RUBY 48BH 3SD
RUBY 55BH 3SD

07 2026

EN

Use and maintenance



Warning! Please read the instructions before use.

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INTRODUCTION

Thank you for having chosen our machine. This floor cleaning machine is used for the industrial and civil cleaning and is able to clean any type of floor. During its advance movement, the combined action of the brush and the detergent solution removes the dirt which is aspirated through the rear suction assembly, giving a perfectly dry surface.
The machine must be used only for such purpose. It gives the best performance if it is used correctly and maintained in perfect efficiency. We therefore ask you to read this instruction booklet carefully whenever difficulties arise in the course of the machine's use. In case of need, we ask you to contact our service department for all advice and service as may prove necessary.

GENERAL RULES OF SAFETY

The rules below have to be followed carefully in order to avoid injury to the operator and damage to the machine.

- Read the labels carefully on the machine. Do not cover them for any reason and replace them immediately if damaged.
- **ATTENTION**: The machine must be used exclusively by authorized staff that have been instructed on its correct and proper use.
- **ATTENTION**: Do not use the machine on areas having a higher gradient than the one stated on the number plate.
- **ATTENTION**: The machine is not to be used by persons, children included, with reduced physical, sensorial or mental capabilities, or with lack of experience or knowledge, unless they could benefit, through the intermediation of a responsible person for their safety, by a supervision or instructions concerning to its use.
- During the operation of the machine, pay attention to other people and especially to the children.
- Children shall not play with the machine.
- Children cannot carry out cleaning and maintenance of the machine.
- This floor cleaning machine is intended for commercial use, for example in hotels, schools, hospitals, factories, shops, offices and rental businesses.
- To prevent unauthorized use of the machine, switch off the power supply at the end of use and prevent accidental start-up by unauthorized personnel. For models equipped with a key, remove the key from the control panel.
- CAUTION This machine shall be stored indoors only.

Transfer

- Do not strike shelvings or scaffoldings where there is danger of falling objects.
- Do not use the machine as a means of transport.
- Adapt the working speed to the adhesion conditions: particularly, slow down before narrow curves have to be faced.
- When leaving the machine unattended, stop it on level surfaces, switch off the power supply and ensure that it is protected against unintended movements.

Storage and disposal

- Storage temperature: between 0°C and +55°C (32°F and 131°F).
- Perfect operating temperature: between 0°C and +40°C (32°F and 104°F).
- The humidity should not exceed 95%.
- Provide for the scrapping of the material of normal wear following strictly the respective rules.

When your machine has to stop activity, provide for the appropriate waste disposal of its materials, especially oils, batteries and electronic components, and considering that the machine itself has been, where possible, constructed using recyclable materials.

Correct use

- This machine is for indoor use only.
- Do not use the machine on surfaces covered with inflammable liquids or dusts (for example hydrocarbons, ashes or soot).
- In case of fire, use a powder based fire-extinguisher. Do not use water.
- Do not use the machine in explosive atmosphere.
- The machine has to carry out simultaneously the operations of washing and drying. Different operations must be carried out in restricted areas prohibited to non-authorized personnel and the operator has to wear suitable shoes.
- Signal the areas of moist floors with suitable signs.
- Do not mix different detergents, avoiding harmful odours.
- Use only detergents or other liquids suitable for the intended use of the machine, with a pH between 4 and 10. When using detergents, wear appropriate personal protective equipment, as indicated in the safety data sheet of the products used.



- Avoid brush operation when the machine is standing still in order to prevent floor damages.
- Before lifting the recovery tank, make sure that it is empty.

Maintenance

- If the machine does not work properly, check by conducting simple maintenance procedures. Otherwise, as for technical advice from an authorized assistance centre.
- For any cleaning and/or maintenance operation take off the power supply from the machine.
- Where parts are required, ask for ORIGINAL spare parts from the distributor and/or from an authorized dealer.
- Do not take off the protections which require the use of tools for their removal.
- Do not wash the machine with direct water, jets or with high water pressure nor with corrosive material.
- Every 200 working hours have a machine check by an authorized service department.
- Before using the machine, check that all panels and coverings are in their position as indicated in this use and maintenance catalogue.
- Restore all electrical connections after any maintenance operation.

GENERAL RULES OF THE BATTERIES



- At any intervention on the batteries, use suitable acid-proof gloves and glasses.
- Do not smoke near the batteries and do not approach them with free flames.
- Check that a fire-extinguisher is available on site.
- Be very careful in case of leakages or liquid outlets because corrosive.
- Do not place any metallic tools onto the batteries. Risk of short circuit!
- It is compulsory to hand over exhaust batteries, classified as dangerous waste, to an authorized institution according to the current laws.

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TECHNICAL DESCRIPTION		ruby 48bh 3SD	ruby 55bh 3SD
Cleaning width	mm in	508 20	550 22
Squeegee width	mm in	770 30	770 30
Working capacity, up to	m^2/h sqft/h	2030 21.851	2200 23.681
Brushes diameter	mm in	1 x 508 1 x 20	2x285 2x11
Brushes rpm	rpm	155	280
Pressure on the brushes	kg lbs.	30 66	24,5 54
Brushes motor	W A	450 18.5	420 17.5
Suction motor	W A	450 18.8	570 237.5
Suction vacuum	mbar water lift	120 48	120 48
Traction motor	W A	120 48	120 48
Type of drive		automatic	automatic
Movement speed	km/h mph	4 2.5	4 2.5
Maximum gradient	%	2	2
Water/Solution tank	l gal	40 10.6	40 10.6
Detergent solution tank (3SD)	l gal	3 0,8	3 0,8
Recovery tank	l gal	42 11.1	42 11.1
Machine length	mm in	1207 47,5	1140 45
Machine height	mm in	1068 42	1053 42
Machine width (without squeegee)	mm in	560 22	586 23
Weight of the machine (empty and without batteries)	kg lbs.	91 200.6	83.5 184.1
Gross weight of the machine (in conformity with EN 60335-2-72 art. 5.z102)	kg lbs.	205 452	197.5 435,4
Tension of the batteries	V	24	24
Capacity of the batteries	Ah_5	110	110
Weight of the batteries	kg lbs.	74 163	74 163
Compartment of the batteries	mm in	350x342x310 13,8x13,5x12	350x342x295 13.8x13.5x11.6
Acoustic pressure level (in conformity with EN 60704-1) Lpa	dB (A)	<70	<70
Class		III	III
Protection level	IP	23	23
Weight packed machine	kg lbs.	105 231,5	97.5 215
Packing dimensions (LxDxH)	cm in	118x67x119 46.5x26.4x47	118x67x119 46.5x26.4x47

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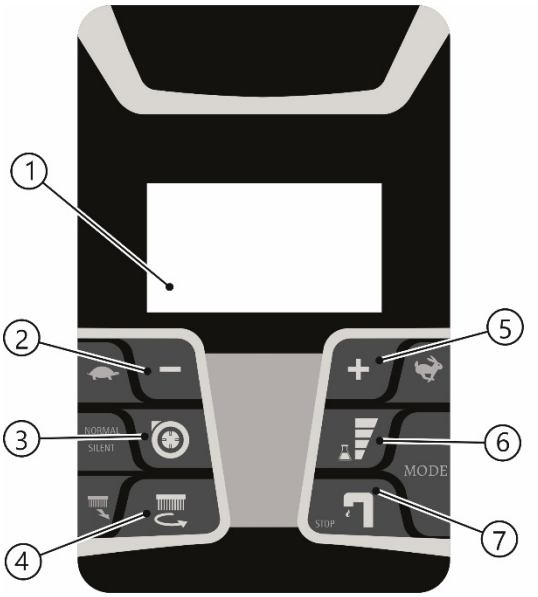
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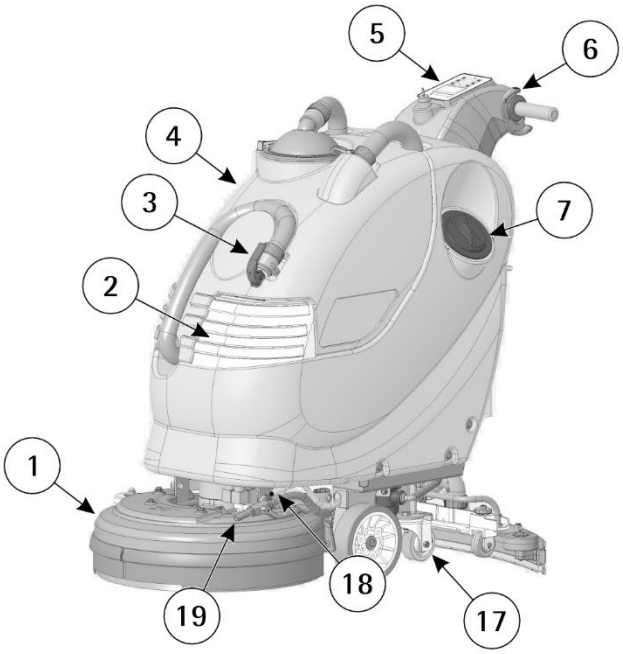
LEGEND CONTROL PANEL

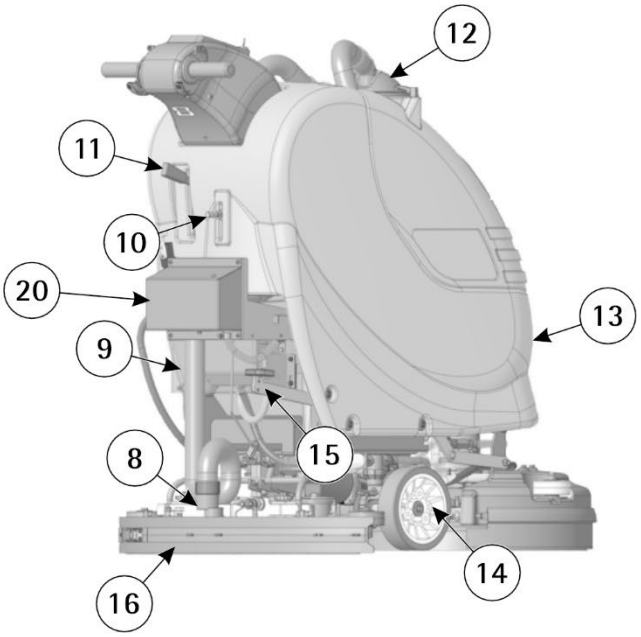
1. DISPLAY
2. BUTTON MAXIMUM SPEED REDUCTION
3. BUTTON SUCTION MOTOR
   BUTTON SUCTION MOTOR SILENT MODE
4. BUTTON BRUSHES-ON
   BUTTON AUTOMATIC BRUSHES UNLOCK
5. BUTTON MAXIMUM SPEED INCREASE
6. BUTTON DETERGENT SOLUTION ON/OFF
7. BUTTON SOLENOID VALVE ON/OFF (3SD, Ozone, Ozone + 3S, Standard)



LEGEND MACHINE

1. BRUSH BASE GROUP
2. DETERGENT SOLUTION TANK
3. RECOVERY TANK DRAIN HOSE CAP
4. RECOVERY TANK
5. DASHBOARD
6. DRIVE CONTROL LEVERS
7. DETERGENT SOLUTION DRAIN HOSE CAP
8. SQUEEGEE HOSE
9. ON BOARD BATTERY CHARGER
10. VALVE LEVER
11. SQUEEGEE LEVER
12. SUCTION COVER
13. SOLUTION WATER TANK
14. WHEELS
15. BRUSH BASE PEDAL
16. SQUEEGEE ASSEMBLY
17. CASTOR WHEELS
18. SOLUTION WATER DRAIN HOSE
19. SOLUTION TANK DRAIN HOSE
20. OZONE SYSTEM BOX





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DISPLAY READING

VISUALIZATION WHILE SWITCHING ON

When the machine is switched on, the display shows the following screen which indicates the software release and the battery setting.

				BATTERY SETTING
		relD: 0.0 relF: 0.0 24V GEL	24V GEL	Setting for gel batteries
	Display: 0.0		24V AGM	Setting for AGM batteries
SOFTWARE RELEASE	Chopper: 0.0		24V WET	Setting for lead/acid batteries
			24V Li	Lithium batteries settings
HOURMETER In the second screen the hourmeter is visualized. To display this screen in any other moment press simultaneously buttons 2 and 5 (see under "LEGEND CONTROL PANEL").		ruby 48bh 0000	ruby 55bh 0000	

VISUALIZZAZIONE COMANDI

Standard Mode



Aspirator off		Brush in function		Maximum speed level set		Battery charge level		Standard mode selection	
Aspirator on		Brush raised						Solenoid valve activated	
Aspirator in silent mode								Solenoid valve deactivated	
								3SD mode selection	3SD
								Solenoid valve 3SD on	
								Solenoid valve 3SD Off	
								Water carriage **(3SD,Ozone,Ozone +3S version only)**	H1
								Ozone mode selection	O_3
								Ozone + 3S mode selection	$O_3$3S

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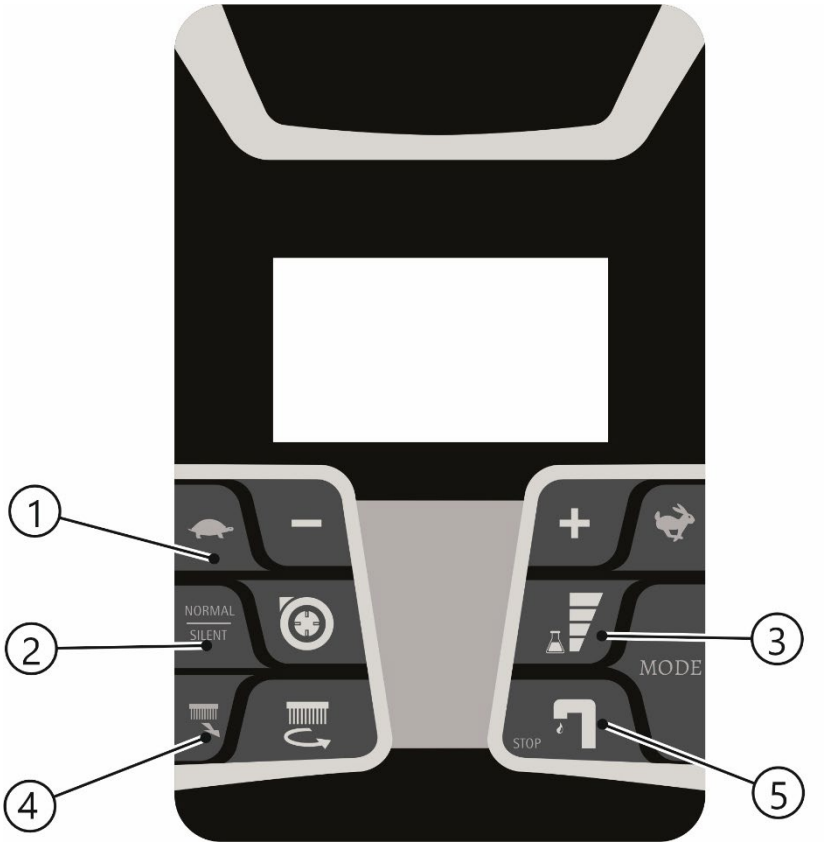
Detergent solution % used **(3SD version only)**	0.3%

NAVIGATION CONTROLS

Scroll up

Enter

Scroll down



Increase

Decrease

GENERAL SETTING
To enter the menu for the setting, use the keyboard of the instrument board and proceed as follows:
Keep the buttons (1) and (5) pressed simultaneously.
Turn the key to switch on the machine.
When “ID CHECK” is shown on the display, press the enter button (2).

Once entered in GENERAL SETTING it will be possible to change the following default settings by simply scrolling through the menu using buttons (1) and (4).

DISPLAY LANGUAGE SELECTION
English is the default language; it is possible to change it into Italian.
To select the language just visualize first "Language", then select it scrolling with the buttons (3) and (5).
Once the language is chosen, confirm using button (2).

DISPLAY BRIGHTNESS
Once entered in General Setting, it is possible to increase or decrease the display brightness using buttons (3) and (5).
Once selected the brightness, confirm using button (2).

DISPLAY TUNE (DISPLAY CONTRAST)
Once entered in General Setting, it is possible to improve the display contrast using the button (3) to increase it and the button (5) to decrease it.
Once selected the contrast, confirm using button (2).

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SYMBOLOGY ON THE MACHINE



Symbol denoting the solution valve.
Indicates the solution valve lever.



Symbol denoting the lifting of the squeegee.



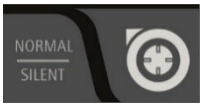
Symbol denoting the lowering of the squeegee.



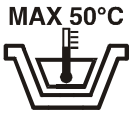
Brush activation / brush release button.



Symbol indicating an increase in speed.



Vacuum motor ON/OFF
Mode selection (Normal/Silent).



Indication of the maximum temperature of the solution detergent.
It is placed near the charging hole of the solution tank.



Symbol denoting the crossed bin.
Indicates that at the end of its activity, the machine has to be disposed conforming to the laws in force.



Solution flow enable button /
Water system selection: Standard, 3sd, Ozone, Ozone + 3s



Manual adjustment symbol.



Symbol indicating a decrease in speed.



Detergent solution percentage selection button.

SYMBOLOGY ON THE MANUAL



Symbol denoting the open book.
Indicates that the operator has to read the manual before the use of the machine.



Symbol denoting the open book.
For the good functioning of the battery charger, read the manual of the constructor.



Warning symbol.
Read carefully the sections marked with this symbol, for the security of both the operator and the machine.



Symbol that indicates the obligations of disconnecting the system from the batteries by disconnecting the connector before operating on the machine.



Symbol indicating the part of the manual related to the unboxing, preparation and start of the machine.



Icon indication the part of the manual related to the maintenance of the machine.



Symbol that indicates the obligation of wearing safety glasses.



Symbol that indicates the obligation of wearing safety gloves.



Symbol that precedes important information about the proper use of the machine.



Symbol that indicates operations that have to be carried out only by qualified personnel.

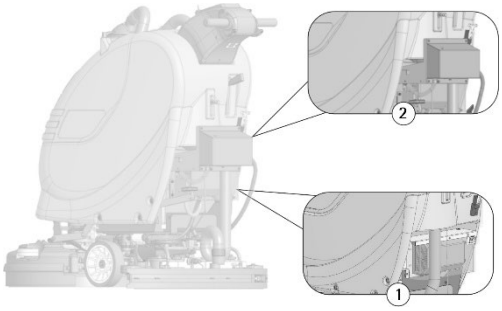


Icon indicating the part of the manual related to the machine use.

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OPTIONAL EQUIPMENT

OPTIONAL ACCESSORIES
On-board battery charger (1);
Ozone System (2).



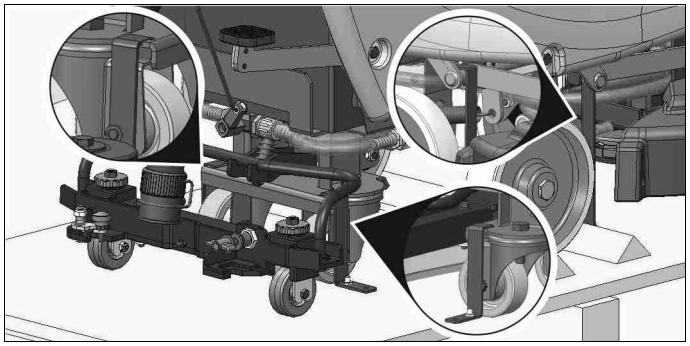
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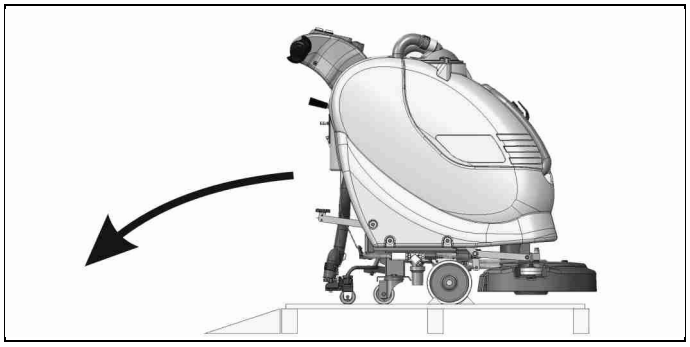
BEFORE USE

HANDLING THE PACKED MACHINE
The machine is supplied with suitable packing foreseen for fork lift truck handling.
For the packing dimensions see the “TECHNICAL DESCRIPTION” chart

Do not place more than 2 packings on top of each other.

UNPACKING OF THE MACHINE
1. Remove the external packing.
2. Unscrew the brackets that secure the machine to the pallet.
3. Move the machine backwards, as indicated in figure, avoiding heavy contacts to mechanical parts.
4. Keep the pallet for eventual transport.





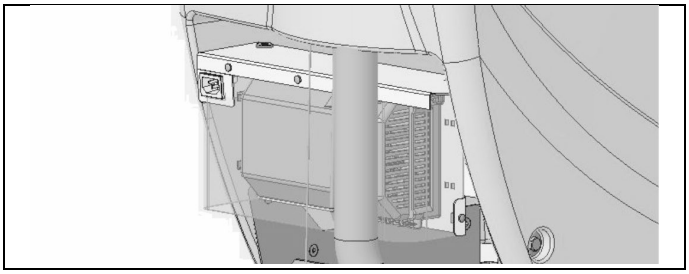
The portable slope is not included in the packaging.

BATTERY INSTALLATION
The machine is equipped either with batteries in serial connection or elements of DIN-type assembled together and connected in series, placed in its appropriate compartment under the recovery tank and must be handled using suitable lifting equipment (due to weight, considering the type of batteries chosen, and coupling system).
The batteries must be in accordance with CEI 21-5 Norms.

The machine foresees the standard use of traditional lead/acid batteries.
CHECK SETTING ON THE INDICATOR (see under paragraph "BATTERY CHARGE LEVEL INDICATOR").
In case of GEL or AGM batteries installation, it is necessary to modify the setting (see under “TO CHANGE THE BATTERY SETTINGS”).

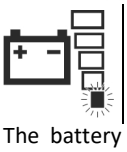
Strictly follow manufacturer/distributor indications for the maintenance and charge of the batteries. All installation and maintenance operations must be executed by specialized staff, using suitable protection accessories.

ON-BOARD BATTERY CHARGER
The machine is equipped with the on-board battery charger, please refer to the instructions of the constructor of this accessory what the charging operations concern.
The battery charger is connected directly to the battery poles.
During the charging operations a device is activated which does not permit the machine's functioning.
The main cable of the battery charger has a maximum length of two meters and must be connected to a single-phase socket.



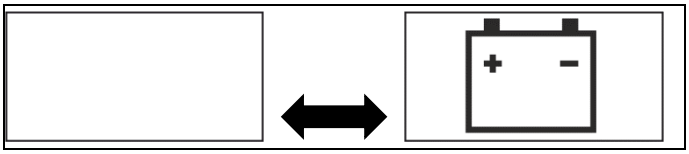
BATTERY CHARGE LEVEL INDICATOR
The battery charge level is visualized on the display with its respective symbol (see "VISUALIZATION CONTROLS").



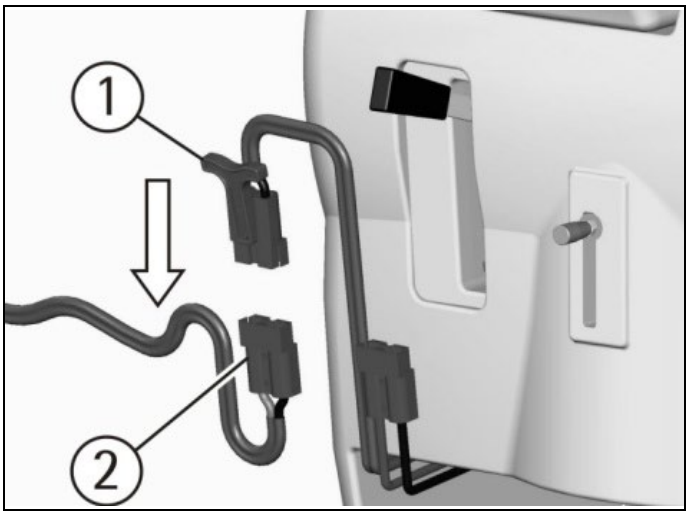


When the last segment of charge starts blinking, the battery is almost low and the suction and brushes functions are disabled.

The battery signal blinks on the whole display: also the traction stops.



CHARGING THE BATTERIES
Take the machine to a plain surface.
Plug in batteries connector (1) placed in the rear part of the machine, to connector (2) of the battery charger.



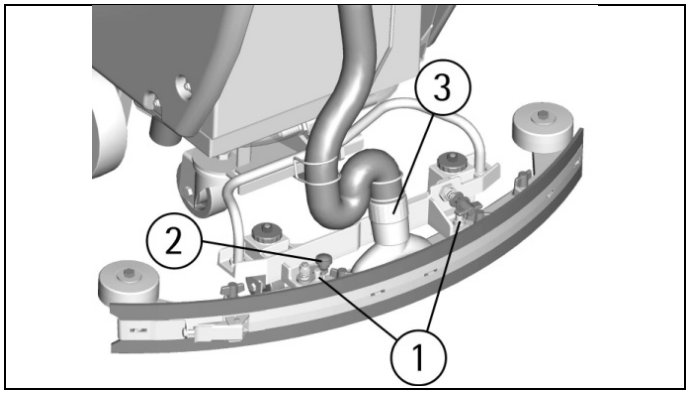
Never charge a GEL battery with a non-suitable recharger. Strictly follow the instructions supplied by the batteries and recharger manufacturer.
In order not to cause permanent damages to the batteries, it is necessary to avoid their complete discharge, providing for the

recharging within a few minutes after batteries discharge signal starts blinking.

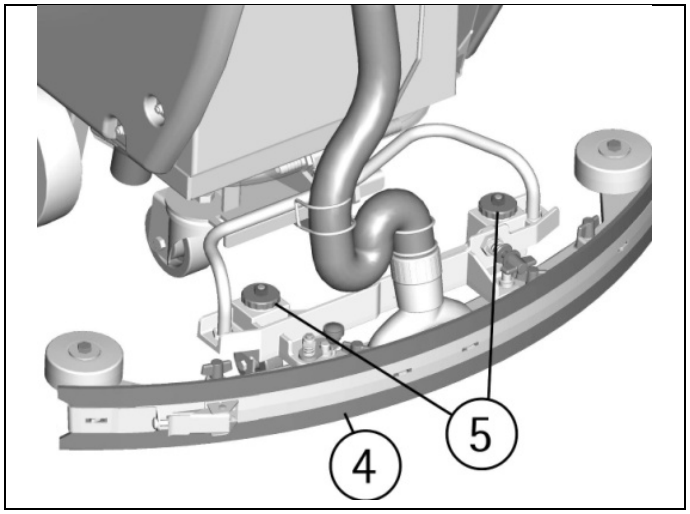
Never leave batteries completely discharged even if the machine is not used. In case of traditional batteries, please check the electrolyte level every 20 recharging cycles and eventually fill them up with distilled water after having carried out a complete recharge.

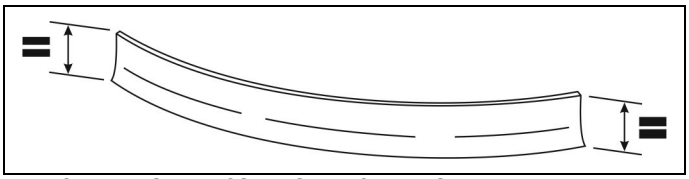
Danger of gas exhalations and emission of corrosive liquids. Fire danger: do not approach with free flames.

SQUEEGEE ASSEMBLY
With the squeegee support lowered, slide the two stud bolts (1) placed on the upper part of the squeegee inside the slots on the support. Block the squeegee by rotating the lever (2) clockwise.
Insert the squeegee hose (3) into its coupling, respecting its position as indicated in the figure.

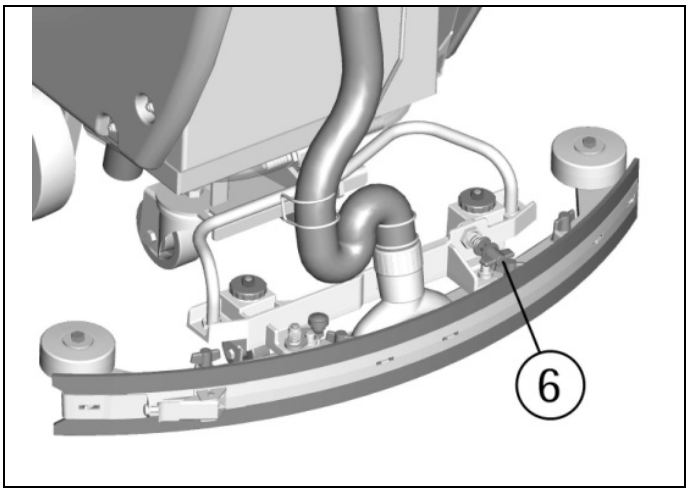


ADJUSTMENT OF THE SQUEEGEE HEIGHT
The squeegee must be adjusted in height depending on the rubber wear. In order to guarantee a perfect drying during the operation, the lower blade of the rear squeegee rubber (4) must work slightly bent backwards (operator side) in uniformed way in all its length.
Acting clockwise upon the two registers (5) it is possible to increase the bending of the rubber. Acting counterclockwise it is possible to decrease the rubber bending.
A label placed near the two registers (5) indicates rotation sense to increase or reduce the height.
Note: The wheels of the squeegee support must be adjusted through the registers (5) at the same height so that the squeegee works parallel to the floor.



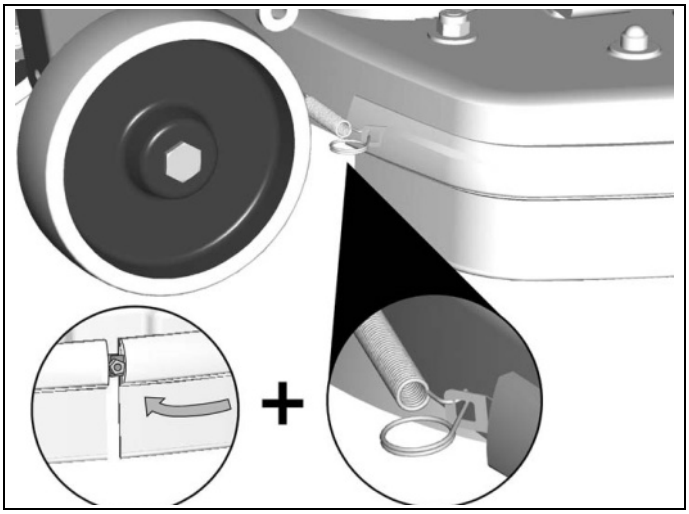


ADJUSTMENT OF THE SQUEEGEE INCLINATION
In case of need, to increase the rubber bending in the central part, it is necessary to tilt the squeegee rotating counterclockwise the register (6). To increase the rubber bending on the squeegee extremities, rotate the register clockwise.



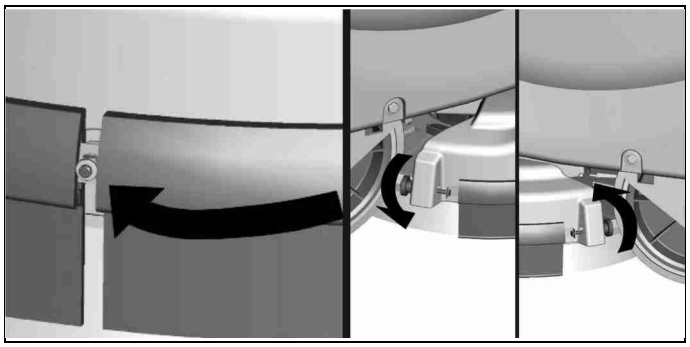
SPLASH GUARD ASSEMBLING

SPRING-LOCKING TYPE
The two splash guards have to be assembled onto the brushes base group. Insert the metal strips inside the suitable slots present on the rubber. Place the round hole at the flat extremity of the strip onto the screw placed in the front part of the brushes base group. Secure the strips through the nut blocking it.
Hook the coupling in the rear part of the brushes base group to the slot placed at the extremity of the metal strip still free. Please act as above for both the splash guard rubbers, paying attention to reduce to the minimum the gap between the two rubbers in the front part of the brushes base group.
With brushes assembled, the splash guard must slightly touch the floor.



KNOB-LOCKING TYPE
The two splash guards have to be assembled onto the brush base group. Insert the metal strips inside the suitable slots present on the rubber. Place the round hole at the flat extremity of the strip onto the screw placed in the front part of the brush base group. Secure the strips through the nut blocking it.
Screw down the knobs in the rear part of the cover in the free extremity of the metal strips. The operation has to be carried out for both splash guards.

With the brush assembled, the splash guard must slightly touch the floor.

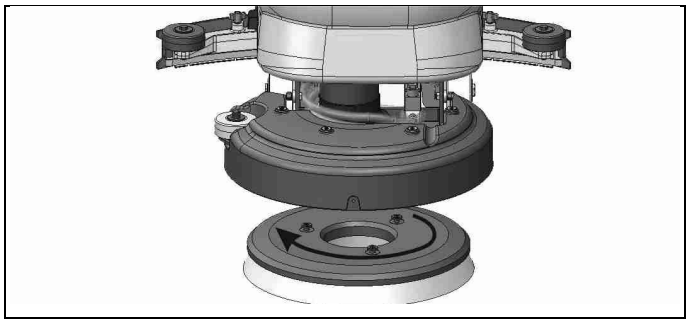


BRUSH/ES ASSEMBLY AND DISASSEMBLY

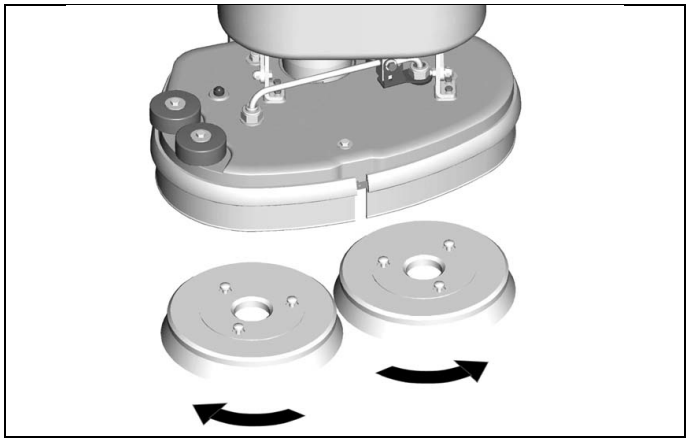
1. Take off the electric supply to the brush motor unplugging the batteries connector.
2. Acting upon the pedal lift the brush base group.
3. With the brush base group in lifted position, insert the brush into its plate seat underneath the brush base turning it until the three metal buttons are properly seated in their slots; rotate energically the brush to push the button towards the coupling spring until it gets blocked.

The figure shows the rotating sense for the brush coupling.

SINGLE BRUSH VERSION

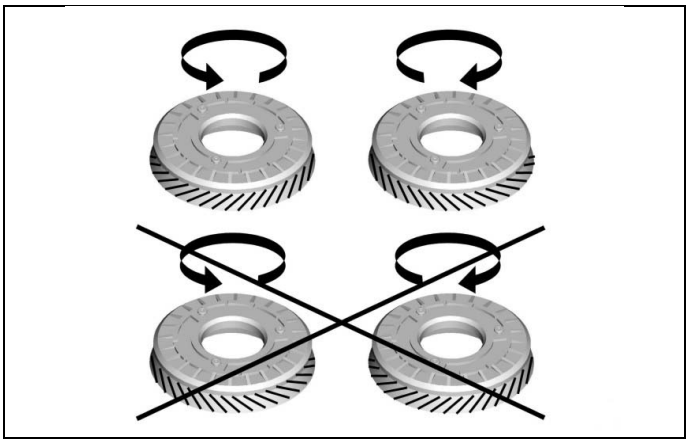


TWO-BRUSHES VERSION



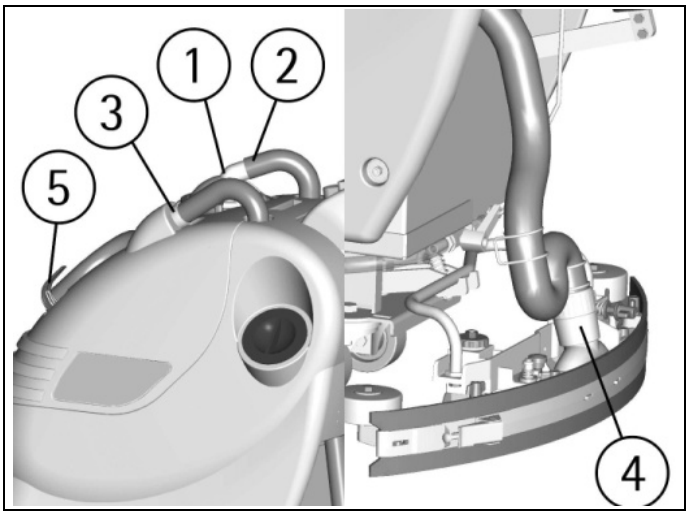
To unlock the brush, perform the same operations and rotate the brush the opposite way as for the locking.

For a longer life of the brushes we suggest to invert daily their position. Whenever brushes were deformed we suggest to reassemble them in the same position, avoiding that the different inclination of the bristles causes excessive motor overload or troublesome vibrations.



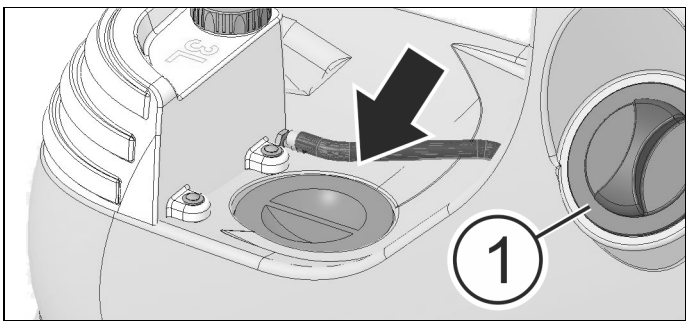
RECOVERY TANK

Check that the cover of the suction filter (1) is correctly secured, after rotating the levers and that the suction motor hose (2) is correctly connected.
Verify also that the squeegee hose is correctly inserted into the seats (3 and 4) and that the exhaust hose plug (5) placed in the front part of the machine, is closed.



CLEAN WATER TANK
The clean water tank is provided with an inspection opening. This permits to clean the exit point of the water.
Be sure that the cap is well tightened after the cleaning.

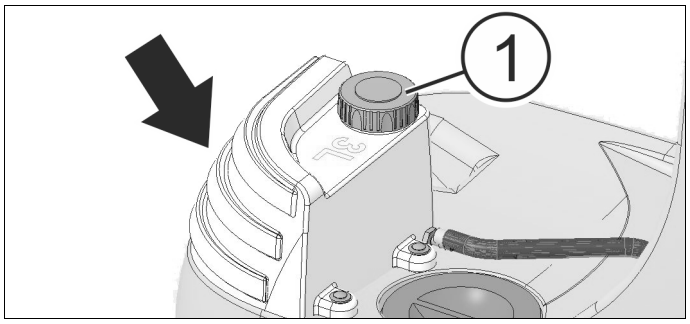
The capacity of the clean water tank is indicated in the technical data.
Open the screw plug (1) placed in the rear left part of the machine and fill the clean water tank with clean water at a maximum temperature of 50°C.



DETERGENT SOLUTION TANK



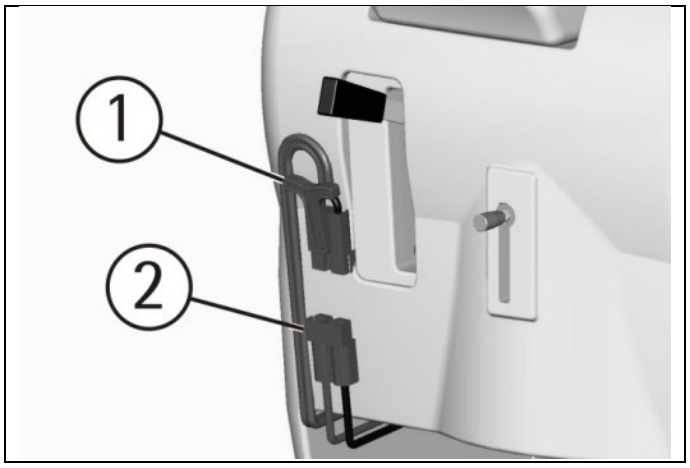
The machine is equipped with a tank for the detergent solution.
To load the detergent solution, take off the recovery tank and unscrew the cap (1).



To drain the detergent solution at the end of the operations, see chapter “DRAINING THE DETERGENT SOLUTION”.

PRE-CLEANING OPERATIONS

CONNECTION OF THE BATTERIES TO THE MACHINE
Plug in the batteries connector (1) to the machine connector (2), placed in the rear part of the machine

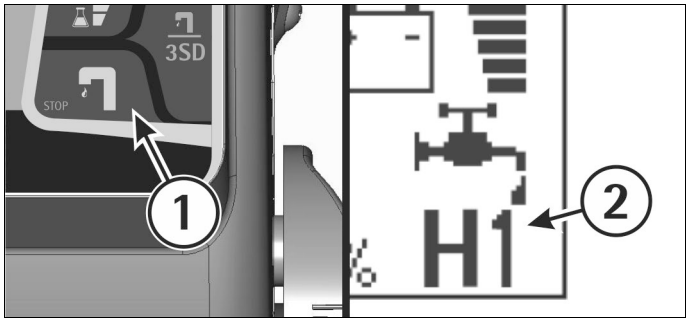


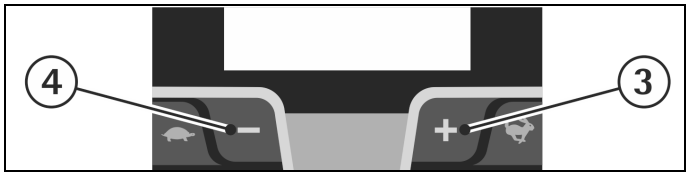
WATER CARRIAGE ADJUSTMENT

By default, the machine is set to 3SD mode, in which the water flow rate is automatically adjusted according to the machine's travel speed. Seven water flow levels (H1 to H7) can be selected, each corresponding to a different amount of water dispensed.

To select the water flow level:

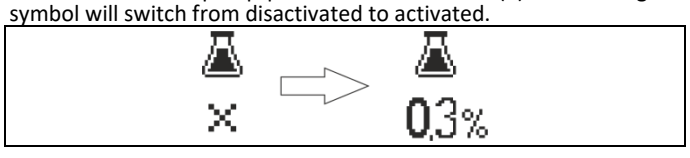
- Press and hold button (1) until symbol (2) starts flashing.
- Use the "+" (3) and "–" (4) buttons to select the desired water flow level from H1 to H7.
- Wait a few seconds without pressing any buttons. When the symbol stops flashing, the selected level is automatically stored.





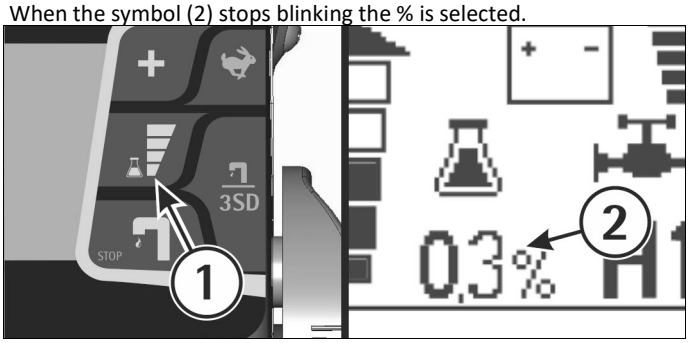
DETERGENT SOLUTION CARRIAGE ADJUSTMENT

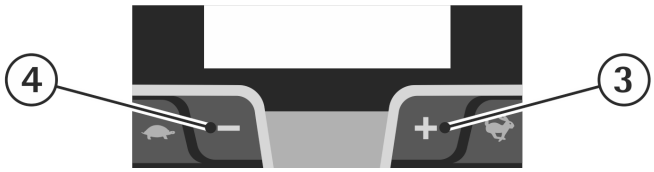
The machine comes out of the factory with the 3SD configuration, this makes it possible to adjust the detergent solution on 5 levels. Turn on or off the pump press once the button (1). The detergent symbol will switch from disactivated to activated.



To adjust the detergent solution carriage, keep button (1) pressed so the symbol (2) will start blinking.
The detergent concentration can be adjusted using the "+" (3) and "-" (4) buttons. The detergent flow rate is adjusted according to the water flow rate by selecting one of the following levels: 0.3% - 0.6% - 1.2% - 2.4% - 4.5%.

When the symbol (2) stops blinking the % is selected.



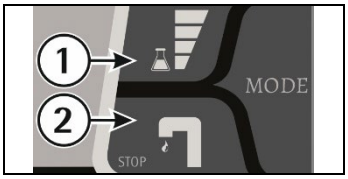




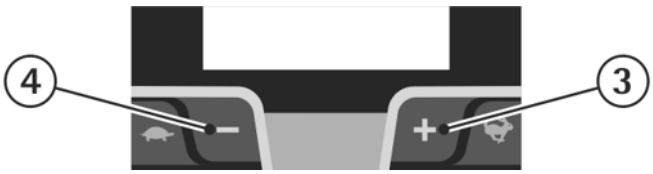
A long usage of the machine with the empty detergent solution tank might compromise the good operativity of the machine.

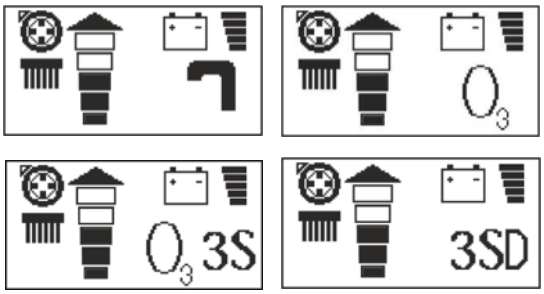
SELECTION OF THE OPERATING MODE

To switch from one operating mode to another, press and hold buttons (1) and (2) simultaneously.



When the symbol of the selected mode starts flashing, use the "+" (3) and "–" (4) buttons to select the desired mode (Standard, O3, O3+3S, 3SD).





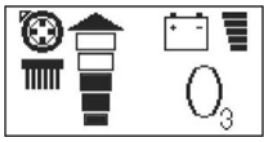
When the symbol stops flashing, the selected mode has been confirmed.

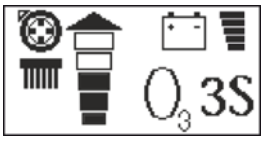
OPERATION OF THE OZONE SYSTEM, OZONE + 3S (optional)

The machine can produce water with an ozone concentration high enough to provide disinfection of the treated surfaces. For this to occur, it is essential that the ozonated water reaches an ORP level above 650 mV.
To make the best use of the ozone system, proceed as follows:

1. Ensure that the inside of the solution tank is clean; if necessary, rinse it by performing at least a couple of filling and emptying cycles.

2. Fill the solution tank with tap water (**do not add any detergent**).
3. To select the Ozone or Ozone + 3S system, (see the "Operating Mode Selection" section).





At system start-up, the green LED on the ozone unit remains off.

4. Set the desired water flow (see "Water Flow Adjustment" section).
5. Enable the brush control (see "STARTING OF THE MACHINE")
6. Enable the drive control by operating the levers located on the handlebar. When the solenoid valve is activated, the water pump starts and ensures the desired flow within the system.
7. The system carries out a polarity reversal period of 30 seconds at each start-up and every 2 cumulative hours of operation. This phase allows the self-cleaning of the generator in order to ensure its correct operation over time. The polarity reversal time is taken into account only when there is water flow within the system.
8. Once the polarity inversion has occurred, the green LED (9) lights up, indicating that the system is generating ozone. The system allows continuous operation for two hours. At the end of the two-hour period, the system performs self-cleaning again fully automatically.



ADJUSTMENT OF THE WATER/OZONE MIXTURE FLOW RATE (O3 MODE)

In the O3 configuration, the machine delivers a water/ozone mixture with a flow rate adjustable to 7 fixed levels (H1÷H7).

In this mode, the mechanical water flow control valve is bypassed; the flow rate is electronically controlled by the water pump.

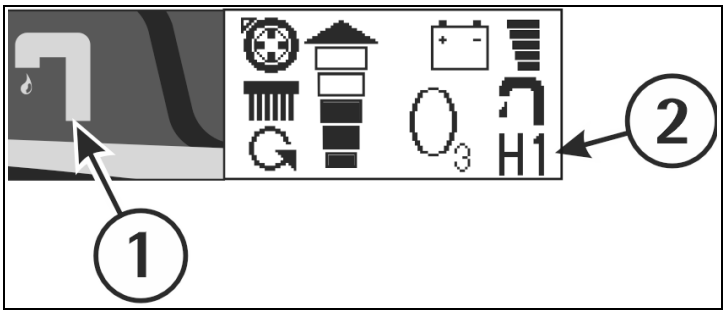
Activation of the water/ozone mixture:

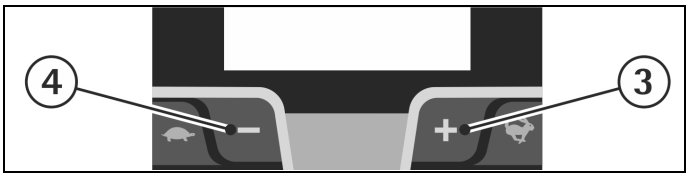
1. Select O3 mode.
2. Press button (1) to enable or disable the dispensing of the water/ozone mixture.
3. When the function is enabled, the solenoid valve and the water pump are automatically activated when the brush motors are switched on.
4. During dispensing, the droplet symbol flashes, indicating that the water/ozone mixture is being dispensed.
5. Flow rate adjustment

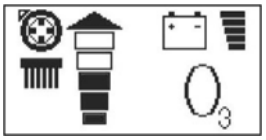
The flow rate of the mixture can be set to 7 fixed levels, identified from H1 to H7.

To change the level:

1. Press and hold button (1) for a few seconds.
2. When the level symbol (2) starts flashing, use the "+" (3) and "–" (4) buttons to select the desired level.
3. Only levels H1 ÷ H7 can be selected;
4. After a few seconds without pressing any button, the symbol stops flashing and the selected level is confirmed.









ADJUSTMENT OF THE WATER/OZONE MIXTURE FLOW RATE (O3 + 3S MODE)

In the O3 + 3S configuration, the machine delivers a water/ozone mixture with a flow rate adjustable to 7 levels (H1÷H7), proportional to the machine's travel speed.

In this mode, the mechanical water flow control valve is bypassed; the flow rate is electronically controlled by the water pump according to the machine's travel speed.

Activation of the water/ozone mixture

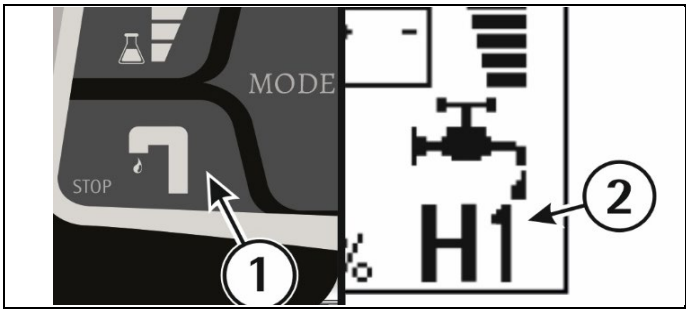
1. Press button (1) to enable or disable the dispensing of the water/ozone mixture.
2. When the function is enabled, the solenoid valve and the water pump are automatically activated when the brush motors are switched on.
3. During dispensing, the droplet symbol flashes, indicating that the water/ozone mixture is being dispensed.
4. Flow rate adjustment

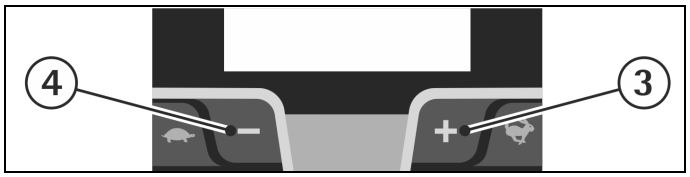
The system uses 7 adjustment levels (H1 ÷ H7), which determine the reference flow rate of the water/ozone mixture.

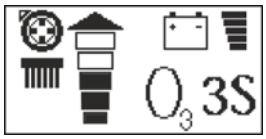
At each selected level, the flow rate is automatically adjusted according to the machine's travel speed, maintaining a constant ratio between the amount of solution dispensed and the treated surface area.

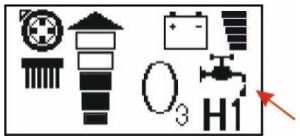
To change the level:

1. Press and hold button (1) for a few seconds.
2. When the level symbol starts flashing, use the "+" (3) and "–" (4) buttons to select the desired level.
3. Only levels H1 ÷ H7 can be selected;
4. After a few seconds without pressing any button, the symbol stops flashing and the selected level is confirmed.











Ozone is a very penetrating gas, and it can be irritating.

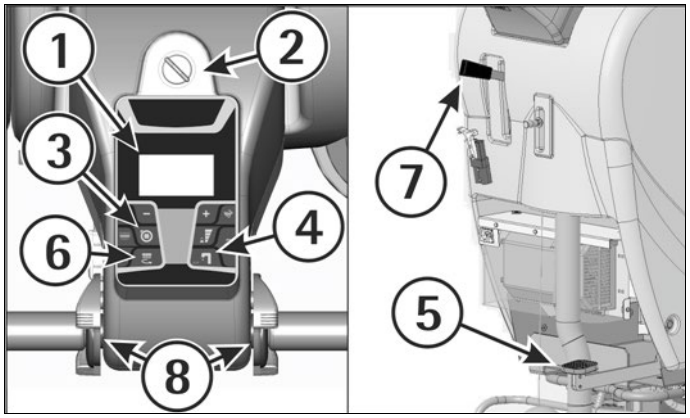
The ozonated water is strongly oxidizing, therefore in order to protect from oxidization (rust) the metal parts of the machine, it is better to rinse with water all the lower parts of the machine at least once a week.

At the end of the work, it is not necessary to empty the solution tank.

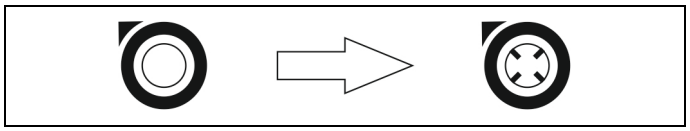
EN

STARTING THE MACHINE

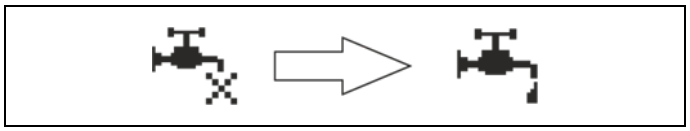
Every control is visualized on the display (1).



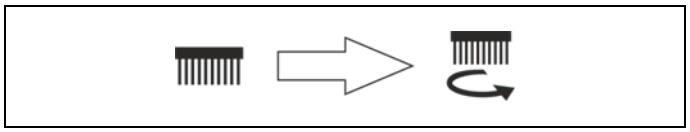
1. Turn the key (2) clockwise.
2. Check the battery type and the charge level on the display (1).
3. Press the suction motor push button (3); the suction motor symbol changes from off to on and the motor starts suck up.



4. Press the solenoid valve push button (4); the solenoid valve symbol changes from closed to open.



5. Lower the brush base onto the floor by pressing the pedal (5).
6. Turn on the brush by pressing button (6), on the display is visualized first the down symbol and then the one of the brushes motor activation.

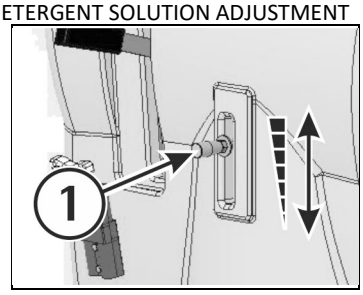


7. Acting upon the squeegee lifting lever (7) lower the squeegee.
8. Acting upon the levers drive control (8) the machine starts to move, The brush starts to rotate and the water begins to flow automatically.
   Releasing the drive control levers will stop the flow.
9. During the first metres check that the squeegee adjustment guarantees a perfect drying action and that the detergent solution flow is appropriate. It has to be sufficient to wet the floor uniformly avoiding the leakage of detergent from the splash guards. Always consider that the correct quantity of solution detergent depends on the type of floor, dirtiness and machine speed.

Moving the machine backwards, make sure that the squeegee is lifted.

WORKING WITH THE MANUAL DETERGENT SOLUTION ADJUSTMENT

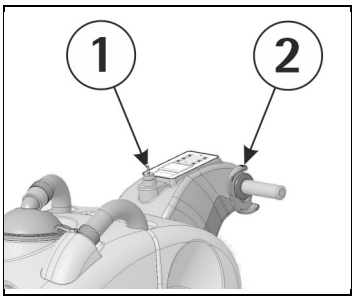
If the manual adjustment mode is selected (see chapter (MANUAL ADJUSTMENT OF THE DETERGENT SOLUTION CARRIAGE) the detergent solution carriage is being adjusted using the valve lever (1).



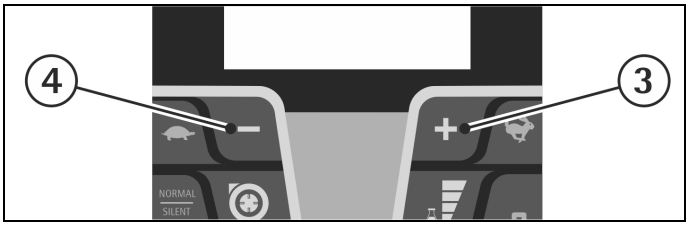
MOVEMENT AND SPEED ADJUSTMENT

The traction of the machine is given through an electronically controlled motor.

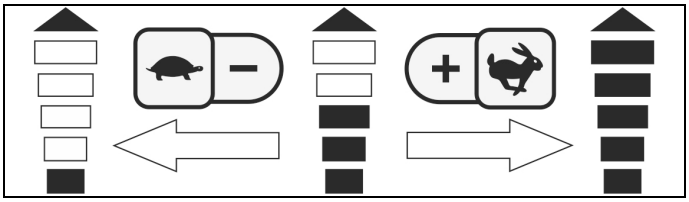
To move the machine, act upon the key (1) and then rotate the levers drive control (2) placed on the handlebar, in forward for the forward drive, in reverse for the backward drive. The control acts in a progressive way, therefore it is possible to graduate the speed depending on each requirement rotating the levers whatever it is necessary.



Furthermore, it is possible to adjust the maximum speed acting upon the push button (3) to increase it and on the button (4) to decrease it.



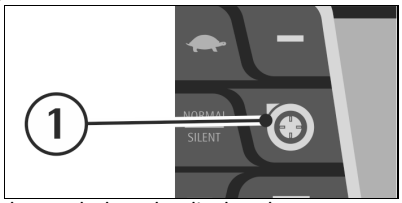
Every change will be visualized through its symbol on the display.



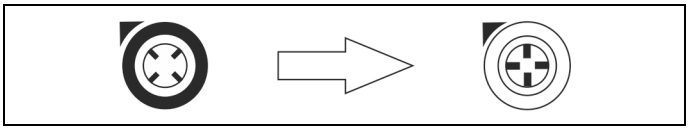
During reverse motion the speed is reduced.

SUCTION MOTOR SILENT MODE

It is possible to start the silent mode of the suction motor by pressing for a few seconds the switch-on button (1) of the suction motor.

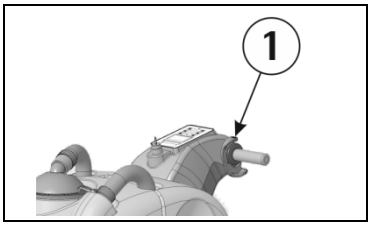


When the silent mode is on, the symbol on the display changes.

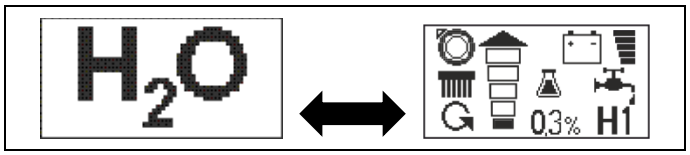


WORKING BRAKE

To stop the machine during normal working situation, it is sufficient to release the levers drive control (1), as the machine is equipped with an electronic braking system. The brush and the detergent solution stop automatically.

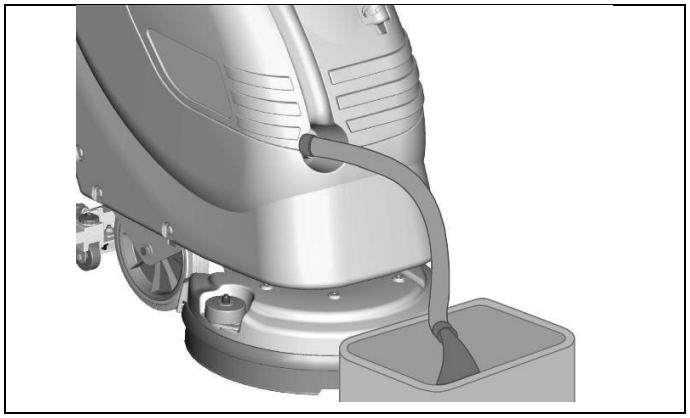


DETERGENT SOLUTION RESERVE SIGNAL (H2O ON THE DISPLAY)
When the indication H2O on the display appears, this means that the detergent is getting low corresponding to 10% of the maximum capacity of the solution tank.



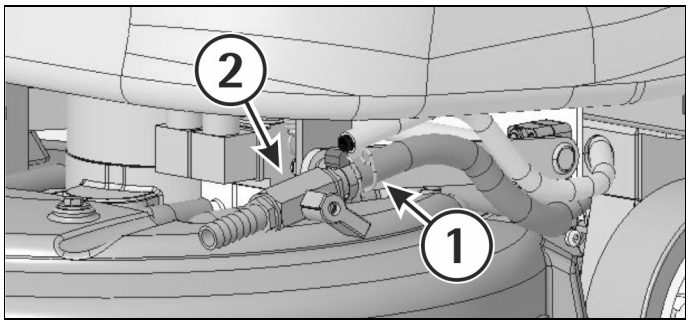
OVERFLOW DEVICE

In order to avoid serious damages to the suction motor, the machine is equipped with a float that intervenes when the recovery tank is full, closing the suction hose and stopping the suction.
When this happens, it is necessary to empty the recovery tank.
1. Hold the exhaust hose placed in the front part of the machine.
2. Take off the exhaust plug acting upon its lever and empty the recovery tank into appropriate containers, according to the standard norms for the liquid disposal.



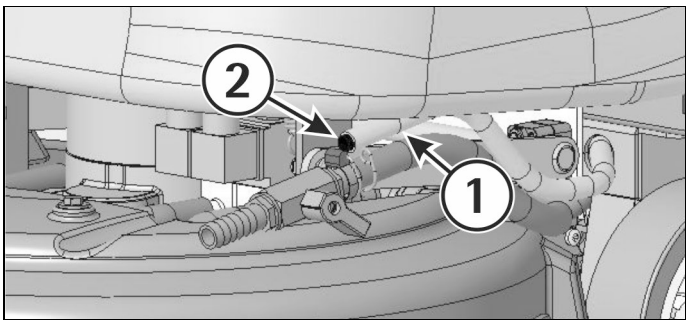
DRAINING THE WATER (3SD)

To drain the water left in the tank:
1. Bring the machine to an appropriate place for tanks draining.
2. Take off the drain hose (1) from its support.
3. Turn the valve (2) the drain the water.



DRAINING THE DETERGENT SOLUTION

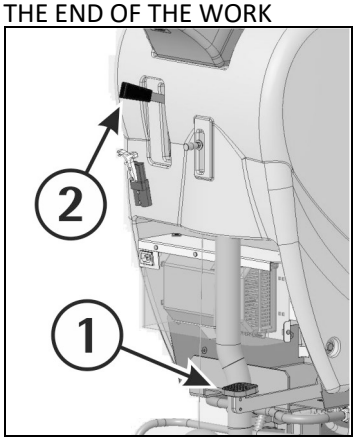
To drain the detergent left in the detergent tank:
1. Take off the drain hose (1) from its support.
2. Take off the cap (2).
3. Collect the detergent solution on its proper bin.



Do not mix different chemical detergent solutions.

STOPPING THE MACHINE BY THE END OF THE WORK

Before performing any maintenance:
1. Turn off the brush motor, the suction motor and the solenoid valve
2. Lift the brush base by pressing the pedal (1).
1. Lift the squeegee through the lever (2).
2. Take the machine to the place where it has to be drained.



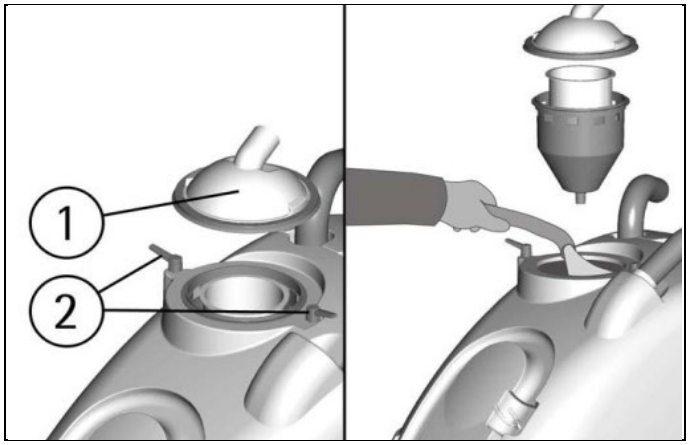
The machine is not provided with brakes so do not leave it on inclined surfaces.

DAILY MAINTENANCE

RECOVERY TANK CLEANING



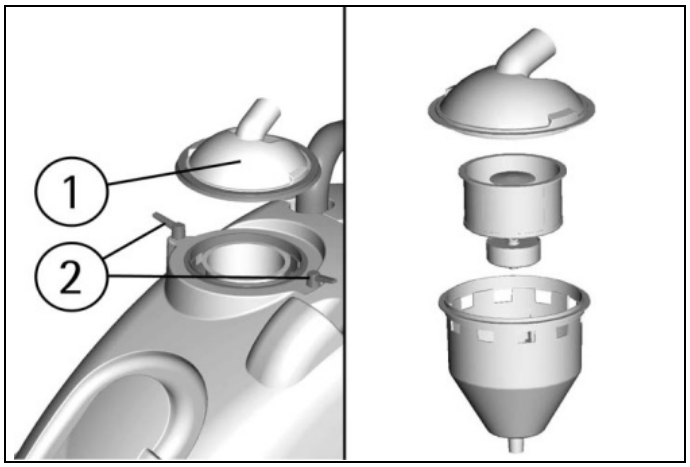
1. Hold the exhaust hose placed in the front part of the machine.
2. Take off the exhaust plug acting upon its lever and empty the recovery tank into appropriate containers (see under "OVERFLOW DEVICE").
3. Take off the suction cover (1) after rotating the blocking levers (2).
4. Take off the filter and filter protection.
5. Rinse the tank with a water jet.



SUCTION FILTER CLEANING



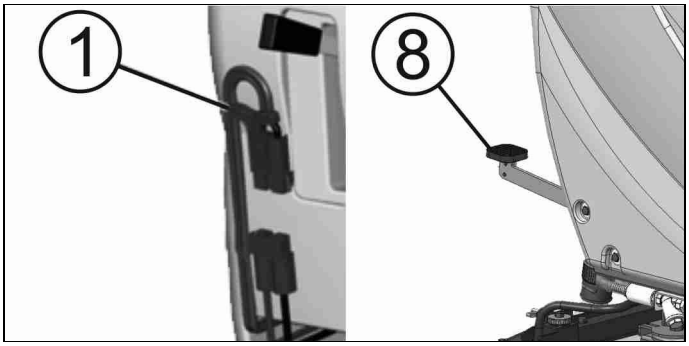
1. Take off suction cover (1) after rotating the blocking levers (2).
2. Take off the filter and filter protection.
3. Clean all parts with a water jet especially inside surfaces and filter bottom.
4. Carry out carefully the cleaning operations.
5. Reassemble all parts.



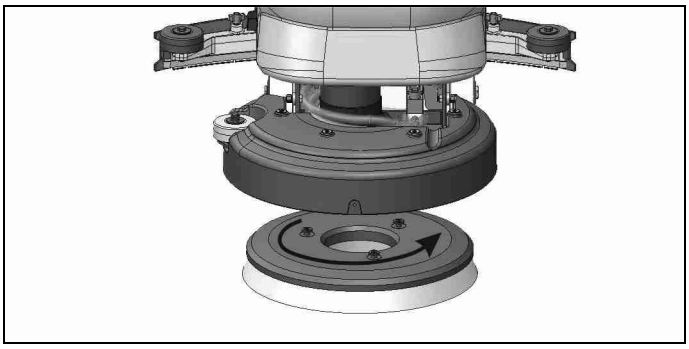
MANUAL DISASSEMBLY OF THE BRUSH/ES



1. Lift the brush base lowering the pedal (8).
2. Take off the electric supply to the brush motor unplugging the battery connector (1).

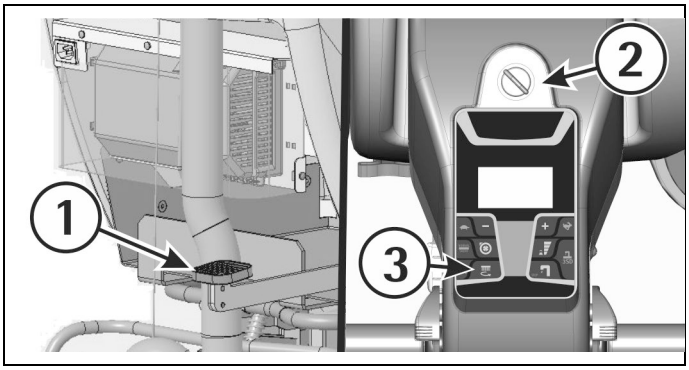


3. With the brush base in lifted position, turn the brush in its rotating sense, until it is released from the brush holder plate seat as indicated in the figure.
The following figure shows the rotating sense for brush release.



AUTOMATIC UNLOCKING THE BRUSH

1. Lift the brush base by pressing pedal (1).
2. Turn on the machine by turning the key (2) clockwise.
3. With the brush base lifted keep the button (3) pressed for a few seconds.





Before collecting the brush, to avoid hands injuries, move the machine.

BRUSH/ES CLEANING

Disassemble the brush and clean it with a water jet (for the disassembly see under “BRUSH/ES DISASSEMBLY”).

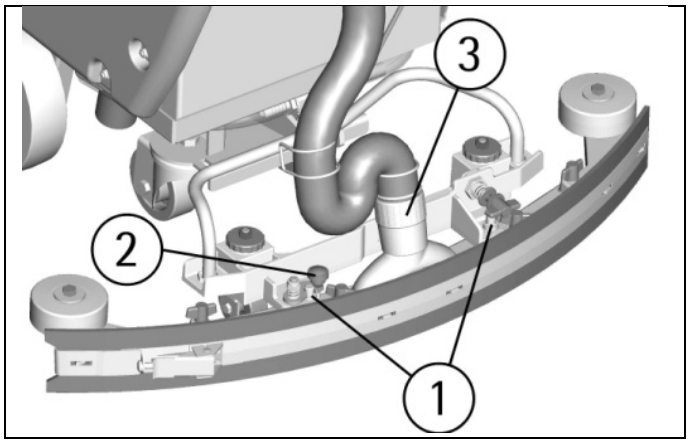
SQUEEGEE CLEANING



Keeping the squeegee clean guarantees always the best drying action.
For the cleaning it is necessary to:

1. Take off the squeegee hose (3) from its coupling.
2. Disassemble the squeegee from its support by rotating the lever (2) counterclockwise and making slide the stud bolts (1) in their slots up to their release.
3. Clean with care the internal part of the squeegee inlet eliminating eventual dirt residuals.
4. Clean with care the squeegee rubbers.

5. Reassemble all parts.



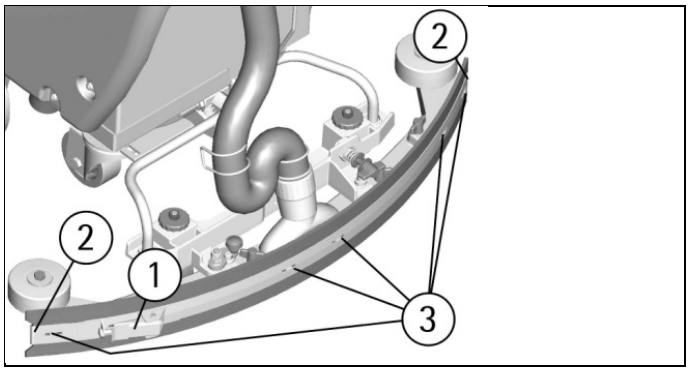
WEEKLY MAINTENANCE

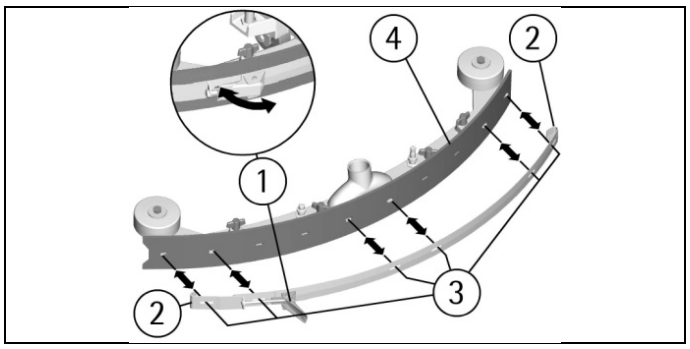
REAR SQUEEGEE RUBBER REPLACEMENT



Check the squeegee rubber wear and eventually turn or replace it.
For the replacement it is necessary to:
1. Lift the squeegee acting upon the lever.
2. Uncouple the hook (1) of the rubber holder blade, release the extremities (2) from the squeegee body and take off the rubber (4).
3. Turn the rubber (4) to a new side or replace it.

To reassemble the squeegee repeat reverse the operations above-mentioned, inserting the rubber (4) on the guides (3), couple the extremities (2) of the rubber holder blade onto the squeegee body and finally block the hook (1).

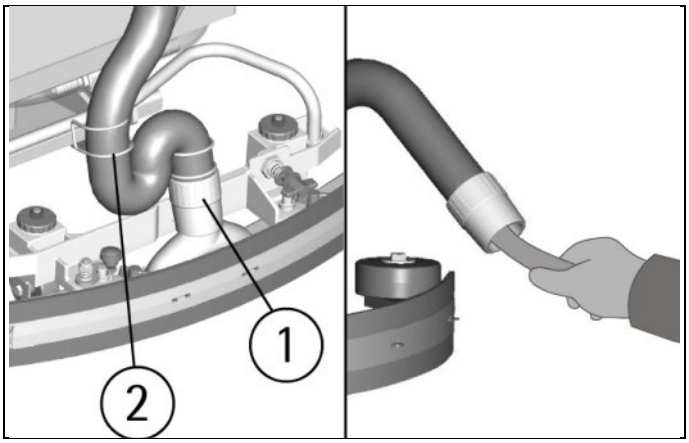




SQUEEGEE HOSE CLEANING



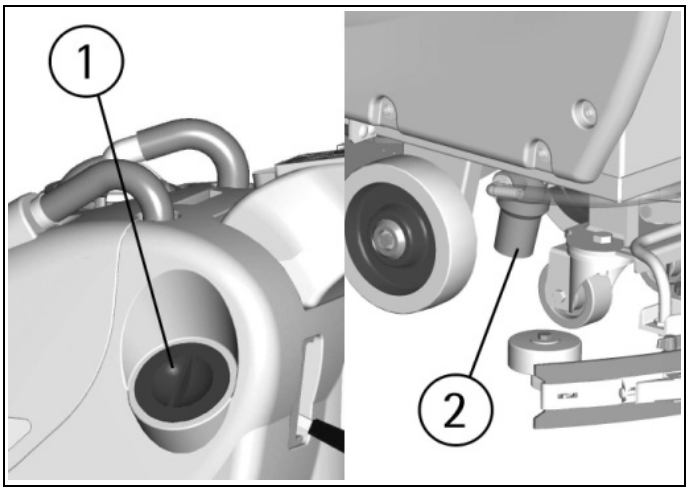
Weekly or in case of insufficient suction, it is necessary to check that the squeegee hose is not obstructed. Eventually, to clean it, proceed as follows:
1. Take off the hose from the squeegee coupling (1) and release the guide spring of the suction hose (2).
2. Wash the inside of the hose with a water jet, from the squeegee hose side.
3. To reassemble the hose repeat reverse the operations above-mentioned.



CLEANING OF WATER TANK AND FILTER



1. Bring the machine to an appropriate place for tanks draining.
2. Unscrew the solution tank cap (1).
3. Unscrew the exhaust plug (2) being careful not to lose or to damage the gasket.
4. Rinse with a water jet the tank.
5. Rinse the solution tank filter placed inside the exhaust plug, under the machine.

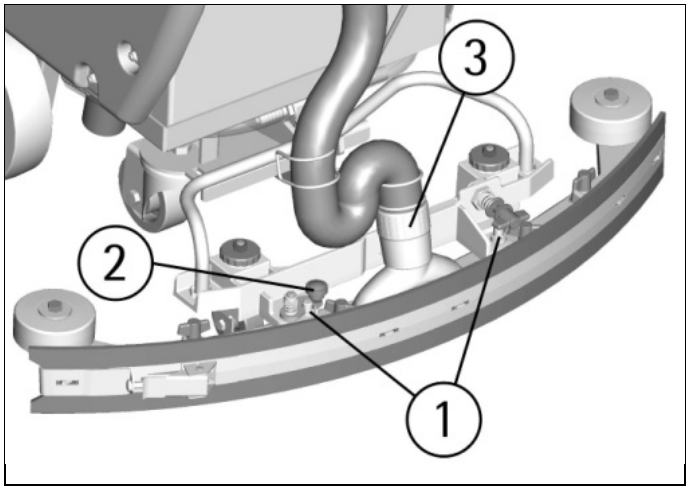


TWO-MONTHLY MAINTENANCE

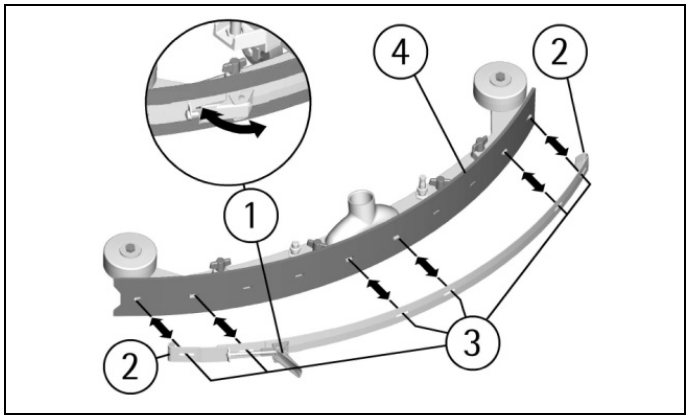
FRONT SQUEEGEE RUBBER REPLACEMENT



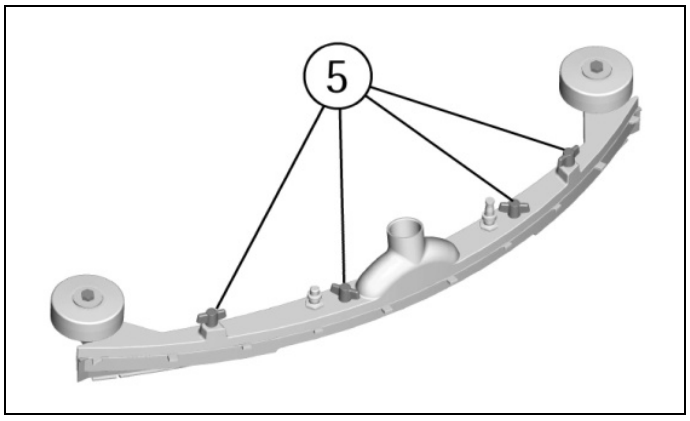
Check the wear of the squeegee rubber and eventually replace it.
For the replacement it is necessary to:
1. Take off the squeegee hose (3) from its coupling.
2. Disassemble the squeegee from the support rotating the lever (2) counterclockwise and sliding the stud bolts (1) in their slots.



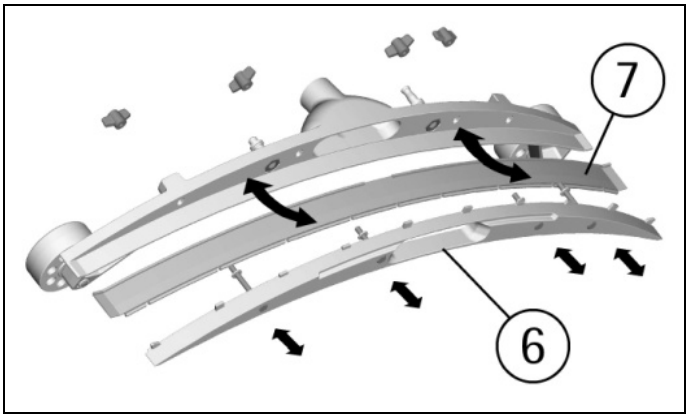
3. Uncouple the hook (1) of the rubber holder blade, release the extremities (2) from the squeegee body and take off the rubber (4).



4. Unscrew the wing nuts (5) in the upper part of the squeegee.



5. Slip off the lower part (6) of the squeegee body, so to take off the front rubber (7).



6. Replace the front rubber.
7. To reassemble the squeegee repeat reverse the operations above-mentioned.

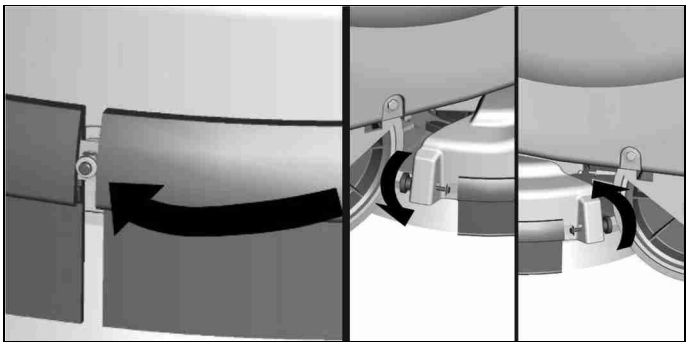
SIX-MONTHLY MAINTENANCE

SPLASH GUARD REPLACEMENT



1. Unscrew the knobs in the rear part of the brush base group from the extremity of the metal strips. The operation has to be carried out on both splash guards.
2. Unscrew the nut on the front part of the brush base group and take off the metal strips.
3. Replace the splash guard rubbers and follow the assembling instructions at “SPLASH GUARD ASSEMBLY” paragraph.

With the brush assembled, the splash guard must slightly touch the floor.



TROUBLESHOOTING GUIDE

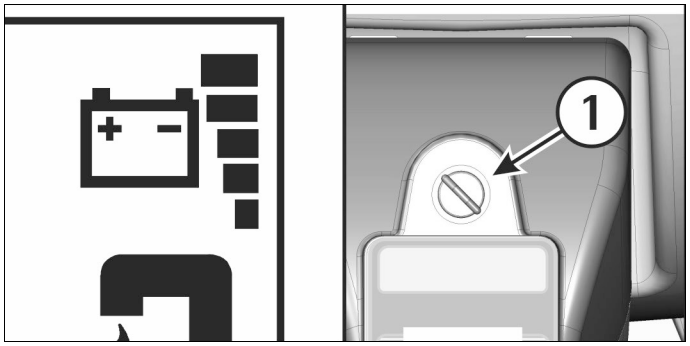


The checking of all the other foreseen machine operations is left to the authorized technical assistance**.**

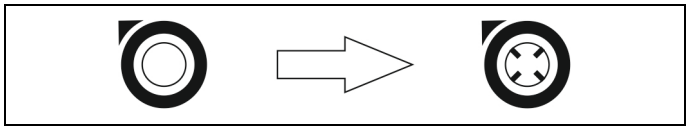
Never leave the batteries completely discharged for a long time.
In case of alarm visualizations contact the technical assistance.

THE SUCTION MOTOR DOES NOT WORK

1. Verify that the key switch (1) is in the correct position.
2. Check the charge level of the batteries on the display.



3. Check that the battery connector is correctly plugged in.
4. Check on the display that the starting signal of the suction motor is on.

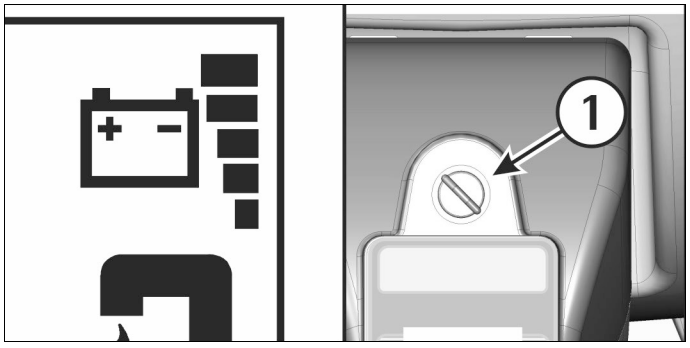


5. Check that the red connector of the suction motor is correctly plugged in.

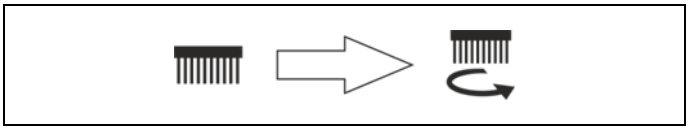
If the problem persists, please contact the authorized technical assistance.

THE BRUSH MOTOR DOES NOT WORK

1. Verify that the key switch (1) is in the correct position. Switch off and on again the machine.
2. Check the charge level of the batteries on the display.



3. Check on the display that the activation signal of the brush motor is on.



4. Check that the battery connector is correctly plugged in.
5. Act upon the levers drive control (3).

If the problem persists, please contact the authorized technical assistance.

THE MACHINE DOES NOT CLEAN PROPERLY

1. The brush does not have the suitable bristle dimension: use only original brushes. For advice, contact the authorized technical assistance.
2. The brush has got worn bristles. Check the brush wear condition and eventually replace it (the brush has to be replaced when the bristles have reached a height of about 15mm).
   To replace the brush, see instructions at paragraph “BRUSH DISASSEMBLY” and “BRUSH ASSEMBLY”.
3. The solution detergent is insufficient: open more the solution valve.
4. Check that the liquid detergent is in the recommended percentage.

Contact the authorized technical assistance for advice.

THE SQUEEGEE DOES NOT DRY PERFECTLY

1. Check that the squeegee rubbers are clean.
2. Check the height and inclination of the squeegee (see under “SQUEEGEE” in “BEFORE USE”).
3. Check that the suction hose is correctly inserted in the proper seat on the recovery tank.
4. Clean the suction filter.
5. Replace the rubbers if worn out.
6. Check that the suction motor switch is on.
7. Check that the recovery tank is empty.

EXCESSIVE FOAM PRODUCTION

Check that low foam detergent has been used. Eventually add small quantities of anti foam liquid into the recovery tank.
Please be aware that a bigger quantity of foam is produced when the floor is not very dirty. In this case please dilute detergent solution.

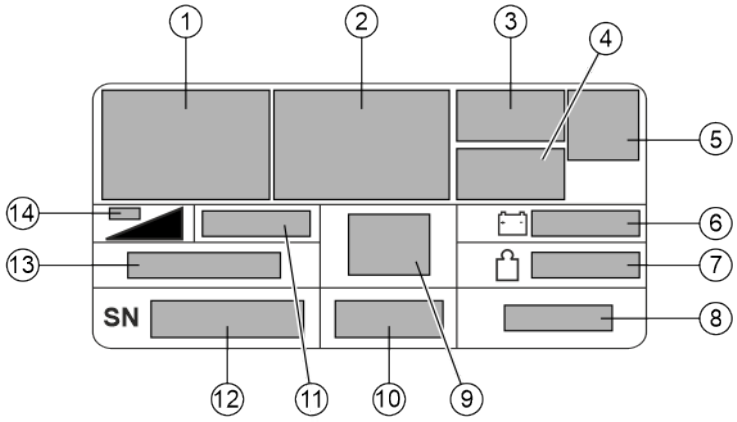
PROGRAMMED MAINTENANCE

PERIODIC ORDINARY MAINTENANCE CHART

INTERVENTION	DAILY	**PERIODIC**
RECOVERY TANK CLEANING	•	
SUCTION FILTER CLEANING	•	
FILTER CLEANING WATER		•
BRUSH CLEANING	•	
BRUSH DISASSEMBLY AND CLEANING	•	
SQUEEGEE CLEANING	•	
FRONT SQUEEGEE RUBBER CHECK		•
REAR SQUEEGEE RUBBER CHECK		•
SPLASH GUARD RUBBER CHECK		•
CHECK SQUEEGEE ADJUSTMENT		•
SQUEEGEE HOSE CLEANING		•
WATER TANK CLEANING		•
CHECK BATTERIES ELECTROLYTE		•

EN

LEGEND SERIAL NUMBER PLATE



1	Name of the producer
2	Manufacturer's registered office
3	Country of production
4	CE labelling
5	Waste disposal regulations
6	Maximum weight for suitable batteries
7	Gross weight of the machine (IEC/EN 60335-2-72 clausola 3.114)
8	Power in force
9	Electrical safety class of the machine
10	Safety degree of the machine against water and dust
11	Battery voltage and circuit type
12	Serial number of the machine
13	Model of the machine
14	Maximum gradient allowed

How to read the Serial Number (Pos. 12)

SN	2	0	x	x	z	z	z	z

20xx = they mark **the year of manufacture** of the machine (inserted in to the Serial Number as per regulation CEI EN 60335-2-72).
zzzz = they mark the progressive number of that machine produced in its year of construction.

How to read the model of the machine (Pos. 13)

xxxx	zz

xxxx = name of the machine range
zz = number identifying the model

POSITION OF THE SERIAL NUMBER PLATE ON THE MACHINE