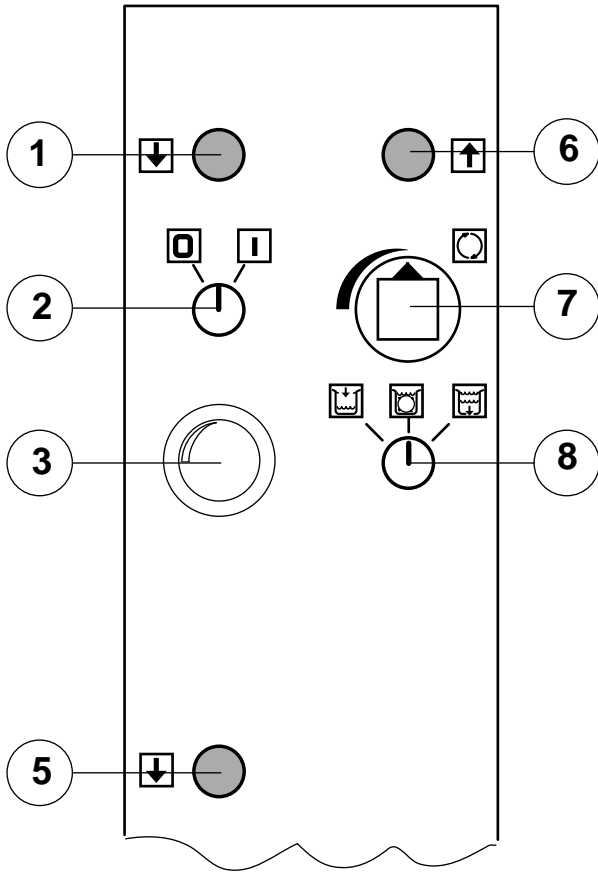


Fig. 1b
LV500R Mod.660036
LV501R Mod.660037

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- B - Cold drinking water connection \varnothing 1" UNI ISO 228/1-G1
- I - Power cable inlet
- C - Water drain outlet \varnothing 1" 1/2 UNI ISO 228/1-G2

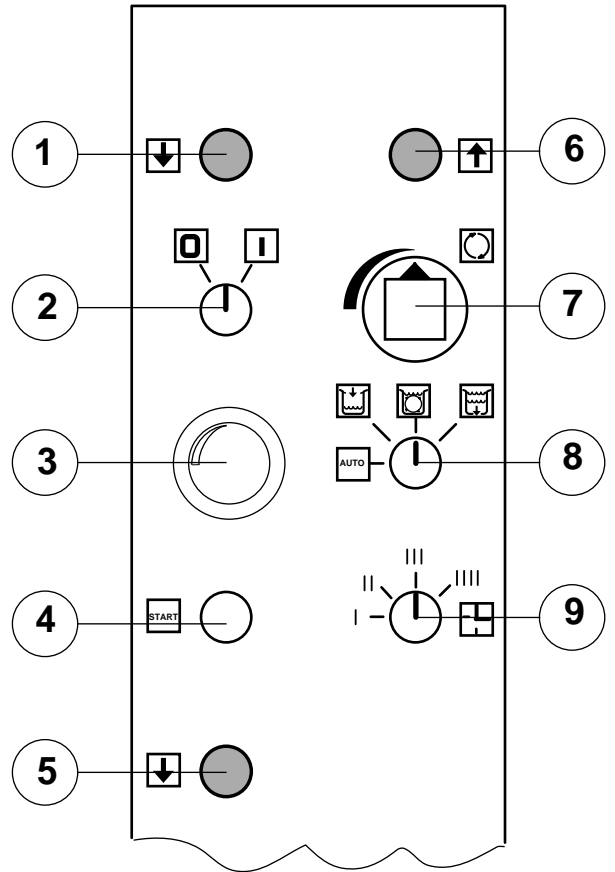
Control panel



LV300R Mod. 660034
LV500R Mod. 660036

Fig. 2

Control panel with PLC



LV301R Mod. 660030
LV501R Mod. 660037

Fig. 3

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- 1 - Top basket "down" button
- 2 - Main switch
- 3 - Emergency stop button
- 4 - Cycle "START" button (Fig. 3)
- 5 - Bottom basket "down" button
- 6 - Basket "up" button
- 7 - "Water turbulence" adjustment knob
- 8 - Selector:
 - AUTO (Fig. 3)
 - fill
 - wash
 - empty
- 9 - 4-wash cycle selector (Fig. 3)

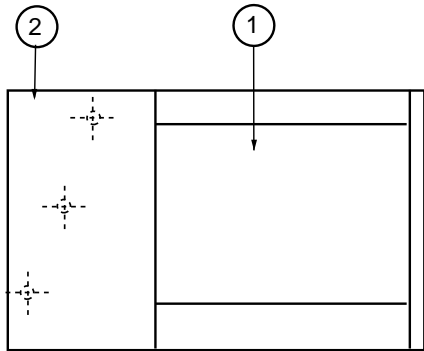
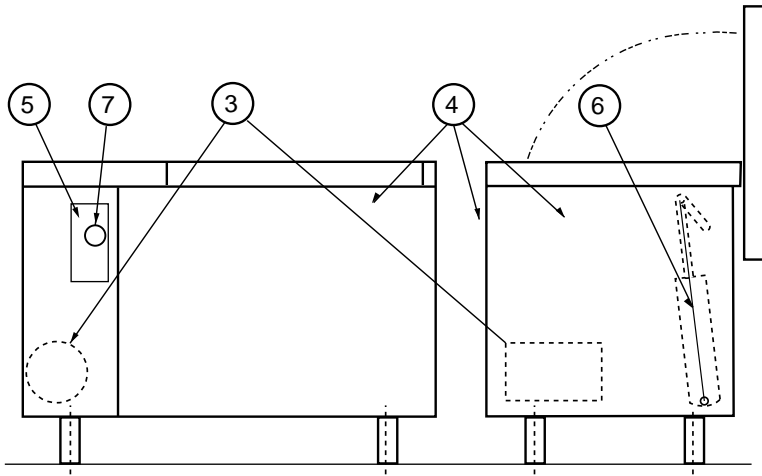


Fig. 4
LV300R Mod. 660034
LV301R Mod. 660030

- 1 - Basket
- 2 - Work top
- 3 - "Water turbulence" pump
- 4 - Front, rear and side panels
- 5 - Control panel
- 6 - Basket actuator
- 7 - Emergency stop button

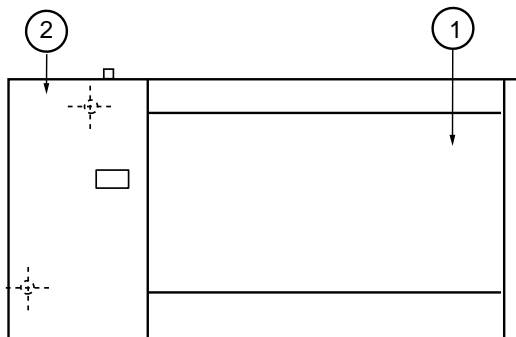
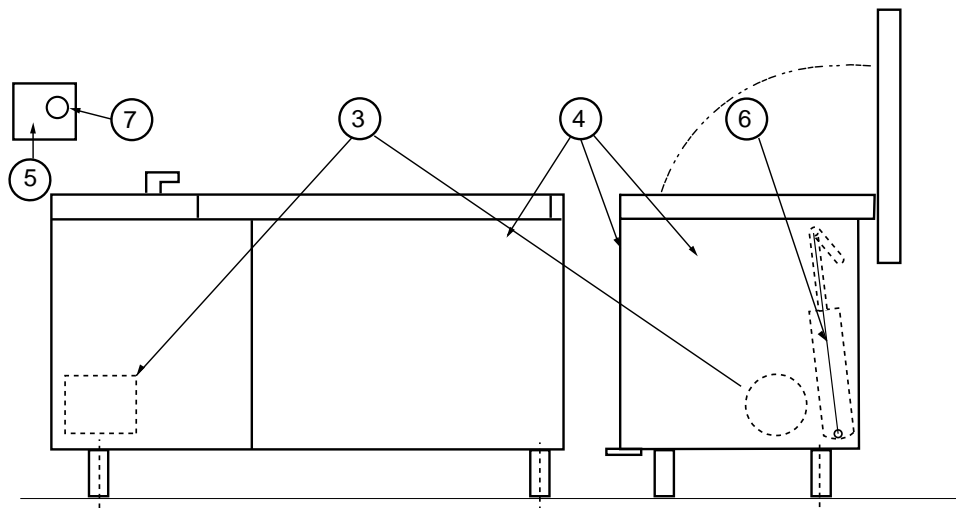


Fig. 5
LV500R Mod. 660036
LV501R Mod. 660037

- 1 - Basket
- 2 - Work top
- 3 - "Water turbulence" pump
- 4 - Front, rear and side panels
- 5 - Remote control panel (*)
- 6 - Basket actuator
- 7 - Emergency stop button

(*) The remote control panel must be installed in the immediate vicinity of the appliance in order to effectively control its operation.

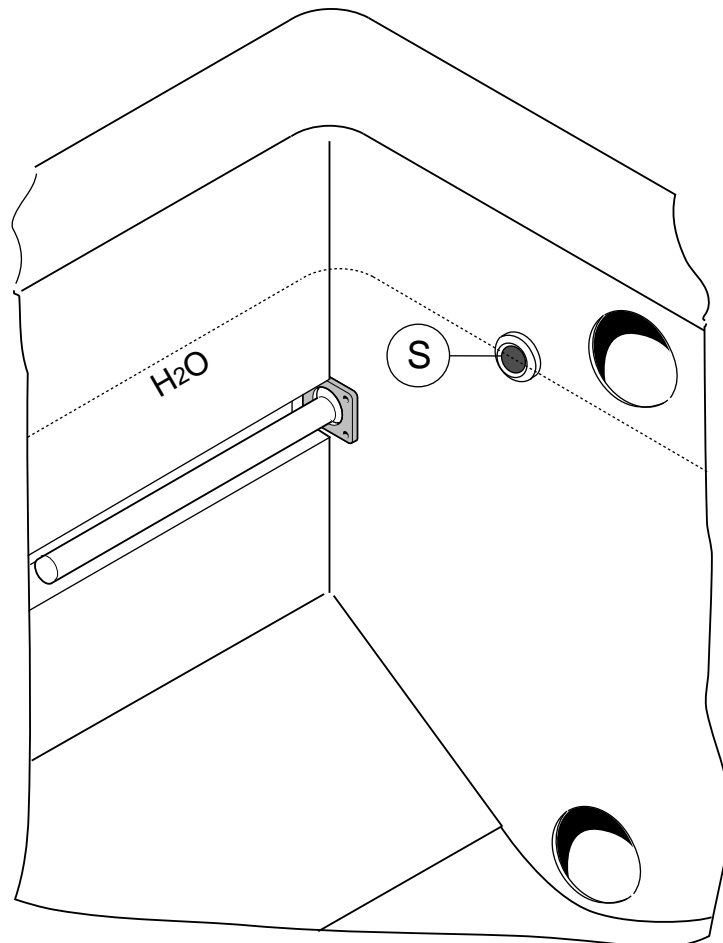
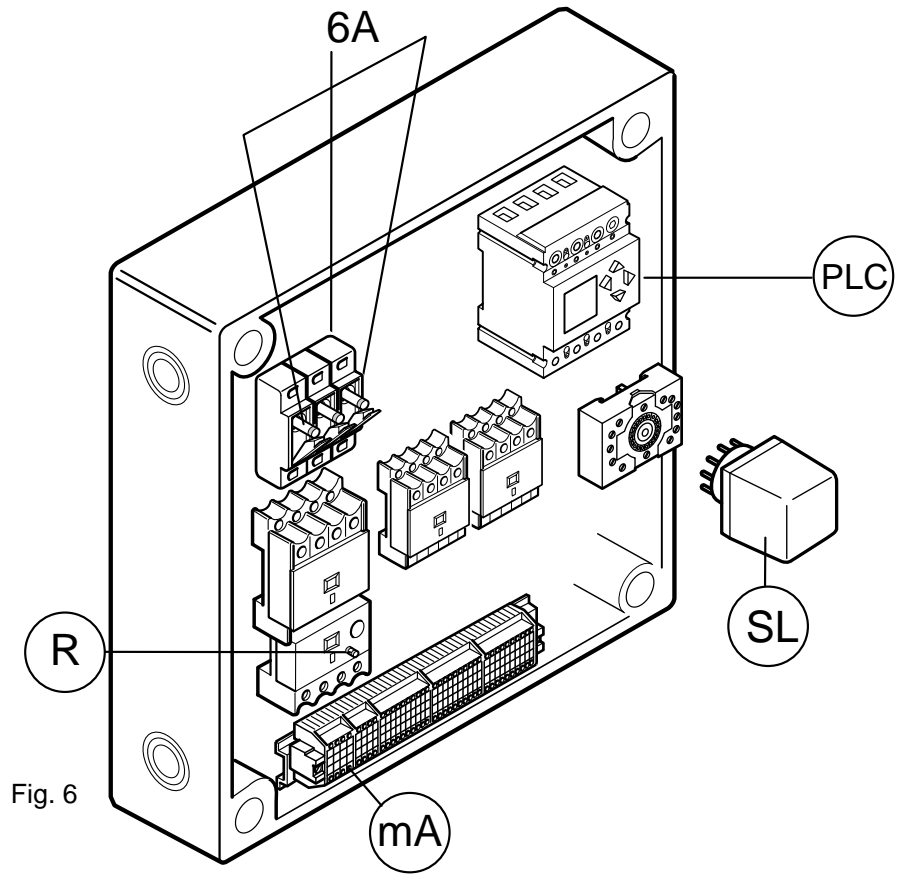


Fig. 7

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WARNINGS

- Carefully read this instructions manual, inasmuch as it contains important information concerning the safety, operation and maintenance of this appliance. Keep this instructions manual in a safe place for future consultation by other users.
- Installation of this appliance must only be performed by a qualified installer in compliance with the manufacturer's instructions.
- The appliance must only be used by trained personnel.
- Switch off the appliance if it breaks down or malfunctions. Only contact the technical service centre authorised by the manufacturer for repairs and only use original spare parts.
- Failure to comply with the above instructions may jeopardise the safety of the appliance.

I. INSTALLATION INSTRUCTIONS

The appliance must be installed by a qualified installer in compliance with current safety standards.

1. DATA PLATE

The data plate is mounted at the bottom on the RH side of the appliance.

2. TECHNICAL DATA

Installation diagram (see Figs. 1a and 1b)

Model LV300R- LV301R

B - Cold drinking water connection UNI ISO 228/1-G1		
Electric power supply (50 Hz)	V	400 3N~
Wash pump power	kW	1.1
Basket lifting motor power	kW	0.1
Power consumption	kW	1.2
Power cable cross-section	mm ²	1.5x5
Net weight	kg	250
Tank capacity	l	330
Cycle load	kg	10-40
Cycle length	mins.	2-3

Model LV500 - LV501

B - Cold drinking water connection UNI ISO 228/1-G1		
Electric power supply (50 Hz)	V	400 3N~
Wash pump power	kW	1.1
Basket lifting motor power	kW	0.1
Power consumption	kW	1.2
Power cable cross-section	mm ²	1.5x5
Net weight	kg	300
Tank capacity	l	520
Cycle load	kg	14-70
Cycle length	mins.	2-3

3. POSITIONING

- The LH side of the appliance must be positioned at least **700** cm from the wall or other units to provide easy access to the water circulating pump. Maintenance work is normally carried out from the front of the appliance.
- The installation floor must be capable of withstanding a total weight of 800 Kg/sq.m.
- Place the appliance in the required position and level it to the required height using the adjustable feet (+50 mm).
- Carefully remove the protective film from the external panels to avoid leaving any trace of glue. Use a suitable diluent such as petrol or paraffin to remove any glue residue.

4. CONNECTIONS

4.1 CONNECTION TO WATER MAINS

- The appliance must be connected to a "drinking water" supply as stipulated by:
 - DPR 236, 24-5-1988
 - Department of Health Decree Nr. 443, 29-1-91.
 - Subsequent amendments and modifications.

- The supply pressure must be between 150 and 250 kPa (1.5 to 2.5 bar).
- Fit a mechanically operated shut-off cock and filter on the water line connecting the appliance to the water mains. Before fitting the filter, pump water through the system to expel any ferrous particles from the piping. Install a drainage system which ensures rapid drainage during emptying, thereby avoiding water stagnation.

4.2 ELECTRICAL CONNECTION

- **The appliance must be connected to the mains power supply by trained personnel in compliance with current regulations.**
- Before connecting the appliance to the mains power supply, make sure that the voltage and frequency shown on the appliance rating plate correspond with that of the power supply.
- The power supply cable must be flexible with characteristics not inferior to the type with rubber insulation H05RN-F and must be protected by a metal or rigid plastic tube. The cable must be connected to the terminal board as shown on the electrical wiring diagram enclosed with the appliance, and then fastened by the cable clamp.
- A **homopolar** safety cutout switch of suitable capacity and with contact breaking distance of at least 3 mm must be fitted upstream of the appliance. This cutout switch must be installed near the appliance in the permanent electrical system of the premises.
- The maximum leak current of the appliance is 1mA/kW.
- The appliance must be suitably earthed. The earth conductor must therefore be connected to the terminal (yellow-green) on the connection terminal board.

4.2.1 INSTALLING THE POWER SUPPLY CABLE

To access the power supply cable connection terminal board, proceed as follows:

- Remove the LH side panel and open the cover on the electrical control box (Fig. 6).
- Feed the cable through cable clamp hole "I" (Figs. 1a and 1b).
- Connect the cable to terminal board "mA" (Fig. 6) and fasten with the corresponding cable clamp.

Important: Press basket "up" button "6" (Figs. 2 and 3) to check the direction of basket movement, or operate water turbulence adjustment knob "7" (Figs. 2 and 3) to check for the presence of turbulence.

If necessary, change over two of the power phases on power terminal board "mA" (Fig. 6).

- Remount the panel and close the electrical control box.

4.2.2 EQUIPOTENTIAL SYSTEM

The appliance must be connected to an equipotential system. The earthing conductor must therefore be connected to the terminal marked "E" located near the cable clamp.

The equipotential wire must have a minimum cross-section of 10 mm².

The manufacturer declines any responsibility for failure to comply with existing accident prevention standards.

5. SAFETY DEVICES (Figs. 6 and 7)

The appliance is fitted with the following safety devices:

- One 1A thermal cutout protecting the wash pump motor and control circuit. To reset, press button "R".
- Three 6A fuses "Fb1" (aM) protecting the wash pump motor power supply.

- **Maximum water level control** device. Only installed on versions fitted with the PLC control system (see Fig. 3). When selector "8" is set to "AUTO", this safety device activates automatic filling to restore the water level to sensor "S" (Fig. 7). The above components are housed in the electrical box mounted on the front LH side of the appliance.

6. OPERATION CHECK

- Start up the appliance in accordance with the instructions for use.
- Check the appliance for leaks.
- Using the instructions manual, explain the operation and maintenance instructions to the user, paying particular attention to the warnings concerning its correct use.

7. SERVICING

(Only to be carried out by an authorised installer).

All components requiring maintenance may be easily accessed by removing the front and LH side panels.

Once a year check the:

- bearings (if worn or damaged, replace),
- rubber hoses (if damaged, replace),
- drain solenoid valve (if damaged, replace),
- actuator and in particular the articulated joints, fixings and piston rod (if worn or damaged, replace).

8. TROUBLESHOOTING

8.1 No water turbulence inside the tank:

- Remove the LH panel and make sure **pump "3"** (Figs. 4 and 5) rotates in the same direction as the arrow marked on the fan casing.
- Make sure adjustment knob "7" (Figs. 2 and 3) is set to maximum (valve fully open).
- Check whether the motor thermal cutout has tripped and, if necessary, reconnect by pressing button "R" (Fig. 6). Also check whether any of the power line fuses have blown.

9. REPLACEMENT OF COMPONENTS

(Only to be carried out by an authorised installer).

- Remove the LH side panel and control panel on the appliance to gain access to the following components:

9.1 Electrical box (Fig. 6)

Remove the four cover fixing screws to gain access to the:

- turbulence pump fuses,
- basket actuation contactors,
- turbulence pump power supply contactor/thermal cutout,
- power terminal board,
- PLC (if installed): this device is programmed by the manufacturer.
- Water level control device (if installed).

9.2 Water turbulence control valve,

Basket actuator,
Turbulence pump,
Water drain solenoid valve,
Control panel components.

II. INSTRUCTIONS FOR USE

This appliance is intended for industrial use, and must only be used by trained staff.

1. INSTRUCTIONS FOR THE USER

This appliance is designed and built to satisfy a variety of washing applications for **fresh vegetables** only. Only use the appliance in compliance with its rated specifications (see paragraph 2, of Chapter: Instructions for the installer).





Important:

- **Never start the vegetable washer if the tank is empty (no water).**
- During basket tilting operations, the area immediately around the appliance must be free of all personnel except for the operator in charge.
- The degree of contamination caused by chemicals and residual soil etc. varies considerably amongst different types of vegetable. For best results, do not wash vegetables which are extremely soiled or contaminated.
- The washing process essentially involves the removal of soil and residues from the surface of vegetables. The quality of washing is determined by the following parameters:
 - the **quantity** of vegetables washed (**which must not exceed the maximum load** specified in the table below),
 - the intensity of the circulating water flow,
 - the wash time, (interruption or otherwise of pump operation during the wash cycle),
 - the tank emptying frequency (partial or total). As a general rule, the tank should be emptied every 1 to 2 wash cycles when handling medium "soiled" products.
- Vegetables must be stored in premises fulfilling the required hygiene criteria both before and after washing.

Description of control panel:

For "**manual**" water level control models, refer to **Fig. 2**.


- 1 - Top basket "down" button
- 2 - Main switch
- 3 - Emergency stop button
- 5 - Bottom basket "down" button
- 6 - Basket "up" button
- 7 - "Water turbulence"

- adjustment knob - 
- 8 - Selector:
 -  fill
 -  wash
 -  empty

For "**automatic**" water level control models, refer to **Fig. 3**.

- 1 - Top basket "down" button
- 2 - Main switch
- 3 - Emergency stop button
- 4 - Cycle "START" button
- 5 - Bottom basket "down" button
- 6 - Basket "up" button

7 - "Water turbulence"

adjustment knob - 

8 - Selector:


- AUTO

-  fill

-  wash

-  empty

9 - 4-wash cycle selector

programs: I , II , III , IIII - 

Refer to figures 4 and 5 for a description of the appliance's operating components.

2. TURNING ON

Open the water shut-off cock and power up the appliance using the main power switch located upstream of the appliance.

2.1 Start-up sequence for "manual" water level control versions (Fig. 2)

- Make sure the pointer on selector knob "8" is set to **fill** (pointer to left).
- Turn selector "2" to "on" (I) to energise the water filling solenoid valve.
- Wait until the water level is level with **the overflow drain outlet** as the vegetables are immersed in the tank. During this phase, take care not to spray people or equipment in the vicinity of the appliance.
- This done, set selector "8" to **wash** (pointer up) to stop water filling and start the water turbulence pump.
- Then, using knob "7", adjust the circulating water **flow** according to the quantity and type of vegetables (heavy or light) being washed.
- Run the **wash cycle** for the required length of time (refer to the table below) and then set the turbulence flow control knob to minimum for a suitable time (to be decided by the operator) so that the solid particles removed from the vegetables can settle at the bottom of the tank.
- Next, position a trolley alongside the vegetable washer ready to receive the clean vegetables.
- Press **button "6"** to raise the basket to the **unloading position**. This button may be pulse-operated to ensure that all the water is drained from the vegetables before unloading them onto the trolley. In the interests of hygiene, always wear non toxic rubber gloves when handling washed vegetables.
- Finally, lower the basket back into the tank by **simultaneously pressing basket down buttons "1" and "5"**. This operation must only be performed by **one operator**.
- This done, set selector knob "8" to **empty** (pointer to right) to stop the water circulating pump and open the drain valve. The tank may now be partially emptied to remove any sediment.
- For further wash cycles, simply repeat the sequence outlined above.

Table: Load per cycle (Kg) - wash cycle length (minutes):

	LV300/301	LV500/501	Length
	Kg	Kg	min.
light vegetables	10	14	2-3
heavy vegetables	40	70	2-3

2.2 Start-up sequence for "automatic" water level control versions (Fig. 3).

These models have two operating modes:

- "AUTO" operating mode

- Make sure the pointer on selector knob "8" is set to "AUTO".
- Turn selector "2" to "on" (I). The tank will now start to fill with water until it reaches the required top-up level.
- Using selector "9", **select the wash cycle** most suitable for the type of vegetables being washed. **N.B.:** The length of the wash cycle varies according to the program selected: program I (time 50sec) - II (time 100 sec) - III (time 150 sec) - IIII (time 200 sec).
- Press "START" button "4" to activate the water circulating pump.
- Using knob "7", adjust the circulating water **flow** according to the quantity and type of vegetables (heavy or light) being washed.

The "AUTO" operating mode activates a **PLC** which controls the various cycle phases:

- **Pause** (pump off): to settle soil particles etc. at the bottom of the tank.
- **Partial empty**: to discharge any sediment deposits.
- Automatic top-up of **water level** inside tank.
- **Pump start**: to resume wash cycle.

The **pump automatically stops at the end of the cycle** (water turbulence interrupted).

- Next, position a trolley alongside the vegetable washer ready to receive the clean vegetables.
- Press **button "6"** to raise the basket to the **unloading position**. This button may be pulse-operated to ensure that all the water is drained from the vegetables before unloading them onto the trolley. In the interests of hygiene, always wear non toxic rubber gloves when handling washed vegetables.
- Finally, lower the basket back into the tank by **simultaneously pressing basket down buttons "1" and "5"**. This operation must only be performed by **one operator**.
- For further wash cycles, simply repeat the sequence outlined above.

- "Manual" control operating mode

Follow the instructions in section 2.1 about the **water level control and wash time** (water turbulence).

2.3 EMERGENCY STOP

- The control panels (Figs. 2 and 3) are equipped with a red **emergency stop button (3)**. When pressed, this button immediately shuts off the appliance which remains in this condition even after pressure on the button is released. To **reset, rotate the button (deliberate action)** in the direction indicated on the ring nut. Once the emergency stop button has been reset, the appliance can then be started up following the **full start-up sequence**.

3. TURNING OFF

- Turn selector knob "8" to **empty** (pointer to right) to drain any water from the tank. The drain solenoid valve remains

permanently open.

- Disconnect the electrical switch located upstream of the appliance.
- Remove the filter from the bottom of the tank and make sure the bottom is free of dirt or soil. If necessary, rinse down the bottom and sides of the tank using a shower head or a small quantity of water.

4. CARE AND MAINTENANCE

Before cleaning or carrying out maintenance work, always disconnect the appliance from the mains power supply by deactivating the cutout switch located upstream of the appliance.

- Each day wash the stainless steel surfaces with lukewarm soapy water, rinse and dry thoroughly.
- Sanitise the tank and basket using **non chlorine-based** products (e.g. ECOLAB's quaternary ammonia salts) and rinse thoroughly. This operation should be carried out once a week.
- When the appliance is not in use, do not leave the tank full of water since this will inhibit normal steel passivation and therefore make the steel surfaces more susceptible to the corrosive action of salt.
- Routinely check maximum water level sensor "S" (if installed, see Fig. 7) and, if necessary, remove any accumulated leaves or debris.
- When cleaning stainless steel, never under any circumstances use abrasive materials such as steel wool, iron brushes or scrapers, since they may leave ferrous particles on the steel surface, thereby causing it to rust. If necessary, use stainless steel wool, taking care to rub the surface following the direction of the satin finish.
- If the appliance is not used for long periods, proceed as follows:
 - disconnect the appliance from the power supply;
 - completely empty the tank and dry thoroughly;
 - apply a protective film of vaseline oil to all stainless steel surfaces by wiping vigorously with a cloth;
 - air the premises regularly.
- Periodically (at least once a year) the appliance should undergo a general inspection. For this purpose we recommend taking out a service contract.

5. WARNINGS

- Do not direct water jets towards the control panel when washing the appliance.
- After cleaning the appliance with alkaline detergents, rinse thoroughly.
- Do not use corrosive substances (e.g. muriatic acid) to clean the floor underneath the appliance.

VEGETABLE WASHER WITH TILTING BASKET MAIN COMPONENTS

- Water turbulence pump
"FIR" type, mod. 1225 1.5 HP

- Water drain solenoid valve
"MDB" type, mod. C2 220/240V 50/60Hz 24V

- Water inlet solenoid valve
"CEME " type, mod. 8616 ESM 1"FF 2V DN25, Coil :8624/50

- Linear actuator
"SERVOMECH" type, mod. ATL25

- Water level control device
"GICAR" type, mod. RL 30 1E 24V

- PLC
"SIEMENS" type, mod. LOGO230R 220V