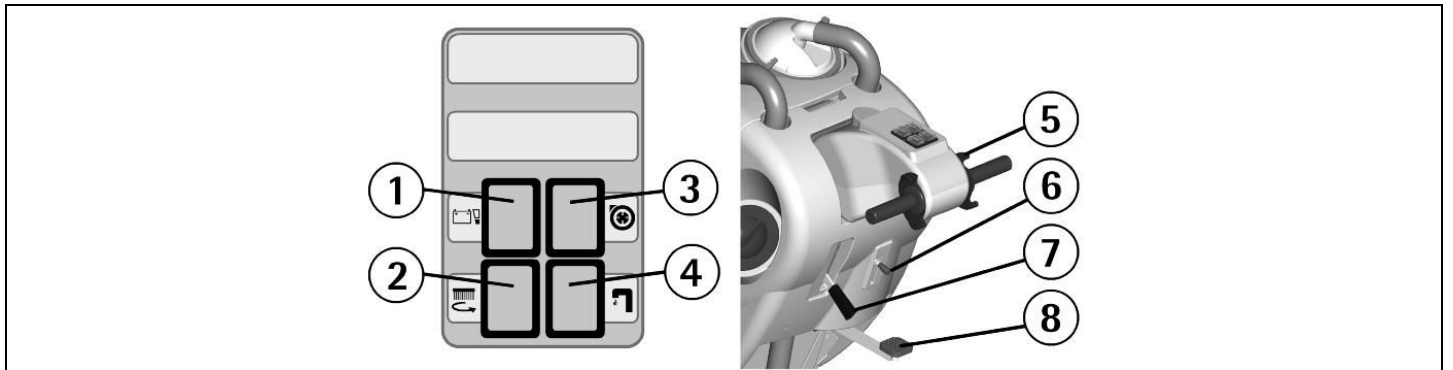


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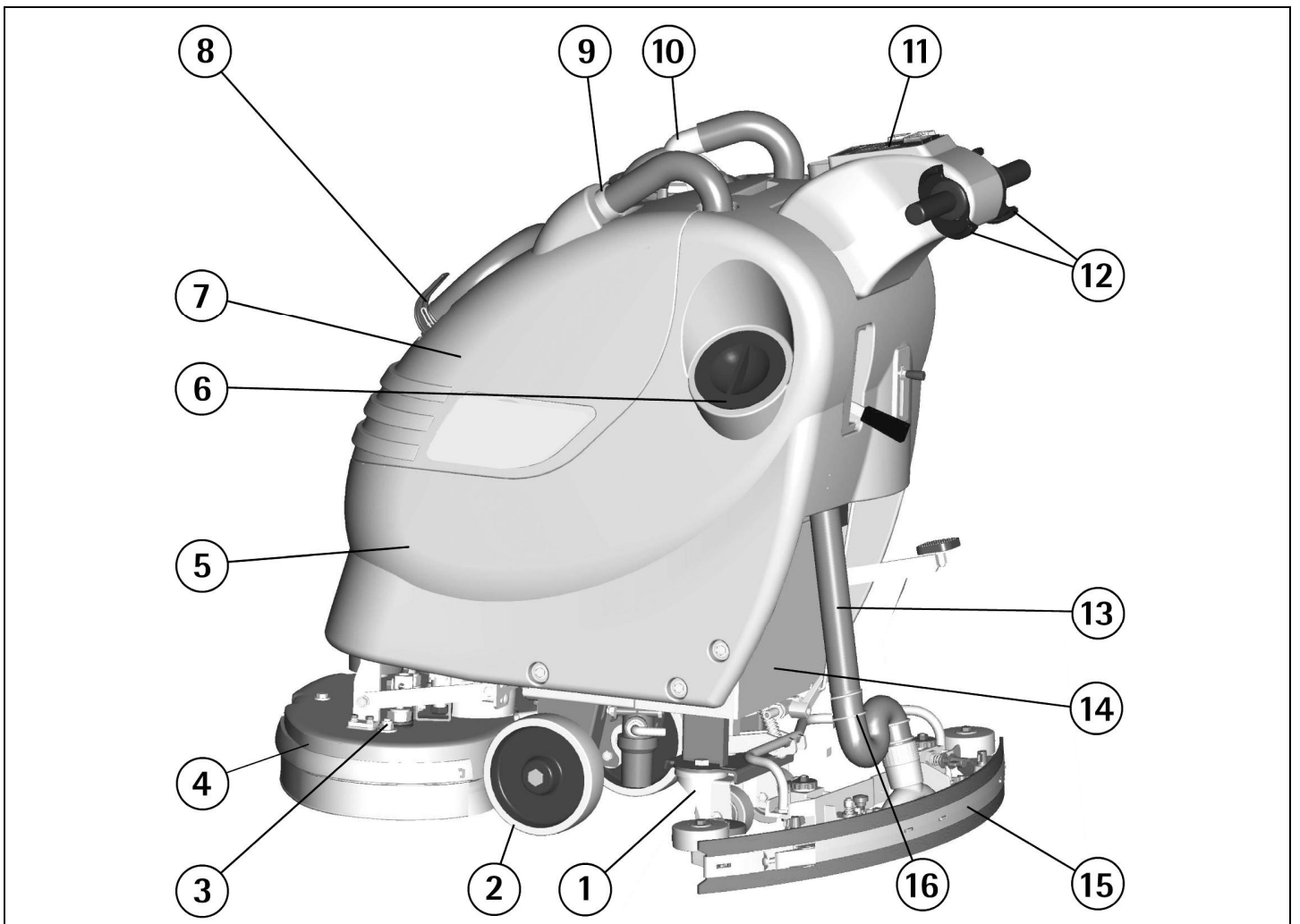
LEGEND INSTRUMENT BOARD AND CONTROLS

- | | |
|---------------------------------------|-------------------------------------|
| 1. SIGNAL LAMP CHARGE LEVEL BATTERIES | 5. LEVERS MOVEMENT |
| 2. SWITCH BRUSHES MOTOR | 6. LEVER SOLUTION VALVE |
| 3. SWITCH SUCTION MOTOR | 7. LEVER SQUEEGEE LIFTING |
| 4. SIGNAL LAMP SOLUTION VALVE OPEN | 8. PEDAL BRUSHES BASE GROUP LIFTING |



LEGEND MACHINE

- | | |
|---|--------------------------------|
| 1. CASTOR WHEELS | 9. INLET OPENING SQUEEGEE HOSE |
| 2. WHEELS | 10. SUCTION COVER |
| 3. ADJUSTMENT BRUSHES INCLINATION | 11. INSTRUMENT BOARD |
| 4. BRUSHES BASE GROUP | 12. LEVERS MOVEMENT |
| 5. SOLUTION TANK | 13. SQUEEGEE HOSE |
| 6. SCREW CAP FOR INLET DETERGENT SOLUTION | 14. BATTERIES |
| 7. RECOVERY TANK | 15. SQUEEGEE ASSEMBLY |
| 8. PLUG EXHAUST HOSE RECOVERY TANK | 16. GUIDE SPRING SQUEEGEE HOSE |



TECHNICAL DESCRIPTION	U/M	ruby 45 light	ruby 55 light
Cleaning width	mm	450	550
Squeegee width	mm	770	770
Working capacity, up to	sqm/h	1575	1925
Brushes diameter	mm	2x235	2x285
Brushes rpm	rpm	325	260
Pressure on the brushes	kg	22,5 max	24,5 max
Brushes motor	W	420	420
Type of drive		semi-aut.	semi-aut.
Maximum gradient		2%	2%
Suction motor	W	450	450
Suction vacuum	mbar	120	120
Solution tank	l	33	33
Recovery tank	l	45	45
Machine length	mm	1102	1140
Machine height	mm	1053	1053
Machine width (without squeegee)	mm	527	586
Capacity of the batteries	V/Ah _{5h}	24/110	24/110
Weight of the batteries	kg	74	74
Compartment of the batteries	mm	342x345x300	342x345x300
Weight of the machine (empty and without batteries)	kg	67	71
Acoustic pressure level (in conformity with IEC 704/1)	dB(A)	< 70	< 70
Class		III	III
Protection level	IP	23	23
Tension	V	24	24

INTRODUCTORY COMMENT

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 brushes 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 servicing as may prove necessary.

GENERAL RULES OF SECURITY

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

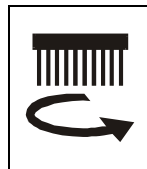
- Read the labels carefully on the machine. Do not cover them for any reason and replace them immediately if damaged.
- The machine must be used exclusively by authorized staff that has been instructed for its use.
- During the working of the machine, pay attention to other people and especially to the children.
- Do not mix different detergents, avoiding harmful odours.
- Do not place any liquid containers onto the machine.
- Storage temperature: between -25°C and +55°C.
- Perfect operating temperature: between 0°C and 40°C.
- The humidity should be between 30 and 95%.
- Do not use the machine in explosive atmosphere.
- Do not use the machine as a means of transport.
- Do not use acid solutions in such concentrations that could damage the machine and/or the persons.
- Avoid working with the brushes when the machine stands still, in order to prevent floor damages.
- 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 fire-extinguisher. Do not use water.
- Do not strike shelvings or scaffoldings, where there is danger of falling objects.
- Adapt the working speed to the adhesion conditions.
- Do not use the machine on areas having a higher gradient than the one stated on the number plate.
- 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.
- Signal the areas of moist floors with suitable signs.
- If the machine does not work properly, check by conducting simple maintenance procedures. Otherwise, ask for technical advice to an authorized assistance centre.
- Where parts are required, ask for ORIGINAL spare parts to the distributor and/or to an authorized dealer.
- Use only ORIGINAL brushes indicated in the paragraph "RECOMMENDED BRUSHES".
- For any cleaning and/or maintenance operation take off the power supply from the machine.
- Do not take off the protections which require the use of tools to be removed.
- 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 through an authorized service department.
- In order to avoid scales on the solution tank filter, do not fill the detergent solution many hours before the machines' use.
- Before using the machine, check that all panels and coverings are in their position as indicated in this use and maintenance catalogue.

- Be sure the recovery tank is empty before removing it.
- Restore all electrical connections after any maintenance operation.
- 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.

SYMBOLOLOGY



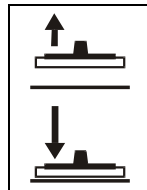
Symbol denoting the solution valve.
Indicates the solution valve lever.
Indicates the signal lamp of the open solution valve.



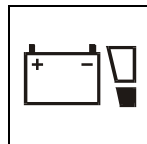
Symbol denoting the brush.
Indicates the switch of the brushes motor.



Symbol denoting the suction motor.
Indicates the switch of the suction motor.



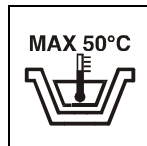
Symbol denoting up - down of the squeegee.
Indicates the squeegee lever.



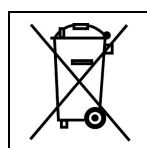
Symbol denoting the charge level of the batteries.



Indicates the exhaust hose of the recovery tank.



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.



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



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

BEFORE USE

HANDLING OF THE PACKED MACHINE

The machine is supplied with suitable packing foreseen for fork lift truck handling. The total weight is 95 kg.

Packing dimensions:

Base: 118 cm x 67 cm

Height: 119 cm

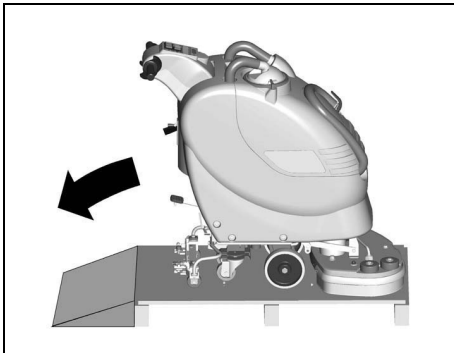
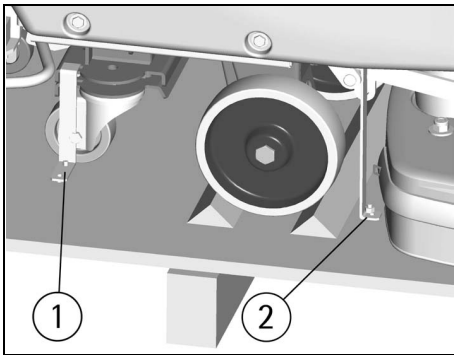


ATTENTION:

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 (1+2) 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.

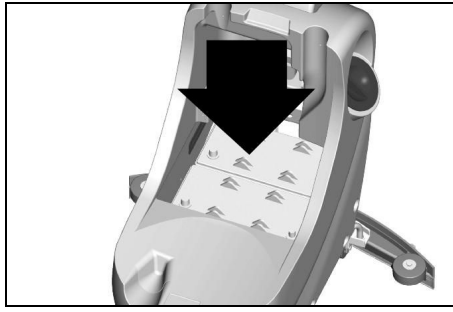


BATTERY INSTALLATION AND SETTING OF THE BATTERY TYPE

This machine is equipped with two batteries at 12V in serial connection, placed in its appropriate compartment under the recovery tank and must be handled using suitable lifting equipment (due to weight and coupling system).

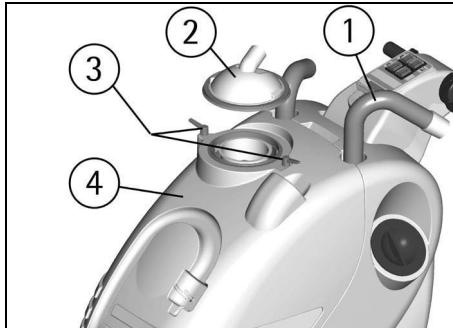
The batteries must be in accordance with CEI 21-5 Norms.

The connection of the batteries' cables has to be carried out by specialized staff, because the inversion of polarity causes the damage of the electrical components. Before the machine is supplied with power, check that the red cable is connected to the + pole of the battery.



For batteries installation proceed as follows:

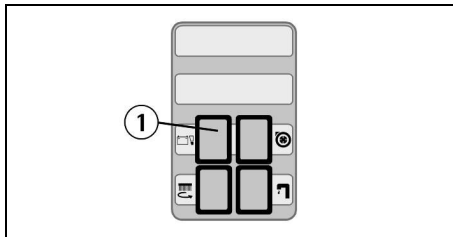
1. Take off the squeegee hose (1).
2. Take off the suction cover (2) after turning the blocking levers (3).
3. Take off the recovery tank (4).
4. Place the batteries in its compartment.
5. **Connect the terminals, respecting the polarities, avoiding contact with other parts that could create short circuit.**
6. Reassemble all parts.



ATTENTION:

The machine and the signal lamp of the battery charge level foresee the use of traditional lead batteries.

In case of GEL batteries installation, it is necessary to carry out a specific adjustment. Please contact the authorized technical assistance.



ATTENTION:

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

BATTERY RECHARGER

Be sure that the battery recharger is suitable for the installed batteries both for their capacities and type (lead/acid or GEL and equivalent).

In the plastic bag containing the use and maintenance you will find the coupling connector for the recharger. It must be assembled onto the cables of your recharger, following the instructions given by the manufacturer.



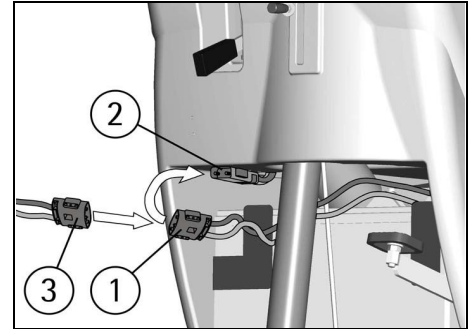
ATTENTION:

This operation must be carried out by qualified staff. A wrong or faulty cable connection can create serious damages to persons or things.

BATTERIES RECHARGING

Bring the machine on a levelled surface.

Plug in batteries connector (1) placed in the rear part of the machine, to connector (3) of the battery recharger.



ATTENTION:

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.

NOTE: 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.



ATTENTION:

For the daily recharge of the batteries it is necessary to follow strictly all the indications given by the manufacturer/distributor. All the installation and maintenance operations must be carried out by qualified staff. **Danger of gas exhalations and emission of corrosive liquids. Fire danger: do not approach with free flames.**

BATTERIES DISPOSAL

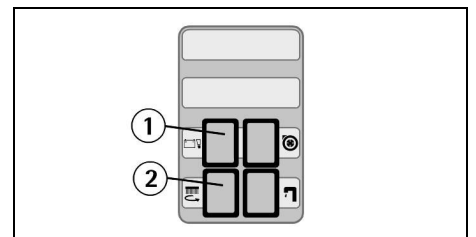
It is compulsory to hand over exhaust batteries, classified as dangerous waste, to an authorized institution according to the current laws.

BATTERIES CHARGE LEVEL INDICATOR

Activating the push button of the brushes (2) the signal lamp of the battery charge level (1) will come on.

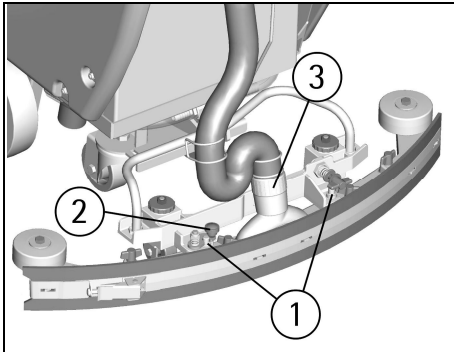
When the signal lamp is in **green colour** it means that the battery charge level is sufficient for the functioning of the machine.

If the signal lamp is in **red colour** it means that the battery charge level is insufficient for the functioning of the machine and it is necessary to recharge the batteries (see under "BATTERIES RECHARGING").



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.

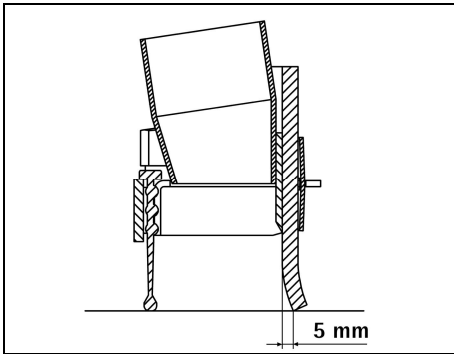
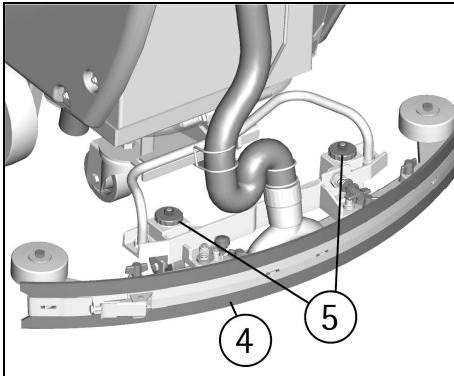
**ADJUSTMENT OF THE SQUEEGEE HEIGHT**

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 uniform way in all its length.

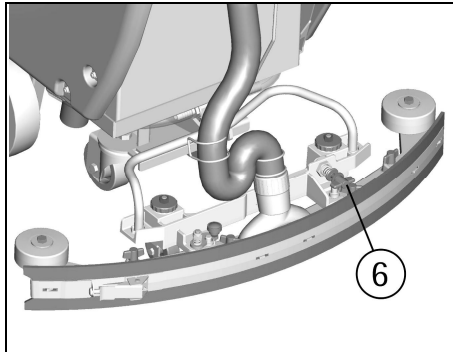
Acting clockwise upon the two registers (5) it is possible to increase the bending of the rubber. Acting counterclockwise it is possible to decrease the rubber bending.

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**

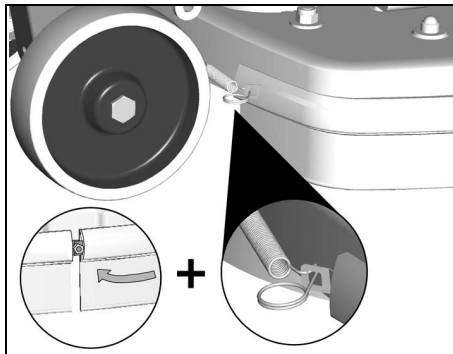
In case of need, to increase the rubber bending in the central part, it is necessary to tilt the squeegee rotating counterclockwise the register (6). To increase the rubber bending on the squeegee extremities, rotate the register clockwise.

**SPLASH GUARD ASSEMBLY**

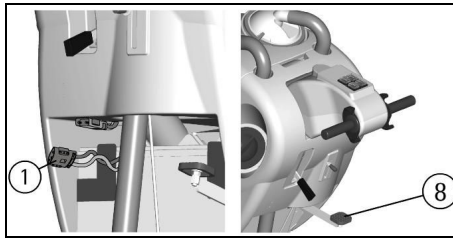
The two splash guards have to be assembled onto the brushes base group. Insert the metal strips inside the suitable slots present on the rubber. Place the round hole at the flat extremity of the strip onto the screw placed in the front part of the brushes base group. Secure the strips through the nut blocking it.

Hook the spring 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.

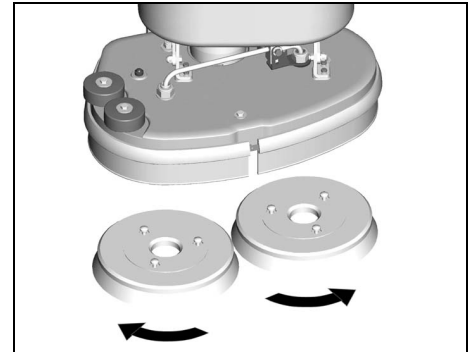
**BRUSHES ASSEMBLY**

1. Take off the electric supply to the brushes motor unplugging the batteries connector (1).
2. Acting upon the pedal (8) lift the brushes base group.

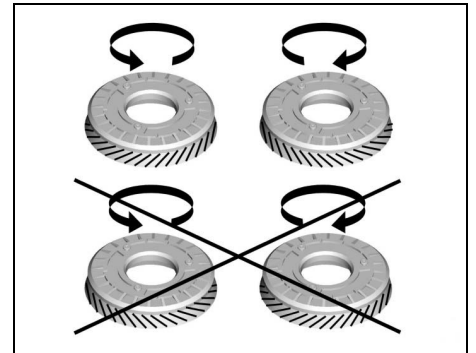


3. With the brush base group in lifted position, insert the brush into its plate seat underneath the brush base turning it until the three metal buttons are properly seated in their slots; rotate energetically the brush to push the button towards the coupling spring until it gets blocked.

The figure shows the rotating sense for the brushes coupling.



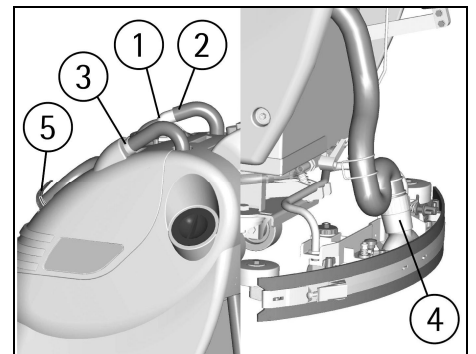
For a longer life of the brushes we suggest to invert daily their position. Whenever brushes were deformed we suggest to reassemble them in the same position, avoiding that the different inclination of the bristles causes excessive motor overload or troublesome vibrations.

**! ATTENTION:**

Use only brushes supplied with the machine or the ones indicated in the paragraph "RECOMMENDED BRUSHES". The use of other brushes can compromise the security.

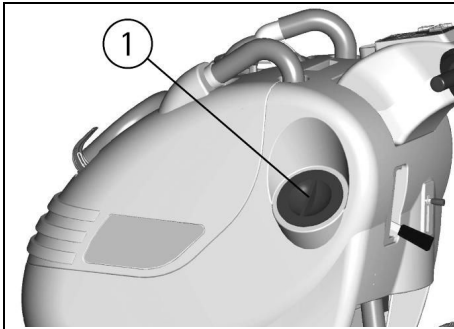
RECOVERY TANK

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.

**DETERGENT SOLUTION TANK**

The capacity of the detergent solution tank is indicated in the technical data.

Open the screw plug (1) placed in the rear left part of the machine and fill the detergent solution tank with clean water at a maximum temperature of 50°C. Add the liquid detergent in the percentage and conditions foreseen by the manufacturer. To avoid excessive foam presence, which could cause problems to the suction motor, use the minimum percentage of detergent. Screw down the plug to close the tank.



⚠ ATTENTION:

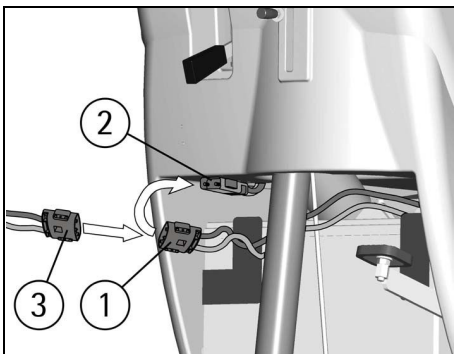
Use always low foam detergent. To avoid foam presence, before starting working operation, introduce into the recovery tank a minimum quantity of anti-foam product.

Never use pure acid.

FLOOR CLEANING

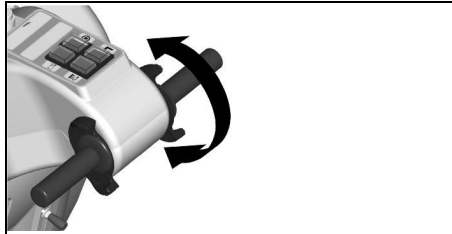
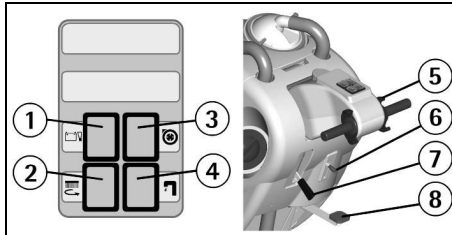
CONNECTION OF THE BATTERIES TO THE MACHINE

Plug in the batteries connector (1) to the machine connector (2), placed in the rear part of the machine.



STARTING OF THE MACHINE

1. Press the brushes motor switch (2).
2. The signal lamp of the battery charge level (1) will come on. Check that it is in **green colour**. If the red colour appears, it is necessary to proceed for the batteries' recharge (see under "BATTERIES RECHARGING").
3. Press the suction motor switch (3).
4. Acting upon the solution valve lever (6) adjust the solution detergent quantity bringing the floor uniformly wet, avoiding the leakage of detergent from the splash guard. Always consider that the correct quantity of solution detergent depends on the type of floor, dirtiness and machine speed. Acting upon this lever, the indicator on the instrument board of the open solution valve (4) will turn on.
5. Acting upon the brushes base lifting pedal (8) lower the brushes base.
6. Acting upon the squeegee lifting lever (7) lower the squeegee.
7. Activating the levers (5) the brushes will start rotating transferring to the machine a forward movement. The squeegee will start drying the floor.
8. During the first meters check that the detergent solution flow is appropriate and that the squeegee adjustment guarantees a perfect drying action.

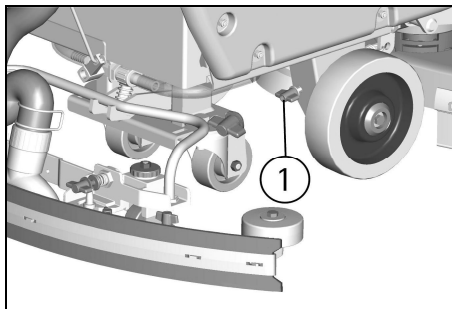


ADJUSTMENT OF THE BRUSHES PRESSURE

Through the register (1) placed on the internal part of the front right wheel, it is possible to adjust the brushes pressure on the cleaned surface.

By turning the wing nut clockwise the pressure increases, rotating the wing nut counterclockwise, the pressure decreases.

This device allows a more efficient cleaning action also on very difficult and dirty surfaces.



OVERFLOW DEVICE

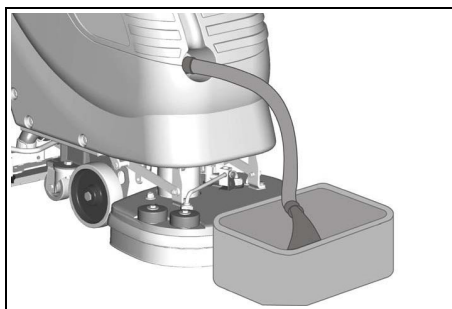
In order to avoid serious damages to the suction motor, the machine is equipped with a float that intervenes when the recovery tank is full, closing the suction hose and stopping the suction.

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.

⚠ ATTENTION:

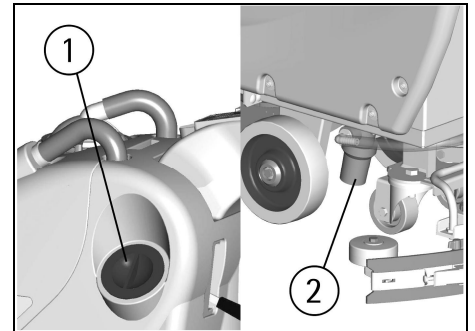
This operation must be carried out using gloves to protect from contact with dangerous solutions.



EMPTYING DETERGENT SOLUTION

To empty the detergent solution remained in the solution tank:

1. Bring the machine to an appropriate place for tanks draining.
2. Unscrew the solution tank cap (1).
3. Unscrew the exhaust plug (2).



⚠ ATTENTION:

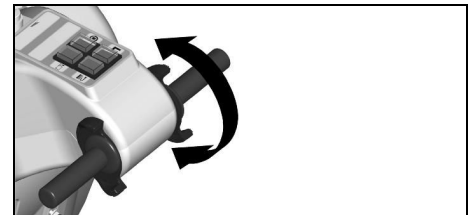
This operation must be carried out using gloves to protect from contact with dangerous solutions.

FORWARD MOVEMENT

The traction of these machines is given by the brushes that, working on an inclined axle, transmit to the machine the forward movement.

STOP

Releasing the lever of the movement, brushes rotation will end, stopping the machine movement.



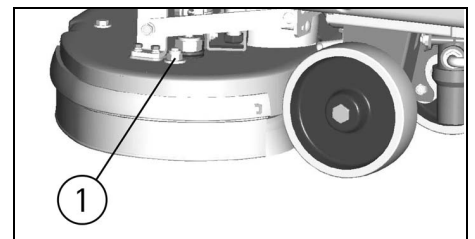
⚠ ATTENTION:

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

ADJUSTMENT OF BRUSHES INCLINATION

Through the register (1) placed on the brushes base group, it is possible to adjust the brushes inclination increasing/decreasing the speed of the machine.

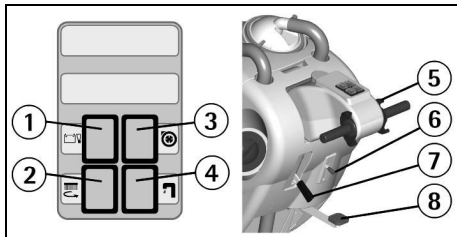
A label placed on the brushes base indicates the adjustment levels LOW/FAST.



STOP OF THE MACHINE AFTER CLEANING OPERATION

Before executing any type of maintenance:

1. Close the solution valve lever (6) and check that the indicator of open solution valve (4) on the instrument board turns off.
2. Lift the brushes base acting upon the pedal (8).
3. Lift the squeegee acting upon the lever (7).
4. Turn the brushes motor switch off (2).
5. Turn the suction motor switch off (3).
6. Bring the machine to an appropriate place for tanks draining.



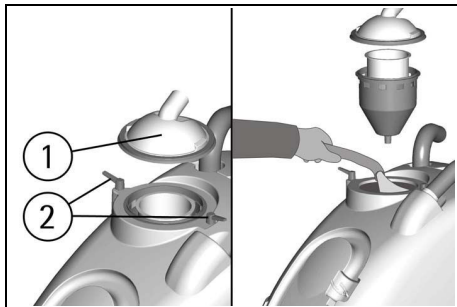
⚠ ATTENTION:

The machine is not equipped with a parking brake, therefore do not leave it on slopes.

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.

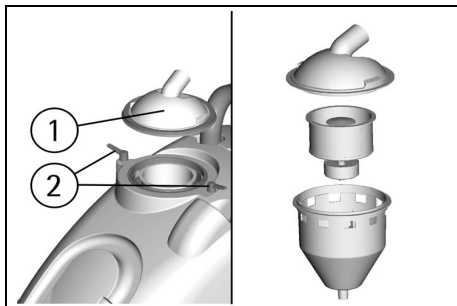


⚠ ATTENTION:

This operation must be carried out using gloves to protect from contact with dangerous solutions.

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.

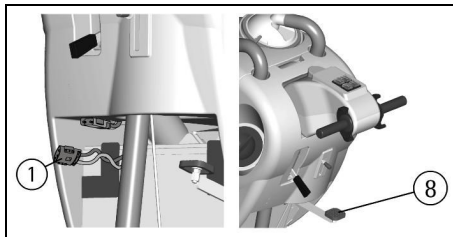


BRUSHES CLEANING

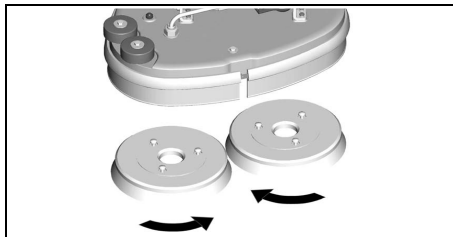
Disassemble the brushes and clean them with a water jet (for the disassembly see as follows under "BRUSHES DISASSEMBLY").

BRUSHES DISASSEMBLY

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



3. With the brushes 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 brushes release.



⚠ ATTENTION:

The execution of brushes disassembly operations with electric supply on, may cause damages to hands.

⚠ ATTENTION:

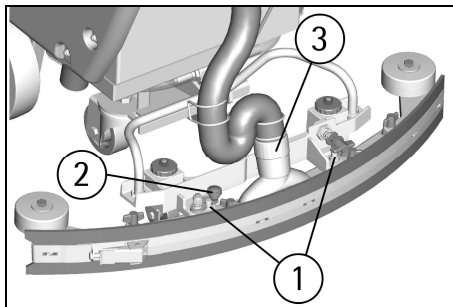
The handling of the brushes operation must be carried out using suitable gloves to protect both mechanically from contact with the bristles and the chemical risk of contact with dangerous solutions.

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

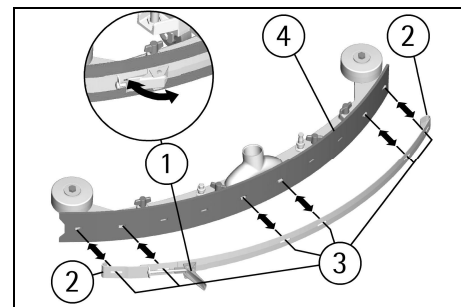
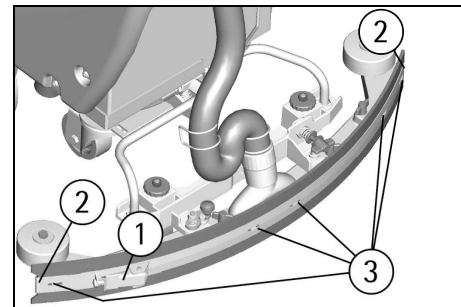
REAR SQUEEGEE RUBBER REPLACEMENT

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 (fig. 1, pos. 7).
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.

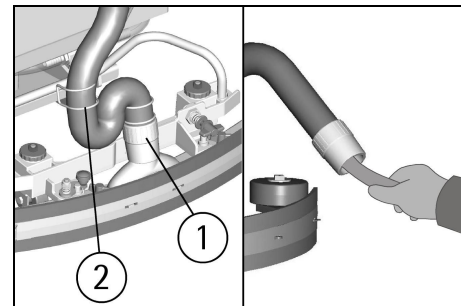
To reassemble the squeegee repeat reverse the operations above-mentioned, inserting the rubber (4) on the guides (3), couple the extremities (2) of the rubber holder blade onto the squeegee body and finally block the hook (1).



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.

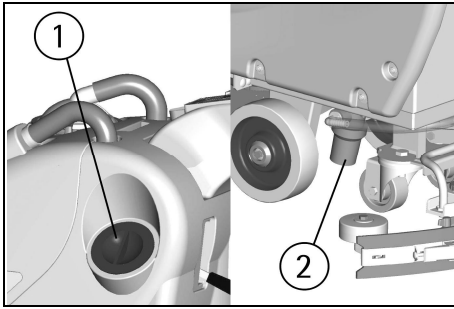


CLEANING OF SOLUTION TANK AND FILTER

1. Bring the machine to an appropriate place for tanks draining.
2. Unscrew the solution tank cap (1).
3. Unscrew the exhaust plug (2).
4. Rinse with a water jet the solution tank.
5. Rinse the solution tank filter placed inside the exhaust plug, under the machine.

⚠ ATTENTION:

This operation must be carried out using gloves to protect from contact with dangerous solutions.



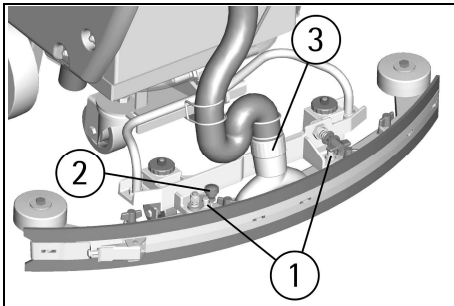
TWO-MONTHLY MAINTENANCE

FRONT SQUEEGEE RUBBER REPLACEMENT

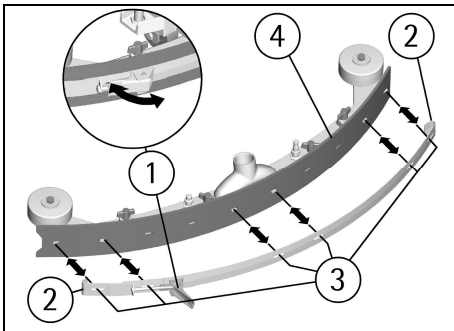
Check the wear of the squeegee rubber and eventually replace it.

For the replacement it is necessary to:

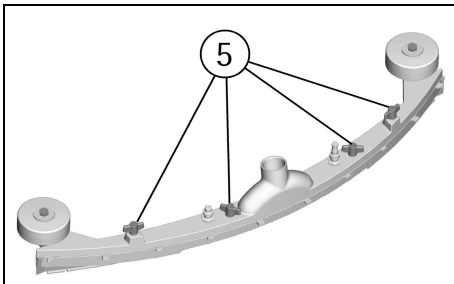
1. Take off the squeegee hose (3) from its coupling.
2. Disassemble the squeegee from the support rotating the lever (2) counterclockwise and sliding the stud bolts (1) in their slots.



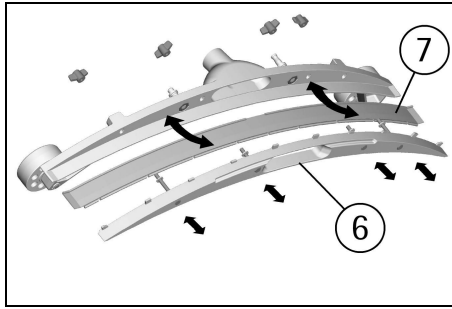
3. Uncouple the hook (1) of the rubber holder blade, release the extremities (2) from the squeegee body and take off the rubber (4).



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).

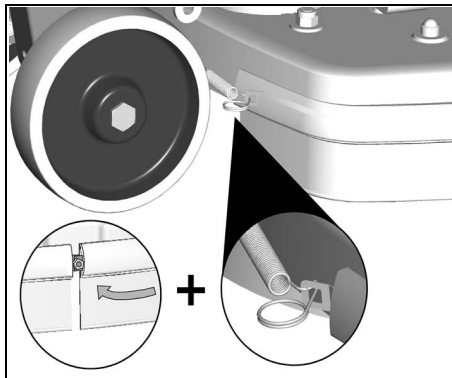


6. Replace the front rubber.
7. To reassemble the squeegee repeat reverse the operations above-mentioned.

SIX-MONTHLY MAINTENANCE

SPLASH GUARD REPLACEMENT

1. Release the spring in the rear part of the brushes base group from the slot placed at the extremity of the metal strip.
2. Unscrew the nut on the front part of the brushes base group and take off the metal strips.
3. Replace the splash guard rubbers and follow assembling instructions at "SPLASH GUARD ASSEMBLY" paragraph. With brushes assembled, the splash guard must slightly touch the floor.

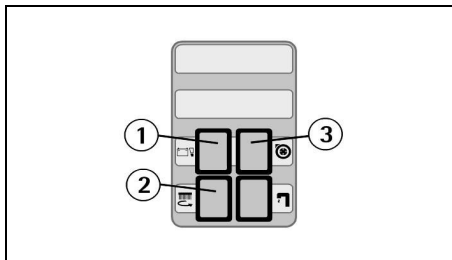


The checking of all the other foreseen machine operations is left to the authorized technical assistance.

TROUBLESHOOTING GUIDE

THE SUCTION MOTOR DOES NOT WORK

1. Verify that the switch (3) is on.
2. Check the charge level of the batteries: pressing the switch of the brushes motor (2) the signal lamp of the battery charge level (1) comes on. Check that it is in **green** colour. If the red colour appears, it is necessary to proceed for the batteries' recharge (see under "BATTERIES RECHARGING").
3. Check that the battery connector (1) is correctly plugged in. If the problem persists, please contact the authorized technical assistance.



THE BRUSHES MOTOR DOES NOT WORK

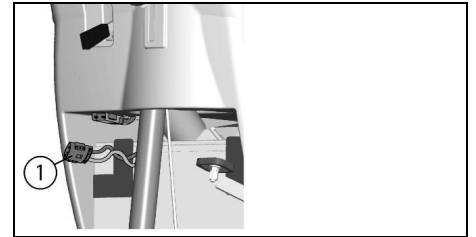
1. Verify that the switch (2) is on.
2. Activate the levers movement.
3. Check the charge level of the batteries: pressing the switch of the brushes motor (2) the signal lamp of the battery charge level (1) comes on. Check that it is in **green** colour. If the red colour appears, it is necessary to proceed for the batteries' recharge (see under "BATTERIES RECHARGING").



4. Check that the battery connector (1) is correctly plugged in. If the problem persists, please contact the authorized technical assistance.

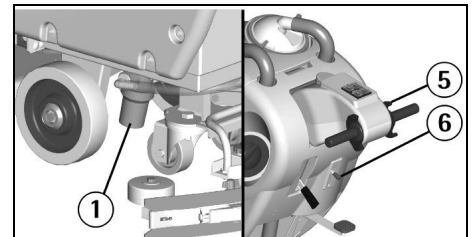
! ATTENTION:

Never leave the batteries discharged for a long time.



INSUFFICIENT WATER ON THE BRUSHES

1. Check that the solution valve lever (6) is open.
2. Check the level of the liquid in the solution tank.
3. Check that solution filter (1) is clean. If the problem persists, please contact the authorized technical assistance.



THE MACHINE DOES NOT CLEAN PROPERLY

1. The brushes do not have the suitable bristle dimension: use only original brushes. For advice, contact the authorized technical assistance.
2. The brushes have got worn bristles. Check the brushes wear condition and eventually replace them (the brushes have to be replaced when the bristles have reached a height of about 15mm). To replace the brushes, see instructions at paragraph "BRUSHES DISASSEMBLY" and "BRUSHES 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

INTERVENTION	DAILY	WEEKLY	TWO-MONTHLY	SIX-MONTHLY
RECOVERY TANK CLEANING	•			
SUCTION FILTER CLEANING	•			
SOLUTION TANK FILTER CLEANING		•		
BRUSHES CLEANING	•			
BRUSHES DISASSEMBLY	•			
SQUEEGEE CLEANING	•			
FRONT SQUEEGEE RUBBER REPLACEMENT			•	
REAR SQUEEGEE RUBBER REPLACEMENT		•		
SPLASH GUARD RUBBER REPLACEMENT				•
SQUEEGEE ADJUSTMENT CHECK		•		
SQUEEGEE HOSE CLEANING		•		
SOLUTION TANK CLEANING		•		
BATTERIES ELECTROLYTE CHECK		•		
BRUSHES MOTOR CHECK				•
SUCTION MOTOR CHECK			•	
BRUSHES BASE GROUP CHECK			•	
SCREW TIGHTENING				•

RECOMMENDED BRUSHES

Brushes must be chosen depending on type of floor and dirt to be removed.

The employed material and the bristles diameter are the elements that distinguish different types of brushes.

MATERIAL	CHARACTERISTICS
PPL (Polypropylene)	Good wear resistance. Maintains characteristics with hot water up to 50°C. It is not hygroscopic.
NYLON	Excellent wear resistance, even with hot water. It is hygroscopic.
TYNEX	Nylon bristles with grains of abrasive material. Use with caution in order not to mark the floor or ruin the polishing.
BRISTLES THICKNESS	Thicker bristles are more rigid and must be used on smooth floor or floor with small joints. On irregular floors with deep joints or relieves, it is recommended to use softer bristles which penetrate more easily and deeper. Please be aware that when brushes bristles are worn out and therefore too small, they become rigid and unable to penetrate and clean deeper. This may also happen with thicker bristles creating brush vibration.
PAD HOLDER	Pad holder is recommended to clean smooth surfaces. It has anchor points which permit the blocking of the abrasive pad during work.

MACHINE	CODE	QUANTITY	DESCRIPTION	USE
ruby 45	48901010	2	Brush PPL 0,3 Ø 235	Irregular floors with large joints.
	48901040	2	Brush NYLON 0,5 Ø 235	Smooth floors with small joints and persistent dirt.
	48901050	2	Brush PPL 0,6 Ø 235	Smooth floors with small joints and persistent dirt.
	48901060	2	Brush TYNEX Ø 235	Floors of resistant material and particularly dirty.
	48901070	2	Brush 5 mix Ø 235	For all types of floors.
	48801010	2	Pad holder Ø 230	For pads of 9", for smooth surfaces cleaning.
ruby 55	48901110	2	Brush PPL 0,3 Ø 285	Irregular floors with large joints.
	48901140	2	Brush NYLON 0,5 Ø 285	Smooth floors with small joints and persistent dirt.
	48901150	2	Brush PPL 0,6 Ø 285	Smooth floors with small joints and persistent dirt.
	48901160	2	Brush TYNEX Ø 285	Floors of resistant material and particularly dirty.
	48901170	2	Brush PPL 0,9 Ø 285	Smooth floors with small joints and persistent dirt.
	48901180	2	Brush 5-mix Ø 285	For all types of floors.
	48801020	2	Pad holder Ø 280	For pads of 11", for smooth surfaces cleaning.