1 - CONTENTS

1 - CON	TENTS	7 12 2	CONTROLS
2 CENE	TRAL INFORMATIONS	7.13.3	DIRECT SCRUBBING OR FOR
	ERAL INFORMATIONS	7 12 4	SLIGHTLY DIRTY SURFACES
2.1	MANUAL PURPOSE	7.13.4	INDIRECT SCRUBBING OR FOR
2.2	TERMINOLOGY AND SYMBOL LEGEND	7 40 5	VERY DIRTY SURFACES
2.3	PRODUCT IDENTIFICATION	7.13.5	POST-SCRUBBING OPERATIONS
2.4	SPECIFIC USE	7.14	SPECIFIC INSTRUCTIONS FOR THE
2.5	TECHNICAL MODIFICATIONS	USE	OF MODEL AC
3 - SAFE	TY INFORMATIONS	8 - MAI	INTENANCE INFORMATIONS
3.1	BASIC RECOMMENDATIONS	8.1	TANKS
3.2	NOISE AND VIBRATIONS	8.2	SOLUTION FILTER CLEANING
		8.3	SUCTION HOSE
4 - HANI	DLING INFORMATIONS	8.4	SQUEEGEE
4.1	PACKING LIFTING AND TRANSPORT	8.5	ACCESSORIES
4.2	CHECKS UPON DELIVERY	8.6	MACHINE BODY
4.3	UNPACKING	8.7	BATTERY
4.4	DIMENTIONS AND WEIGHT OF THE	8.8	THERMAL BREAKERS
	PACKING	8.9	PERIODIC MAINTENANCE
		8.9.1	DAILY OPERATIONS
5 - TECH	INICAL INFORMATIONS	8.9.2	WEEKLY OPERATIONS
5.1	SYMBOLS USED ON THE MACHINE	8.9.3	OPERATIONS AT EXTENDED
5.2	MACHINE STRUCTURE AND		INTERVALS
	FUNCTIONS	8.10	RECOMMENDED SPARE PARTS
5.3	DIMENTIONS		
			RATING CHECKS INFORMATIONS
	TALLATION INFORMATIONS	9.1	THE MACHINE DOESN'T WORK
6.1	HANDLEBAR POSITIONING	9.2	THE BRUSH DON'T ROTATE
6.2	BATTERY INSTALLATION	9.3	NOT ENOUGH OR NO CLEANING
6.2.1	BATTERY CONNECTION		SOLUTION
6.3	BATTERY CHARGER CONFIGURATION	9.4	NO SUCTION
		9.5	INSUFFICIENT SUCTION
	RATING INFORMATIONS	9.6	THE BRUSH MOTOR OR THE
7.1	MACHINE PREPARATION		SUCTION MOTOR DOESN'T STOP
7.2	BATTERY CHARGING	9.7	THE SQUEEGEE DOESN'T CLEAN OR
7.3	BRUSH ASSEMBLY / DISASSEMBLY		DRY EFFICIENTLY
7.4	MACHINE TRANSPORT	9.8	THE BATTERIES DOES NOT WORK
7.5	SQUEEGEE ASSEMBLY	9.9	THE BATTERIES DO NOT CHARGE OR
7.6	SQUEEGEE DISASSEMBLY		DO NOT HOLD A CHARGE
7.7	SQUEEGEE BLADES DISASSEMBLY/		
	ASSEMBLY	10. COI	NDITIONS OF WARRANTY
7.8	-	10.1	SCRAPPING OF THE MACHINE
7.9	FILLING AND DRAINING THE	10.2	DISPOSAL (WEEE)
	SOLUTION TANK		
7.10	DRAINING THE RECOVERY TANK		
7.11	ADJUSTING THE SOLUTION WATER		
	FLOW		
7.12	DRIVING THE MACHINE		
7.13	WORK METHOD		
7.13.1	PREPARATION AND WARNINGS		
7.13.2	BATTERY CHARGE LEVEL		

2 - GENERAL INFORMATIONS

2. GENERAL INFORMATION 2.1 MANUAL PURPOSE

To make it easier to read about and look up various subjects, refer to the table of contents at the beginning of the section in your language.

This manual has been prepared by the manufacturer and is an integral part of the product. As such, it must be kept in a safe place for the machine's entire service life until demolition.

The customer must ensure that machine operators have read or are familiar with the contents of this manual so that they strictly follow the instructions described herein.

Constant compliance with the instructions provided in this manual is the only way to guarantee the best results in terms of safety, performance, efficiency and service life of the product you now own. Non-compliance with these rules may cause injuries to people and damage to the machine, the scrubbed surface and the environment: in no case can such injuries or damage be attributed to the manufacturer.

This manual refers in detail to the machine and provides instructions and descriptions only about the battery and the battery charger provided.

2.2 TERMINOLOGY AND SYMBOL LEGEND

For the sake of clarity and to efficiently highlight the various aspects of the instructions provided, terms and symbols were used that are defined and illustrated here below:

- **Machine.** This definition replaces the commercial name to which this manual refers.
- **Operator**. 'operator' means the person or persons given the task of installing, operating, adjusting, maintaining, cleaning, repairing or transporting machinery.
- **Technician.** A technician is considered a person who has the experience, technical education, legislative and regulatory knowledge that allows him to carry out any type of required work, and the ability to recognise and to avoid possible risks during machine installation, and maintenance.
- - INDICATION SYMBOL Particularly important information to avoid machine malfunctions.
- △ ATTENTION SYMBOL Very important information to avoid serious damage to the machine and to the environment in which it operates.
- DANGER SYMBOL Vital information to avoid serious (or extreme) consequences affecting the health of persons and causing damage to the product and the environment in which it operates.



Total weight (ready to operate)

Max. working range incline 2% (Max. transporting range incline 10%)

Rated power brush drive



Rated power suction turbine

2.3 PRODUCT IDENTIFICATION

The nameplate located under the dashboard, above the battery connector, contains the information.

2.4 SPECIFIC USE

This appliance is suited for the commercial use, e.g. in hotels, schools, hospitals, factories, shops, offices, and rental companies.

This machine is a floor scrubber-drier: it must be used to scrub and to vacuum liquids of flat, rigid, horizontal, smooth or moderately rough and uniform floors that are free from obstacles in both civic and industrial environments. Any other use is prohibited.

Please refer very carefully to the safety information reported in this manual.

The scrubber-drier distributes a quantity of a water and detergent solution (adjustable) on the surface to be cleaned, while the brushes remove any dirt on the ground. The machine's suction system, using a ground squeegee, perfectly dries the liquids and the dirt just removed from the front brushes in a single pass.

By efficiently combining a cleaning detergent with various types of brushes (or abrasive disks), the machine can adapt to all the various combinations of floors and dirt.

2.5 TECHNICAL MODIFICATIONS

The manufacturer reserves the right to make technical modifications to the product, without prior notice, in order to make the necessary technical upgrades or improvements. For this reason, some details of your machine may be different from the information in the sales catalogues or from the illustrations presented in this booklet. However, this will not reduce safety or invalidate the information supplied to this regard.

3 - SAFETY INFORMATIONS

3. SAFETY INFORMATIONS

3.1 BASIC RECOMMENDATIONS

Carefully read the "instruction manual" before starting, using, performing unscheduled or routine maintenance or any other work on the machine.

⚠ Rigorously comply with all the instructions provided in this manual and in those for the batteries and battery chargers (with particular attention to warnings and danger notices).

The manufacturer will not be held responsible for injuries to persons or damage to property due to non-compliance with the aforementioned instructions.

⚠ This machine must be powered only with the safety extra-low voltage indicated on the technical data plate.

Before using the machine, make sure that each part is in the correct position.

⚠ The appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance

△ Do not operate this machine for any other purpose except for the use for which it was specifically designed. Evaluate the type of building where it will be utilized and rigorously comply with the current safety regulations and conditions.

☑ Do not use the machine in places without adequate lighting, in explosive environments, when harmful dirt is present (dust, gas, etc.), on roads or public passageways and in outdoor environments in general.

 \triangle The machine operating temperature range is +4°C to + 35°C; when not being used, store the machine in a dry and non-corrosive environment within a temperature range of between + 10°C and + 50°C.

When using the machine under any condition the humidity must range between 30% and 95%.

Never use or vacuum liquids, gases, dry dust, acids and solvents (e.g. paint thinners, acetone, etc.), even if diluted, inflammables or explosives (e.g. petrol, fuel oil, etc.); never vacuum flaming or incandescent objects.

 $\ensuremath{\Delta}$ Do not use the machine on slopes or ramps steeper than 2%.

For small slopes, do not use the machine sideways, always handle it with caution and never move backwards. When transporting the machine on steeper ramps (10% max) or slopes, be very careful to avoid tipping and/or uncontrolled accelerations. The machine can be handled on ramps and/or steps only with the brush head and squeegee lifted off the ground.

⚠ Never park the machine on a slope.

Never leave the machine unattended with the key in and connected; it may be left only after having disconnected it and taken the key out and guaranteeing against accidental movements and, if necessary, disconnecting it from the electrical power supply.

Make sure there are no other persons, and children in particular, in the area where the machine is being used.

△ Do not use the machine to transport persons/ things or to tow objects. Do not tow the machine. □ Do not use the machine as a support surface for any weight for any reason.

Do not block the ventilation and heat dispersion openings.

 $\ensuremath{\Delta}$ Do not remove, modify or by-pass the safety devices.

△ Always use individual safety devices to ensure operator safety: aprons or safety overalls, non-slip and waterproof shoes, rubber gloves, goggles and earphones, and masks to protect the respiratory tract. Before starting to work, remove necklaces, watches, ties and other objects that may cause serious injuries.

△ Do not insert hands between moving parts.

Do not use detergents that differ from those required and follow the instructions indicated on the relative safety sheets. Detergents should be stored in a place that is inaccessible to children. In case of contact with the eyes, rinse immediately with copious amounts of water and, if swallowed, immediately consult a physician.

Make sure that the battery charger power sockets are connected to an efficient earthing system and that they are protected by magneto thermal and differential circuit breakers.

 Δ Follow the battery manufacturer's instructions and comply with legal provisions. The batteries should always be clean and dry to avoid surface leakage currents. Protect the batteries against impurities, such as metallic dust.

When using battery acid, rigorously respect the relative safety instructions. In the presence of particularly strong magnetic fields, evaluate the pos-

3 - SAFETY INFORMATIONS

sible effect on electronic control devices.

Never spray water on the machine to clean it.

Recovered fluids contain detergents, disinfectants, water, as well as organic and inorganic material collected during work operations: dispose of them in accordance with current legal provisions.

△ If the machine malfunctions and/or operates inefficiently, turn it off immediately (disconnecting it from the electric power supply or from the batteries) and do not tamper with it.

Contact one of the manufacturer's technical service centres.

All maintenance or accessory replacement operations must be carried out in environments with adequate lighting and only after having disconnected the machine from the electric power supply by detaching the battery connector.

All work on the electrical system and all maintenance and repair operations (especially those not explicitly described in this manual) should be carried out only by authorized service centers or by specialized technical personnel who are experts in the sector and in the pertinent safety regulations.

The machine owner can only use original accessories and spare parts supplied exclusively by the manufacturer since such parts are the only ones that guarantee that the equipment will operate safely without any problems. Do not use parts disassembled from other machines or other kits as spare parts.

**Before each use, check the machine and, in particular, check that the battery charging cable and the connector are in good condition and safe for use. If they are not in perfect condition, do not use the machine for any reason until an authorized specialist repairs the defective parts.

If foam or liquid is noted, immediately turn off the suction motor.

Do not use the machine on textile flooring, such as rugs, carpeting, etc.

Wax, foaming detergents or dispersions along the hoses may cause serious problems for the machine or clog the hoses.

3.2 NOISE AND VIBRATIONS

- Acoustic pressure: LpL = 73 dB

- Acoustic power measured: LwA = 82 dBA

-Acoustic power granted: LwA = 83 dBA

- Vibrations: 0,29 m/s² (Uncertainty ±15%)

4 - HANDLING INFORMATIONS

4.1 PACKING LIFTING AND TRANSPORT

During all lifting or transport operations, make sure that the packed machine is securely anchored to prevent it from tipping over or falling accidentally. Transport vehicle loading and unloading operations must be carried out with adequate lighting.

The packed machine must be handled using adequate devices, making sure not to damage/strike any part of the packing, not to tip it over and to be very careful when placing it on the ground.

All these instructions also apply to the batteries and the battery charger.

4.2 CHECKS UPON DELIVERY

when the goods are delivered (machine, battery or battery charger) by the transporter, carefully check the condition of the packing and its contents. If the contents have been damaged, notify the transporter and reserve the right, in writing (select the word "reserve" on the document), to submit a claim for compensation before accepting the goods.

4.3 UNPACKING

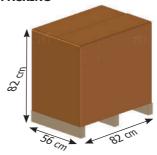
 $\ensuremath{\Delta}$ Wear safety clothing and use adequate tools to limit the risks of accidents.

The machine is packed with in a cardboard housing placed on a wooden crate; to unpack the machine carry out the following steps:

- Use scissors or clippers to cut and eliminate the plastic straps.
- Slip off the cardboard housing from the top of the packed machine.
- Remove the envelops inside and check their contents (use and maintenance manual, battery charaer connector)
- Remove the metallic brackets or plastic straps that secure the machine to the pallet.
- Release the brushes and the squeegee from the packing.
- Take the machine off the pallet (pushing it backward) by using an inclined surface that is solidly attached to the floor and to the pallet.

Keep all the pieces of the packing since they might be useful in the future to protect the machine and the accessories during transport to another location or to authorized service centers. If not, the packing can be disposed in accordance with current disposal laws.

4.4 DIMENTIONS AND WEIGHT OF THE PACKING



Volume:	0,38 m³	
Weight:		
Model AC	61 kg	
Model DC 12V with battery	70 kg	
Model DC 12V without battery	50 kg	

5.1 SYMBOLS USED ON THE MACHINE



General ON/OFF switch



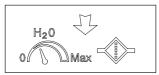
Brush motor switch



Suction motor switch



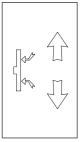
Solenoid valve switch



Symbol of the solution water flow adjustment

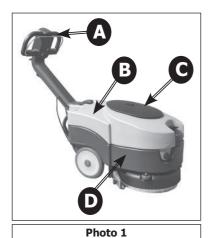


Symbol of the recovery tank drain hole



Symbol of the squeegee lifting/lowering

5.2 MACHINE STRUCTURE AND FUNCTIONS



A) Handlebar

- B) Recovery water tank
- C) Suction compartment cover
- D) Solution water tank

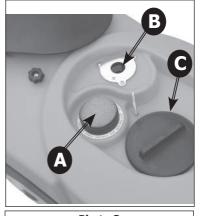


Photo 3

- A) Suction filter
- B) Automatic shut-off float
- C) Recovery tank inspection plug

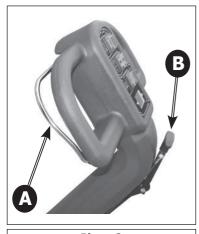


Photo 2

- A) Control lever
- B) Squeegee lifting/lowering lever

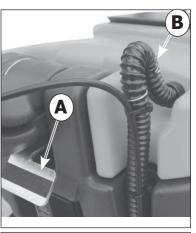


Photo 4

- A) Handlebar release pedal
- B) Suction hose

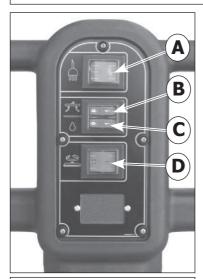


Photo 5

Model AC

- A) General ON/OFF switch
- B) Suction motor switch
- C) Solenoid valve switch for solution water outlet
- D) Brush motor switch



Photo 6

Model AC

A) Power supply cable

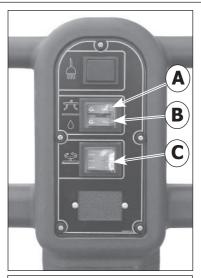


Photo 7

Model DC 12V

- A) Suction motor switch
- B) Solenoid valve switch for solution water outlet
- C) Brush motor switch

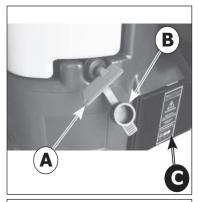


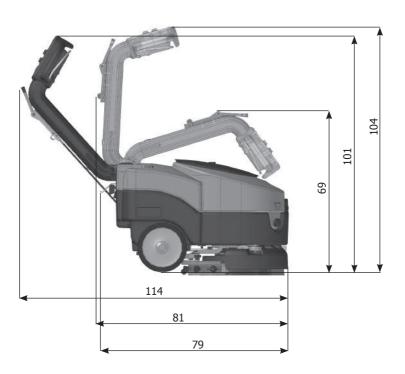
Photo 8

Model DC 12V

- A) General ON/OFF key / battery cutout switch
- B) Protecting cap
- C) Battery charger

5.3 DIMENTIONS

All dimentions are in centimetres.





6 - INSTALLATION INFORMATIONS

6.1 HANDLEBAR POSITIONING

To place the machine handlebar in the working position (handlebar opened) it is necessary to operate the handlebar release pedal (Photo 9 - A); press the pedal, pull the handlebar upward and place it in the working position wished.

The handlebar can be set in three fixed positions: one "handlebar closed" position for the machine storage or the machine transportation in a car (Photo 10) and two "handlebar opened" working positions (Photo 11 and Photo 12).



Photo 9



Photo 11
Handlebar opened - middle position.
To operate in small spaces it is recommended to set the handlebar in this position.



Photo 10 Handlebar closed position



Photo 12 Handlebar opened

6 - INSTALLATION INFORMATIONS

6.2 BATTERY INSTALLATION

The battery compartment is placed in the solution tank (Photo 14) and to access it is necessary to remove the recovery tank; to remove the recovery tank, detatch the suction hose from its siege (Photo 4 - B) and lift the tank by pulling it up as shown in Photo 13.

Place the battery in the battery compartment (Photo 14) checking that it is in perfect conditions.

6.2.1 BATTERY CONNECTION

Attach the battery wiring to the battery, connecting the terminals only on the poles marked with the same symbol (red wiring "+", black wiring "-") as shown in the connection diagram in Photo 15.

A battery short-circuit may cause an explosion!

After checking that all the controls on the panel are in position "0" or at rest, connect the battery connector to the machine connector (Photo 16 - B). Photo 16 shows the correct battery connection.

△ Close the battery compartment replacing the recovery tank, making sure not to crush any wire.



Photo 13

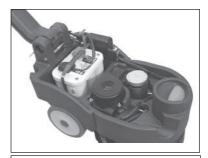


Photo 14

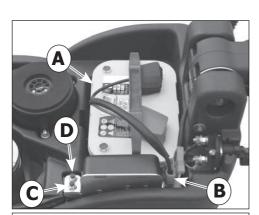


Photo 16

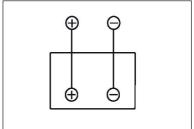


Photo 15

- A) 12V Battery with cabling
- B) Battery connector
- C) Suction motor thermal breaker
- D) Traction motor thermal breaker

6 - INSTALLATION INFORMATIONS

6.3 BATTERY CHARGER CONFIGURATION

 \triangle We recommend to call the assistance centre or a technician if you have problems with the setting given.

The machine is equipped with a **battery charger configurated for OPTIMA maintenance free battery**.

If the operator whish to use Pb-Acid battery or GEL/AGM battery, it is necessary to change the battery charger settings as follows:

△ DISPLAY OF THE BATTERY CHARGER SETTINGS The battery charger settings are shown by the blinking of the LED indicator when the battery charger is switching on:

the RED LED indicator (Photo 17 - B) flashes 2 times = the battery charger is set for PB-Acid batteries

- the GREEN LED indicator (Photo 17 - C) flashes 2 times = the battery charger is set for

GEL/AGM or OPTIMA batteries

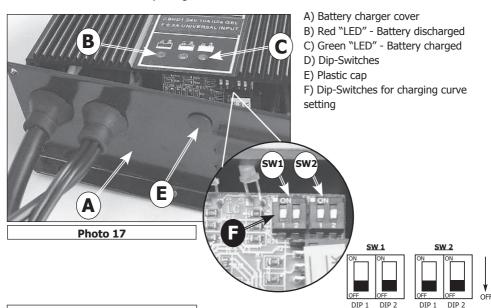
The battery charger settings will be displayed even if the battery is not connected.

△ DIP-SWITCH CONFIGURATION FOR CHARGING CURVE SETTINGS FOR BATTERY CHARGER CBHD1 12V 6A

To set the charging curve type for Pb-Acid, GEL/AGM or OPTIMA batteries it is necessary to operate on the dip-switches placed inside the battery charger (Photo 17 - D) (Photo 17 - F).

To access the dip-switches it is necessary to remove the lower panel of the battery charger (Photo 17 - A); it is also possible to reach the dip-switches by removing the plastic cap (Photo 17 - E).

To configurate the charging curve related to the different battery type it is necessary to set the dipswitches as indicated in the Table A here below:



T	ab	le	Α	

	SW1		SW2		
Tipo di batteria	Dip-Switch 1	Dip-Switch 2	Dip-Switch 1	Dip-Switch 2	
Pb-Acido	OFF	ON	ON	ON	
Gel / AGM	OFF	OFF	OFF	ON	
Optima	OFF	ON	OFF	OFF	

7.1 MACHINE PREPARATION

△ Before starting to work, wear non-slip shoes, gloves and any other personal protection device indicated by the supplier of the detergent used or considered necessary based on the operating environment.

■ Do the following before starting to work. Refer to the relative sections for a detailed description of these steps:

Check the battery charge level and charge the battery if necessary (see 7.2).

assemble the brush or pad driver (with the abrasive pad) that are suitable for the surface and work involved (see 7.3).

Assemble the squeegee, check that it is solidly attached and connected to the suction hose and that the drying blades are not too worn (see 7.5).

Fill the detergent solution tank with a mix of clean water and non-foaming detergent in an adequate concentration through the anterior hole. Leave 2 cm between the mouth of the plug and the level of the liquid (see 7.9).

■ To avoid risks, become familiar with the machine movements, carrying out test runs on a large surface without obstacles.

To obtain the best results in terms of cleaning and equipment service life, you should do the following simple but important operations:

- Identify the work area, moving all possible obstacles out of the way; if the surface is very extensive, work in contiguous and parallel rectangular areas.
- Choose a straight work trajectory and begin working from the farthest area to avoid passing over areas that have already been cleaned.

7.2 BATTERY CHARGING

Connect the patch cord to the power cable of the battery charger ($\mbox{Photo }19$ - \mbox{A}) and to the mains power.

When switching on, the battery charger CBHD1 will check the battery voltage and decide whether to start the charging process. If the battery is not connected to the battery charger, the red LED will flash (Photo 18 - A). If the result of the test is

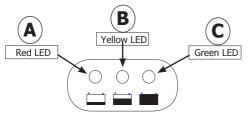


Photo 18

positive after 1 second the charging of the battery can start, with the red LED on.

The progress of the charging process is shown by three LED's: red, yellow and green, as in the whole range of the battery chargers.

The green LED (Photo 18 - C) shows the end of the charging. Disconnect the battery charger from the mains power.

 Δ For further information refer to the use and safety manual of the battery charger provided by the manufacturer.

If the machine is equipped with **Pb-Acid batteries**, charge only in a well-ventilated area, remove the recovery tank and open the battery plugs.

Follow the steps indicated in the battery manufacturer's operating and safety manual (see the battery maintenance section).

Use an hydrometer to check the element liquid intensity on a regular basis: if one or more elements are discharged and the others fully charged, the battery has been damaged and should be replaced or repaired (refer to the battery service manual). Close the element plugs and lower the superior cover.

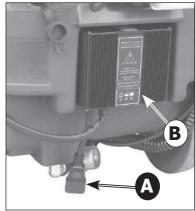


Photo 19

- A) Battery charger power supply cable
- B) Battery charger

7.3 BRUSH ASSEMBLY / DISASSEMBLY

△ Never use the machine if the brush or the pad holder with abrasive pad is not perfectly installed.

Assembly:

Place the brush on the floor;

lift the squeegee using the lifting/lowering lever (Photo 2 - B)

Holding the handlebar (Photo 1 - A) push it downward in order to lift the front part of the machine by rotating it on the rear wheels;

move the machine and place it over the brush, taking care that the coupling flange on the brush is under the metal coupling of the machine ($\!\!\!$ Photo $\!\!\!\!$ 20).

Switch on the machine using the key switch (Photo 8 - A) or the general ON/OFF switch on the control panel (Photo 5 - A).

Select the brush rotation with the brush switch (Photo 5 - D; Photo 7 - C) and start the brush rotation pulling the control lever (Photo 2 - A): the brush will couple automatically.

To assemble the pad holder follow the same procedure.

 \triangle Do not allow the length of the rows of brushes to become lower than 1 cm.

 Δ Do not allow the thickness of the abrasive disks to become less than 1 cm.

Working with excessively worn brushes or excessively thin abrasive disks may damage the machine and the floor.

Regularly check the wear on these parts before starting to work.

Disassembly or replacement:

Lift the squeegee using the lifting/lowering lever ($Photo\ 2$ - B)

Holding the handlebar (Photo 1 - A) push it downward in order to lift the front part of the machine by rotating it on the rear wheels;

Select the brush rotation with the brush switch (Photo 5 - D; Photo 7 - C) and start the brush rotation pulling the control lever (Photo 2 - A) while holding the machine lifted up; release the control lever to stop the rotation: the brush will unhook automatically.

To disassemble the pad holder follow the same procedure.

Switch OFF the machine using the key switch (Photo 8 - A) or the general ON/OFF switch on the control panel (Photo 5 - A).

lift the squeegee using the lifting/lowering lever (Photo 2 - B).

Holding the handlebar (Photo 1 - A) push it downward in order to lift the front part of the machine by rotating it on the rear wheels;

While holding the machine in this position, push it to the new working area or to the parking area.



Photo 20



Photo 21

7.4 MACHINE TRANSPORT

To transport the machine while not working, proceed as follows:

7.5 SQUEEGEE ASSEMBLY

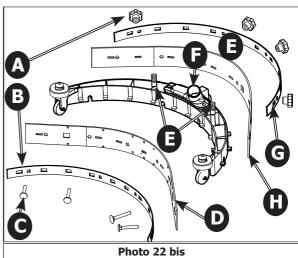
Put the two fixing pins of the squeegee (Photo 22bis - E) inside the holes in the squeegee support (Photo 22 - A). Screw the two knobs (Photo 22 - B) in order to secure the squeegee to the support .

Connect the suction hose coming from the machine to the suction coupling pipe on the squeegee body (Photo 23 - B).

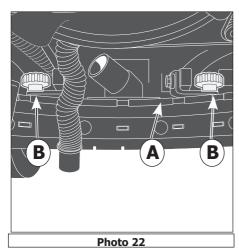
7.6 SQUEEGEE DISASSEMBLY

Disconnect the suction hose from the coupling pipe on the squeegee body (Photo 23 - B).

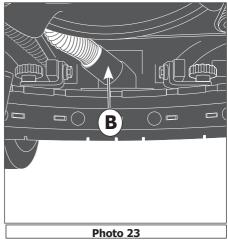
Unscrew the two knobs (Photo 22 - B) that secure the squeegee to its support and push down the squeegee to free it.



- A) Squeegee fixing knob
- B) Metal retainer for rubber blades
- C) Fixing bolts
- D) Rear rubber blade
- E) Squeegee fixing pin
- F) Suction hose coupling pipe
- G) Metal retainer for front rubber blade
- H) Front rubber blade



- A) Squeegee support
- B) Squeegee fixing knob



B) Suction hose coupling pipe

7.7 SQUEEGEE BLADES DISASSEMBLY / ASSEMBLY

Disassemble the squeegee from its support (see 7.5).

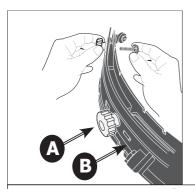
Unscrew the knobs (Photo 24 - A) and remove metal blade retainer (Photo 24 - B)

Extract the fixing bolts (Photo 24 - Ć) and remove the front metal blade retainer (Photo 25 - A); remove the squeegee rubber blades tearing them from a side.

To replace the squeegee rubber blades, follow the same procedure on the contrary starting from the

front blade;

lock the fixing bolts (Photo 24 - C) retaining them in the squared seats in the squeegee body; then, place the rear rubber blade (Photo 24 - D) and the metal blade retainer (Photo 24 - B), locking them with the fixing knobs (Photo 24 - A).



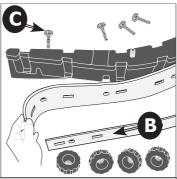
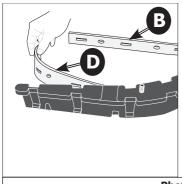


Photo 24

- A) Squeegee fixing knob
- B) Metal retainer for rubber blades
- C) Fixing bolts
- D) Rear rubber blade



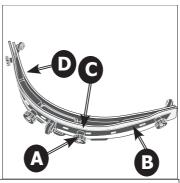


Photo 25

7.9 FILLING AND DRAINING THE SOLUTION TANK

The temperature of the water or the detergent should never exceed 50°C.

Always empty the recovery tank (Photo 1 - B) before filling the solution tank (Photo 1 - D)

To fill the tank:

- Pour into the tank the required quantity of the chemical product, considering the percentage indicated by the supplier, with reference to the full tank capacity listed on the product sheet.

 Δ Use only those products suitable for the floor and the dirt to be removed.

- Pour water in the filling opening placed in the front of the machine (Photo 28 - A).

Leave 2 cm between the filling opening and the liquid level. Do not fill beyond this point!

The machine have been designed for the use with non-foaming and biodegradable detergents made specifically for scrubberdriers. The use of other chemical products (such as sodium hypochlorite, oxidizers, solvents or hydrocarbons) may damage or destroy the machine.

- Follow the safety regulations specified in the relative section and indicated on the detergent container.
- Contact the machine manufacturer to obtain a complete list of available and suitable detergents.
 Always use non-foaming and biodegrad-
- Always use non-foaming and biodegradable detergents
- Do not leave the water hose unattended and insert it completely into the tank: the hose might move and get sensitive parts of the machine wet.

Close the tank with its foam plug.



Photo 28

A) Solution tank filling opening

To drain the tank:

- Unscrew the cap of the water filter placed in lower part of the solution tank and wait untul the tank is completely empty (Photo 29 A).
- Screw the water filter cap firmly.

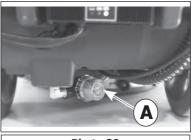


Photo 29

A) Water filter cap for the drainage of the solution tank

7.10 DRAINING THE RECOVERY TANK

The dirty water must be drained in accordance with national regulations.

The user is completely responsible for ensuring compliance with such rules.

After the detergent solution is finished, always empty the recovery tank (Photo O - 3) before filling it again.

In general, the recovery tank can be emptied whenever required, and even during intermediate phases of the work cycle.

The recovery tank and solution tank volume are the same and to avoid situations of potential danger for the suction motor it is necessary to

empty the recovery tank (Photo 1 - B) before filling the solution tank (Photo 1 - D); in any case, a safety float (Photo 3 - B) will stop the suction if the dirty liquid level is too high

If water or foam starts leaking from under the tanks for any reason, immediately turn off the suction motor and empty the recovery tank.

To drain the tank:

- Remove the recovery tank; to remove the recovery tank, detatch the suction hose from its siege (Photo 4 B) and lift the tank by pulling it up as shown in Photo 13.
- Carry the recovery tank to a suitable location to drain the dirty water and preferably near a toilet or a sewer drain (comply with the national regulations for waste water disposal).
- Unscrew the recovery tank drain plug (Photo

- 30 A) and empty the tank in the selected drainage point. After the drainage of the recovery tank it is recommended to check how much dirt is still in the tank unscrewing the inspection cap (Photo 3 C) and, if necessary, wash it inside to remove the solid dirt.
- Once the drainage and the cleaning of the tank is finished, close the tank screwing the drain plug ($Photo\ 30 A$) and the inspection cap ($Photo\ 3 C$).



Photo 30

A) Recovery tank drain plug

7.11 ADJUSTING THE SOLUTION WATER FLOW

To adjust the flow of the solution water it is necessary to operate the water valve placed over the brush unit.

Set the solution flow control lever in an intermediate position between the closed (Photo 31) and fully opened (Photo 33) position, according to the kind of cleaning to be performed.

The machine is provided with a solenoid valve; the solution water outlet occurs only when the machine is working, by pulling the control lever (Photo 2 - A);

to allow the water solution outlet it is necessary to set the solenoid valve switch (Photo 5 - C; Photo 7 - B) and the brush motor switch (Photo 5 - D; Photo 7 - C) to the "ON" position.

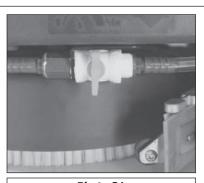


Photo 31Solution water valve closed

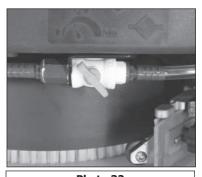


Photo 32Solution water valve partially opened

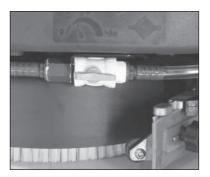


Photo 33
Solution water valve fully opened

7.12 DRIVING THE MACHINE Model AC

- Connect the power cable of the machine (Photo 6 A) to the power mains using a patch cord.
- Switch ON the general ON-OFF switch (Photo 5
- A).
- Switch ON the brush motor switch (Photo 5 D)
- \triangle The brush will start the rotation only when the operator will pull the brush operation lever (Photo 2 A).
- Switch ON the suction motor switch (Photo 5 B).
- Switch ON the solenoid valve switch for solution water outlet (Photo 5 C).
- Open the solution water valve rotating the lever (Photo 31, 32, 33).
- Lower the squeegee unit by using the lift/lower lever (Photo 2 B).
- Wash the floor moving forward slowly, pulling the brush operation lever (Photo 2 A) to start the brush rotation and the solution water outlet; releasing the lever the brush rotation will stop after few seconds.

 \triangle Remember to lift the squeegee before driving reverse to avoid damaging it.

Model DC 12V

- Verify that the battery connector placed under the recovery tank (Photo 16 B) is connected.
- Put the ignition key (Photo 8 A) in and turn ON the machine.
- On the on-board battery charger (Photo 19) check
- the battery charge status (Photo 18).
 Switch ON the brush motor switch (Photo 7 C)
- \triangle The brush will start the rotation only when the operator will pull the brush operation lever (Photo 2 A).
- Switch ON the suction motor switch (Photo 7 A).
- Switch ON the solenoid valve switch for solution water outlet (Photo 7 -B).
- Open the solution water valve rotating the lever (Photo 31, 32, 33)
- Lower the squeegee unit by using the lift/lower lever (Photo 2 B).
- Wash the floor moving forward slowly, pulling the brush operation lever (Photo 2 A) to start the brush rotation and the solution water outlet; releasing the lever the brush rotation will stop after few seconds.

 \triangle Remember to lift the squeegee before driving reverse to avoid damaging it.

7.13 WORK METHOD 7.13.1 PREPARATION AND WARNINGS

Remove any loose solid residue from the surface to be treated (using suitable tools, such as vacuum cleaners, sweepers, etc.). It this is not done, the solid dirt might prevent the squeegee from operating correctly, reducing drying efficiency. Only trained personnel can drive this machine.

7.13.2 BATTERY CHARGE LEVEL CONTROLS

The sequence of lights of the battery charge control (Photo 18 - C, B, A) shows the battery discharging. When the red light turns on (Photo 18 - A), turn off the brush motor, close the detergent solution outlet, finish drying the small residual moisture and go to the battery charging area to charge the battery.

⚠ The battery may be irreparably damaged if the residual charge level drops too low (see the battery operating manual). Do not force the battery discharge beyond the safety limits, turning the key off and on or in any other manner.

7.13.3 DIRECT SCRUBBING OR FOR SLIGHTLY DIRTY SURFACES

Scrubbing and drying in a single pass.

Prepare the machine as previously described and use it as described in paragraph 7.12 .

Never use the machine without the detergent solution: the floor might be damaged.

7.13.4 INDIRECT SCRUBBING OR FOR VERY DIRTY SURFACES

Scrubbing and drying in <u>various passes</u>.

Prepare the machine as previously described.

First set of operations:

Wash the floor as described in paragraph 7.11 without drying the floor

Allow the detergent solution to work on the dirty floor according to what is indicated in the information relative to the detergent used.

Second set of operations:

Proceed as explained in the previous "Direct Washing" paragraph (7.13.3) to also proceed with drying the floor.

Never use the machine without the detergent solution: the floor might be damaged.

7.13.5 POST-SCRUBBING OPERATIONS

Close the detergent solution outlet.

After having completely dried any traces of water on the surface, wait a few seconds and then lift the squeegee and turn off the suction motor.

Move to a suitable location to drain the tanks; empty and clean the tanks (see 7.10).

it from the control panel.

If necessary, charge the battery (see the relative section).

7.14 SPECIFIC INSTRUCTIONS FOR THE USE OF MODEL AC

The AC machine may be turned on only if the voltage indicated on the tag corresponds with the available voltage and that the electrical outlet is grounded (earthed).

Do not damage the feed cable; do not crush or pull on it.

ATTENTION Make sure that the power cable does not come into contact with the rotary brushes.

ATTENTION - The AC machine has parts, which are connected to the current; contact with these could cause grave injuries or even death.

- Before executing any type of operation on the machine always disconnect it from the electrical source.
- Never touch electric cables that are defective or worn.
- Before gaining access to the electrical system it is always necessary to disconnect the machine from the electrical source by removing the plug from the socket-outlet.
- In the case of defective, damaged, or cracked electric cables, replace immediately with authentic replacement parts.
- The network of connections must be protected from water spray.
- The patch cord for the connection of the machine to the mains power must conforms to current safety rules.
- The electrical system to which the machine is connected must be equipped with a cutout box.
- It is absolutely forbidden to use the machine in proximity to swimming pools or stretches of water.

MERGENCY SITUATIONS

In case of emergency:

- Immediately disconnect the machine from the power mains.
- Immediately apply proper first-aid.

If an accident should occur the machine must not be put into operation until a technician authorized by the manufacturer has examined it.

☑ Turn the key, remove it from the control panel and disconnect the battery from the machine wiring.
☐ All work on the electrical system as well as all maintenance and repair operations (especially those not explicitly described in this manual) should be carried out only by authorized service centers or by specialized technical personnel who are experts in

the sector and in the pertinent safety regulations.

Performing regular maintenance on the machine, and carefully following the manufacturer's instructions, is the best guarantee for obtaining the best performances and extended machine service life.

8. MAINTENANCE

8.1 TANKS

Drain the two tanks as described in the relative sections.

Remove any solid dirt by filling and draining the tanks until all dirt has been eliminated: use a washing hose or similar tool to do this.

⚠ Water hotter than 50°, a high-pressure cleaner or excessively powerful sprays may damage the tanks and the machine.

Leave the plugs of the tanks open (only while the machine is not being used) so that they can dry and thus prevent the formation of foul odors.

8.2 SOLUTION FILTER CLEANING

Remove the transparent cap ($\mbox{\sc Photo}$ 29 - $\mbox{\sc A}$) then remove the metal strainer.

Clean them, reinstall the metal strainer in its seat and close the water filter screwing the transparent cap.

8.3 SUCTION HOSE

Detach the suction hose from the squeegee (Photo 23 - B). Now you can wash the hose and remove any obstructions.

Firmly insert the hose on the squeegee body.

8.4 SOUEEGEE

 Δ Do not handle the squeegee with bare hands: wear gloves and any safety clothing needed to carry out the operation.

Detach the squeegee from the machine and clean it under running water using a sponge or a brush.

Check the efficiency and the wear on the strips in contact with the floor. They are designed to scrape the film of detergent and water on the floor and to isolate that portion of the surface to enhance the vacuum of the suction motor: this ensures that the machine will dry very efficiently. Working constantly in this manner tends to round or to deteriorate the sharp edge of the strip, thus reducing drying efficiently. This is why the squeegee strips must be replaced.

To replace the worn blades, follow the instructions in the relative section. Turn the blades around to wear down the other sharp corners or to install new ones.

8.5 ACCESSORIES

8 - MAINTENANCE INFORMATIONS

Remove and clean the brush or the abrasive pad disk.

△ To avoid damaging the floor and the machine, carefully check if foreign matter, such as metallic parts, screws, chips, cords or similar items, has become jammed.

Check that the brushes are flat as they work on the surface (check for any irregular wear on the brushes or on the abrasive disks). If necessary, adjust the slant of the action on the floor.

Use only the accessories recommended by the manufacturer: other products may reduce operating safety.

8.6 MACHINE BODY

Use a sponge or a soft cloth to clean the exterior of the machine and, if necessary, a soft brush to eliminate tough dirt. The machine's shockproof surface is rough to make it harder to see scratches caused during use. However, this does not make it easier to remove tough stains on the surface. It is prohibited to use steam machines, hoses with running water and high-pressure cleaners.

8.7 BATTERIES

PB-Acid batteries

Carry out maintenance operations in accordance with the manufacturer's instructions and with all the other instructions provided in this manual.

Exposing the element plates (not completely immersed in the acid solution) will lead to rapid oxidation and irreparably reduce the element's operating capacities.

An overflowing acid solution may corrode the machine.

Use battery chargers recommended by the manufacturer and, in any case, those that are suitable for the type of battery to be charged.

Always charge batteries in well-ventilated rooms: there is an explosion risk!

The use of gel or maintenance-free batteries is highly recommended.

GEL batteries

Carry out maintenance operations in accordance with the manufacturer's instructions and with all the other instructions provided in this manual.

Use only those battery chargers recommended by the manufacturer.

8.8 THERMAL BREAKERS

The machine is equipped with electric protection devices on the main operating components to avoid costly malfunctions.

Thermal breakers are installed to protect the suction motor ($Photo\ 16$ - C) wherever foreseen and the

brush motor (Photo 16 - D).

When one of these breakers trips automatically, the disabled function can be reactivated by fully depressing the button of the breaker.

When the thermal breakers trip, especially when the machine is used during the first few weeks, it might not be caused by actual machine malfunctions. However, a specialized technician should check the device if the relative breaker continues to trip.

8.9 PERIODIC MAINTENANCE

For all the operations described herein, refer to the instructions and detailed warnings in the relative sections.

8.9.1 DAILY OPERATIONS

Disassemble and check the brush or the pad driver disk (with the abrasive pad assembled).

Check that there are no foreign bodies that may impede the movement or efficiency of all cleaning parts.

Check the squeegee: clean the blades and check their condition/wear.

If Pb-Acid batteries are used, carefully carry out the operations described by the battery manufacturer. Charge the batteries.

8.9.2 WEEKLY OPERATIONS

Check and, if necessary, replace the splash guard. Carefully check the profile of the squeegee blades and replace them, if necessary.

Check that the suction hoses and conduits are not clogged;

Thoroughly clean the solution and recovery tanks. For other models with the Pb-Acid battery: check the level of the electrolyte in all elements and, if necessary, top up with distilled water. Refer to the battery manufacturer's detailed instructions.

Lift the filter compartment cover and check under the impermeable sponge filter for any signs of liquid; if there is any, drain it off into the dirty water tank.

8.9.3 OPERATIONS AT EXTENDED INTERVALS

Even though the machine was built with great precision and conforms to the most severe quality tests, the electrical and mechanical parts will inevitably be subjected to wear and aging after extended periods of use.

For safe and problem-free operation, your machine should be carefully checked every year by our authorized technical service centre (or by a specialist in the sector familiar with all the pertinent safety regulations contained in this manual).

This type of work may have to be carried out more frequently if the machine operates in particular/difficult situations and/or if required maintenance was

8 - MAINTENANCE INFORMATIONS

not performed.

8.10 RECOMMENDED SPARE PARTS

You'll always be able to use your machine as efficiently as possible by maintaining a stock of the most common consumable materials and by scheduling routine and extraordinary maintenance. Contact your dealer for a list of these spare parts.

9. OPERATING CHECKS

9.1 THE MACHINE DOESN'T WORK

- ☼ The key isn't inserted or correctly turned.
- © Insert and turn the key to position ON.
- ☼ The battery connector is disconnected or poorly attached to the main wiring connector.
- Firmly connect the two connectors.
- ⊗The machine is charging.
- © Complete the charging operation.
- The batteries are discharged.
- © Charge the batteries.

9.2 THE BRUSH DON'T ROTATE

- The brush motor switch is not selected.
- © Press the button to activate the brushes.
- ☼ The brush motor thermal breaker tripped; the motor overheated.
- © Troubleshoot the cause (cords or similar items that impede movement, surface too rough, etc.) and press the reset breaker (the first from the top).
- The transmission belt is broken.
- © Replace it.
- The motor relay or the brush motor is broken.
- © Replace it.

9.3 NOT ENOUGH OR TOO MUCH CLEANING SOLUTION

- ⊗The solution water tank is empty.
- © Fill the solution water tank after having emptied the recovery tank.
- The solenoid valve switch is in the OFF position
- © Set the solenoid valve switch to the ON position
- The solution water valve is is closed or almost. closed.
- Adjust/increase the detergent solution outlet flow by turning the flow adjustment lever.
- ☼ The solution water filter is dirt and clogged in some point.
- © Open the filter and clean it removing the dirt.

9.4 NO SUCTION

- 3 The suction hose is not connected to the squeegee.
- © Connect it correctly.
- ☼ The suction hose or the squeegee conduit are obstructed.
- © Clean out and remove any obstructions from the © Replace the damaged battery.

conduits.

- The suction motor is turned off.
- Activate it.
- The recovery tank is full.
- Empty it.
- The suction motor is not receiving electric power or is burned.
- © Check the connections and, for the latter case, replace the motor.

9.5 INSUFFICIENT SUCTION

- The cover of the suction compartment is not perfectly closed.
- Close it correctly.
- © The suction hose or the squeegee conduit are obstructed.
- © Clean out and remove any obstructions from the conduits.

9.6 THE BRUSH MOTOR OR THE SUCTION MOTOR DOESN'T STOP

© Stop the machine, cutting off the main power supply and disconnecting the main battery connector, and contact the technical service centre.

9.7 THE SQUEEGEE DOESN'T CLEAN OR DRY **EFFICIENTLY**

- © The squeegee blades are worn or are dragging solid dirt.
- ② Replace or clean them.
- The squeegee adjustment is not correct; the advancement must be exactly perpendicular to the running direction.
- Adjust the squeegee.
- © The suction hose or the squeegee conduit are
- © Clean out and remove any obstructions from the conduits.

9.8 THE BATTERY CHARGER DOESN'T WORK

- The battery charge doesn't start .
- © Check that the battery charger is connected to the battery. Consult the battery charger manual.

9.9 THE BATTERIES DO NOT CHARGE OR DO **NOT HOLD A CHARGE**

- © The batteries are new and do not generate 100% of the rated performances.
- The accumulator reaches the maximum performance after 20-30 complete charge cycles.
- The electrolyte has evaporated and does not completely cover the plates.
- © Check the battery manufacturer's use and maintenance manual.
- There are significant differences in density among the various elements.

9 - OPERATING CHECKS INFORMATIONS

Always consult the battery and battery charger use and maintenance manual. If this does not solve the problem, contact the authorised technical service centre.

The manufacturer CANNOT solve problems caused by using batteries and battery chargers that were not directly supplied.

10. CONDITIONS OF WARRANTY

All our appliances are subjected to rigorous tests and are covered by warranty against material or manufacturing defects for a period of 12 months. The warranty comes into effect from the date of purchase. The date of purchase is the date indicated on the receipt issued by the Reseller when the appliance is consigned. The manufacturer shall repair or replace any faulty parts free of charge during the period covered by the warranty. Any defects, which cannot be clearly attributed to material or manufacturing defects shall be examined by one of our Technical Service Centres or at our factory and charged in accordance with the outcome. The following are anyhow not covered by the warranty: accidental damage during transportation or handling, accidental damage caused by negligence or unsuitable conduct, damage due to incorrect or improper uses or installations which do not conform with the warnings included in the instruction manual, and anyhow due to unusual events which do not depend on the running or use of the appliance. Appliances requiring repair must be delivered at the Technical Service Centre complete with all their original accessories together with proof of purchase. If the appliance has been repaired or tampered with by unauthorised third parties, the warranty shall be considered null and void. The warranty shall also be considered null and void if the user is not able to produce an original (legible and complete) document proving purchase or if it not possible to read the appliance serial number located on the frame. The appliance shall not be replaced and the warranty shall not be extended once the appliance has been affected by a fault. Repairs shall be carried out at one of our Authorised technical Service Centres or at our factory. Appliances for repair must be sent carriage free, that is, the user shall pay and be responsible for carriage. The warranty does not cover the cleaning of working parts, any scheduled maintenance nor the repair or replacement of parts subject to normal wear and tear. The manufacturer shall not be held liable for damage to persons or things caused by any installation which does not comply with the instructions in the manual or faulty use of the appliance.

10.1 SCRAPPING OF THE MACHINE

If the machine will no longer be used, remove the batteries and dispose of them in accordance with the eco-compatibility regulations as set forth in European standard **2013/56/EU** or deposit them in an authorized collection centre.

To dispose of the machine, comply with the current laws where it is used: - disconnect the machine from the mains and clean it after emptying any liquids; - separate the machine into groups of homogeneous materials (plastics in accordance with the recycling symbol, metals, rubber, packing). For parts containing different materials, contact the competent authorities; Each homogeneous group must be disposed of in accordance with recycling laws. In addition, it is recommended to eliminate those parts of the machine that may be dangerous, especially for children.

10.2 DISPOSAL (WEEE)



As the owner of electrical or electronic equipment, the law (in accordance with the EU Directive **2012/19/EU** on waste from electrical and electronic equipment and the national laws of the EU Member States that

have implemented this Directive) prohibits you from disposing of this product or its electrical / electronic accessories as municipal solid waste and obliges you to make use of the appropriate waste collection facilities. The product can be disposed of by returning it to the distributor when a new product is purchased. The new product must be equivalent to that being disposed of. Disposing of the product in the environment can cause great harm to the environment itself and human health.

The symbol in the figure indicates the urban waste containers and it is strictly prohibited to dispose of the equipment in these containers. Non-compliance with the regulations stipulated in the Directive 2012/19/EU and the decrees implemented in the various EU Member States is administratively punishable.