

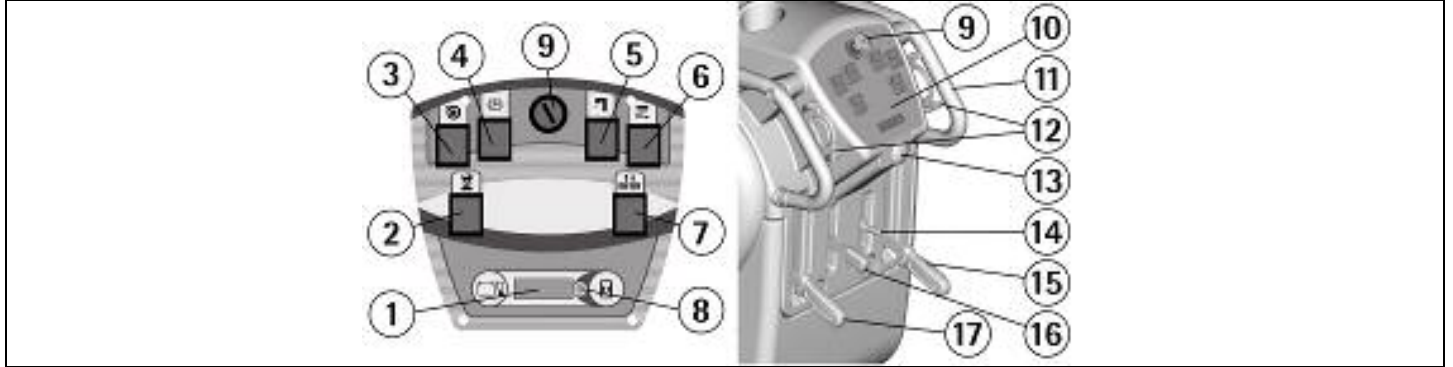
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LEGEND INSTRUMENT BOARD AND CONTROLS

- 1. DISPLAY
- 2. SWITCH SPEED SELECTION
- 3. SWITCH SUCTION MOTOR
- 4. SIGNAL LAMP BRAKE ON
- 5. SIGNAL LAMP SOLENOID VALVE
- 6. SWITCH BRUSHES MOTOR
- 7. PUSH BUTTON UP/DOWN BRUSHES BASE (only version with actuator)
- 8. PUSH BUTTON VISUALIZATION HOUR METER

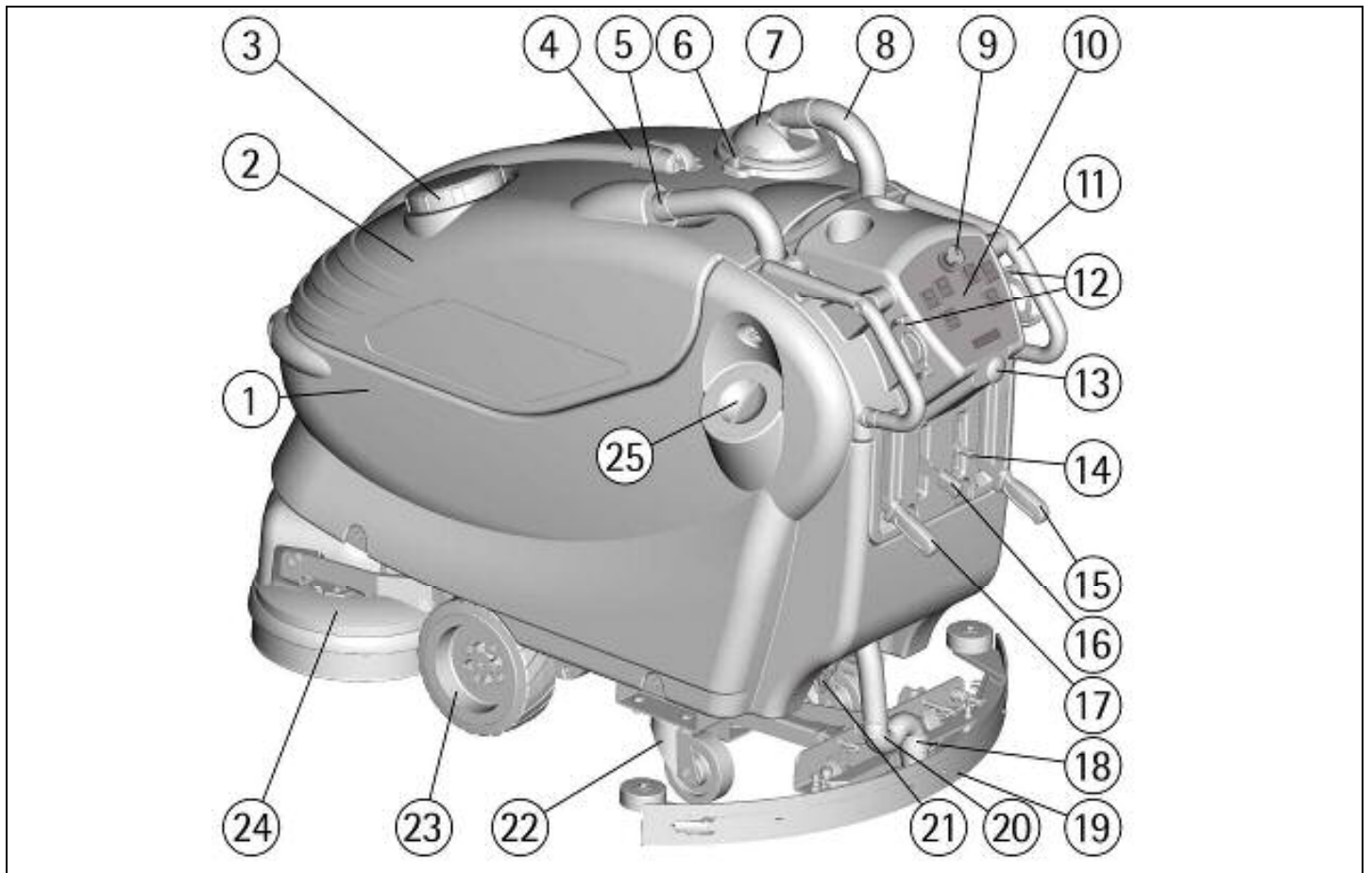
- 9. SWITCH WITH KEY
- 10. INSTRUMENT BOARD
- 11. HANDLE BARS
- 12. LEVERS DRIVE CONTROL
- 13. PUSH BUTTON SECURITY DEVICE REVERSE MOTION
- 14. LEVER SOLUTION VALVE
- 15. LEVER BRUSHES BASE GROUP LIFTING (only version with hydraulic pump)
- 16. LEVER PARKING / EMERGENCY BRAKE
- 17. LEVER SQUEEGEE LIFTING



LEGEND MACHINE

- 1. SOLUTION TANK
- 2. RECOVERY TANK
- 3. INSPECTION CAP RECOVERY TANK
- 4. PLUG EXHAUST HOSE RECOVERY TANK
- 5. COUPLING SQUEEGEE HOSE / RECOVERY TANK
- 6. BLOCKING LEVERS SUCTION COVER
- 7. SUCTION COVER
- 8. SUCTION HOSE
- 9. KEY SWITCH
- 10. INSTRUMENT BOARD
- 11. HANDLE BARS
- 12. LEVERS DRIVE CONTROL

- 13. PUSH BUTTON SECURITY DEVICE REVERSE MOTION
- 14. LEVER SOLUTION VALVE
- 15. LEVER BRUSHES BASE GROUP LIFTING (only version with hydraulic pump)
- 16. LEVER PARKING / EMERGENCY BRAKE
- 17. LEVER SQUEEGEE LIFTING
- 18. COUPLING SQUEEGEE HOSE / SQUEEGEE
- 19. SQUEEGEE ASSEMBLY
- 20. GUIDE SPRING SQUEEGEE HOSE
- 21. KNOB PRESSURE ADJUSTMENT BRUSHES BASE
- 22. CASTOR WHEELS
- 23. TRACTION WHEELS
- 24. BRUSHES BASE GROUP
- 25. SCREW CAP FOR INLET DETERGENT SOLUTION



TECHNICAL DESCRIPTION	U/M	amber 66 24V	amber 66	amber 83
Cleaning width	mm	660	660	830
Squeegee width	mm	980	980	1060
Working capacity, up to	sqm/h	3000	3000	3750
Brushes diameter	mm	2x345	2x345	2x430
Brushes rpm	rpm	190	170	162
Pressure on the brushes	kg	60 max	75 max	80 max
Brushes motor	W	600	900	1125
Traction motor	W	310	500	500
Type of drive		autom.	autom.	autom.
Movement speed 1st speed	km/h	5,0	4,5	4,5
Movement speed 2nd speed	km/h	3,5	-	-
Maximum gradient		10 %	15 %	15 %
Suction motor	W	570	570	570
Suction vacuum	mbar	160	160	160
Solution tank	l	100	100	100
Recovery tank	l	105	105	105
Machine length	mm	1670	1650	1712
Machine height	mm	1195	1195	1195
Machine width (without squeegee)	mm	730	760	885
Capacity of the batteries	V/Ah _{5h}	24/240	36/240	36/240
Weight of the batteries	kg	190	282	282
Compartment of the batteries	mm	415x520x385	415x770x385	415x770x385
Weight of the machine (empty and without batteries)	kg	190	219	225
Acoustic pressure level	dB (A)	-	71,9	70,9
Level of vibration right hand	m/sqs	-	0,70	0,48
Level of vibration left hand	m/sqs	-	0,83	0,51
Max. level of the electro magnetic field	μT	-	1,58	1,77
Class		III	III	III
Protection level	IP	X3	X3	X3
Tension	V	24	36	36

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.

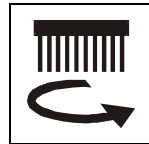
- Read the labels carefully on the machine. Do not cover them for any reason and replace them immediately if damaged.
- The machine must be used exclusively by authorized staff that has been instructed for its use.
- During the working of the machine, pay attention to other people and especially to the children.
- In case of danger act immediately upon the emergency brake.
- Leaving the machine in parking position, take off the key and act upon the parking brake.
- 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.
- 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 lifting 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



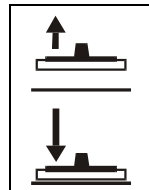
Symbol denoting the solution valve.
Indicates the solution valve lever.
Indicates the signal lamp of the solenoid valve functioning.



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



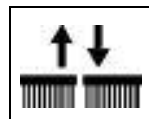
Symbol denoting the suction motor.
Indicates the switch of the suction motor.



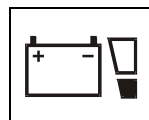
Symbol denoting up - down of the squeegee.
Indicates the squeegee lever.



Symbol denoting the selection switch of the driving speed.
Symbol that indicates the push button and the signal lamp up/down brushes.



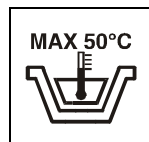
Symbol that indicates the lever for the brushes base lifting or the push button up/down brushes base.



Symbol denoting the charge level of the batteries.



Symbol denoting the hour meter.



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



Symbol denoting the brake.
Indicates the signal lamp of the brake on.



Symbol denoting the brake.
Indicates the lever of the emergency and parking brake.



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 255kg.

Packing dimensions:

Base: 178 cm x 93 cm

Height: 138 cm

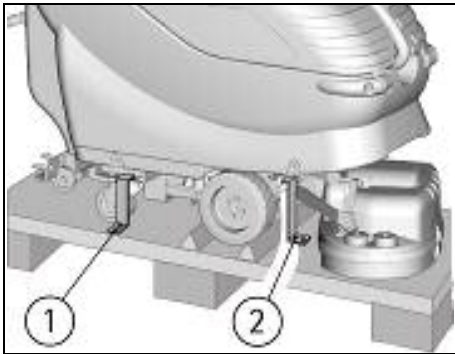


ATTENTION:

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

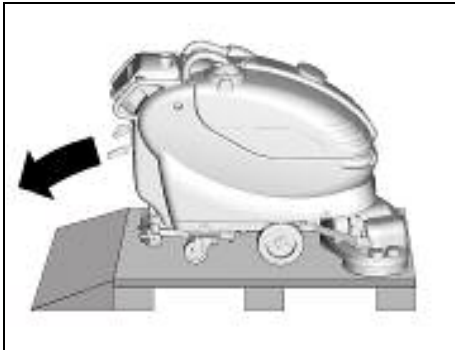
UNPACKING OF THE MACHINE

1. Remove the external packing.
2. Unscrew the brackets (1+2) that secure the machine to the pallet.



3. Move the machine backwards, avoiding heavy contacts to mechanical parts.

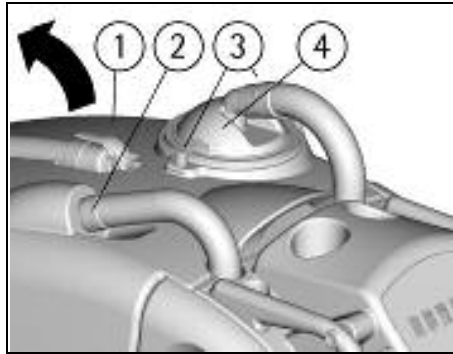
4. Keep the pallet and the brackets for eventual transport.



ACCESS TO THE BATTERY COMPARTMENT

In order to reach the battery compartment, it is necessary to rotate forwards the recovery tank (1). Before rotating it, it is necessary to:

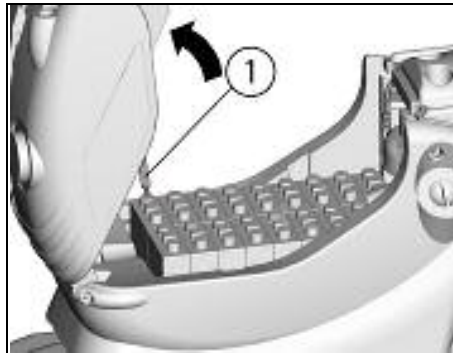
1. Bring the machine on a levelled surface.
2. Take off the squeegee hose (2) from its seat.
3. Take off the suction cover (4) after turning the blocking levers (3).
4. Verify by lifting the filter and its protection, that the tank is empty, otherwise, proceed to the emptying as indicated under paragraph "RECOVERY TANK CLEANING".



5. Rotate, lifting lightly the tank from its rear handle until the gas shock absorber (1) acts, which lifts it up to a first position. Lifting it more, the maximum opening can be obtained.

6. Having finished any type of intervention, close the battery compartment pushing the tank downwards if it is open at the first position, while from the maximum opening it is necessary to unblock the support of the gas shock absorber (1).

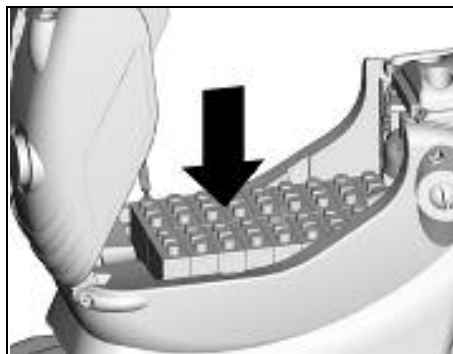
7. Reassemble everything.



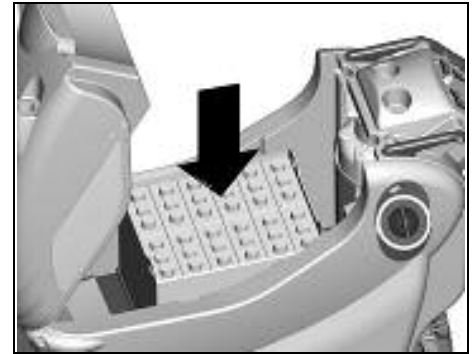
BATTERY INSTALLATION AND SETTING OF THE BATTERY TYPE

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 machines at 36V fill the battery compartment completely while the 24V version has to fit the batteries into the appropriate reduced steel basin.



ATTENTION:

The machine and its battery check card foresee the use of traditional lead batteries.

CHECK SETTING OF THE CHECK CARD ON THE INDICATOR (1) (see under paragraph "BATTERIES CHARGE LEVEL INDICATOR").

In case of GEL batteries installation, it is necessary to set the battery check card. Please contact the authorized technical assistance.

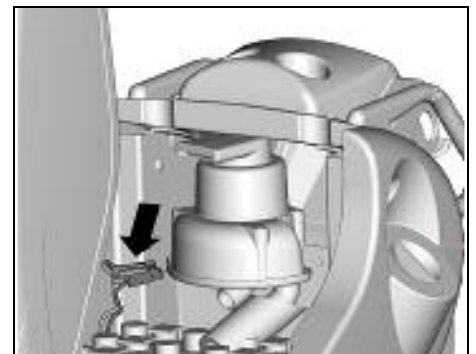


ATTENTION:

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

For batteries installation it is necessary to reach the battery compartment as indicated under paragraph "ACCESS TO THE BATTERY COMPARTMENT".

1. Rotate the recovery tank up to the maximum opening position.
2. Place the batteries in its compartment.
3. **Connect the terminals, respecting the polarities, avoiding contact with other parts that could create short circuit.**



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.

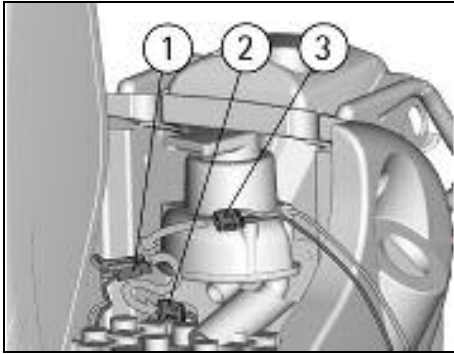
**ATTENTION:**

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

BATTERIES RECHARGING

For batteries recharge it is necessary to reach the battery compartment as indicated under paragraph "ACCESS TO THE BATTERY COMPARTMENT".

1. Plug in the batteries connector (1) placed in the inner part of the machine, to the connector (3) of the battery recharger.
2. Proceed to the recharging keeping the tank lifted.

**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 that the 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 top them up with distilled water.

**ATTENTION:**

For the 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.**

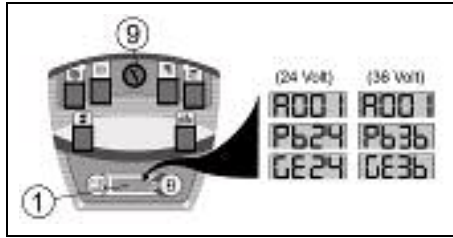
BATTERIES DISPOSAL

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

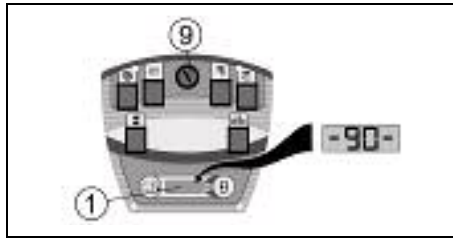
BATTERIES CHARGE LEVEL INDICATOR

TURNING THE KEY (9) CLOCKWISE, ON THE DISPLAY (1) APPEAR IN SEQUENCE THE FOLLOWING INFORMATION:

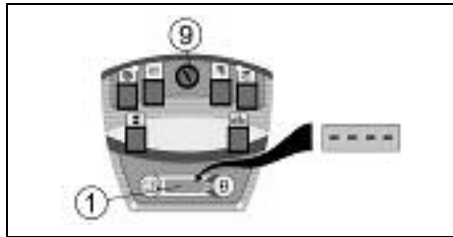
1. the version (for example A003) of software installed on the machine.
2. the setting of the battery check card which can be for the 36V version:
GE 36: check card set for GEL batteries.
Pb 36: check card set for lead batteries
or for the 24V version:
GE 24: check card set for GEL batteries.
Pb 24: check card set for lead batteries



3. The batteries charge level indicator (1) is digital. The battery charge level starts at 90, which indicates the 90% of the total charge and decreases from 10 to 10. When the charge level reaches 20%, the display starts blinking, so you are about the end of working.

**ATTENTION:**

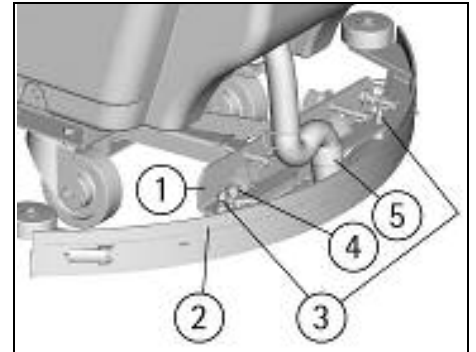
After a few seconds from the blinking of the four lines, the brushes motor stops automatically. With the remaining charge it is anyhow possible to finish the drying operation before proceeding to the re-charge.

**HOUR METER**

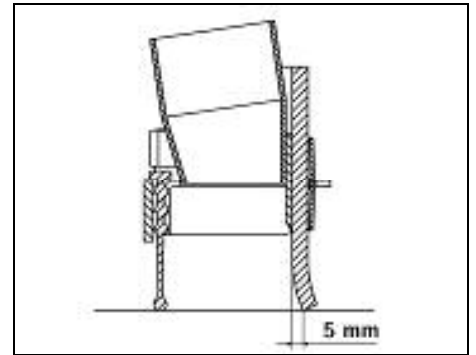
The machine is equipped with an hour meter located on the same display of the battery charge level indicator (1). Keeping the button (8) pressed for more than 3 seconds, the first data indicates the working hours and after a few seconds the working minutes are shown.

**SQUEEGEE ASSEMBLY**

1. Maintain the squeegee support (1) slightly lifted from the floor.
2. Insert the two stud bolts (3) placed on the upper part of the squeegee (2) inside the slots on the support.
3. Block the squeegee by rotating the lever (4) clockwise.
4. Insert the squeegee hose (5) into its coupling, respecting its position as indicated in the figure.

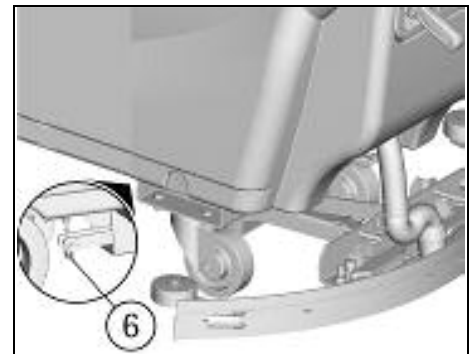
**ADJUSTMENT OF THE SQUEEGEE**

In order to have a perfect drying result through the squeegee, the rear rubber must have the lower bending uniformly adjusted in all its length. For the adjustment, it is necessary to put oneself in working condition and therefore the suction motor has to be switched on and the brushes have to function together with the detergent solution.



The lower part of the rubber is too much bent
Take off the pressure rotating the wing nut (6) counterclockwise.

The lower part of the rubber is not much bent
Increase the pressure rotating the wing nut (6) clockwise.

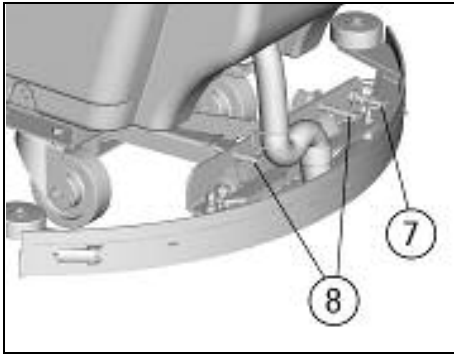


The bending is not uniform

Adjust the squeegee inclination rotating counterclockwise the wing nut (7) to increase the bending in the central part, or clockwise to increase the bending on the extremities.

Height adjustment

Once that the pressure and inclination of the squeegee has been adjusted, it is necessary to fix this optimum condition making touch slightly the wheels onto the floor. Rotate counterclockwise the registers (8) to lower the wheels or clockwise to raise them. Both wheels must be adjusted in the same measure.

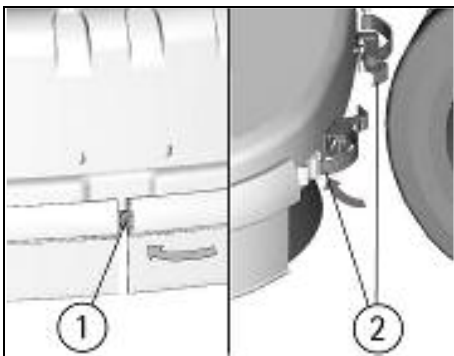


⚠ ATTENTION:

Every type of floor requires a specific adjustment. For example, concrete floors (where the friction results to be high) need little pressure, while smooth floors (ceramics) need higher pressure. If the cleaning operations are made always on the same type of floor, the adjustment can change only in function of the rubber wear.

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 (1) placed in the front part of the brushes base group. Secure the strips through the nut blocking it. Block the coupling levers (2) in the rear part of the brushes base group to the rings placed at the extremity of the metal strips still free. Please act as above for both 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.



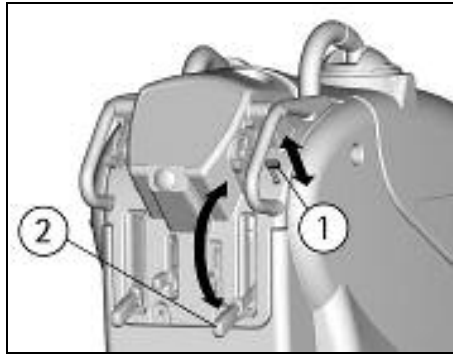
BRUSHES ASSEMBLY

The machines which have the brushes base lifting with the manual hydraulic pump:

1. Take off the electric supply by turning the key (9) counterclockwise.



2. Pull upwards the small lever for the valve control (1), to activate the pump.
3. Acting repeatedly onto the lever (2) lift the brushes base.



The machines which have the electrical brushes base lifting:

1. Switch on the machine by turning the key (9) clockwise.
2. Press the push button (7) of up/down brushes base to lift the brushes.
3. Take off the electric supply by turning the key (9) counterclockwise.



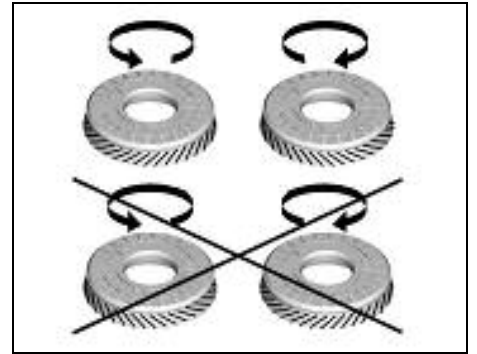
⚠ ATTENTION:

To carry out brushes assembly operations with the electric supply on, may cause damages to hands.

With the brushes base group in lifted position, insert the brushes into their plate seat underneath the brushes base turning them until the three metal buttons are properly seated in their slots; rotate energetically the brushes to push the button towards the coupling spring until they get blocked. The figure shows the rotating sense for 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:

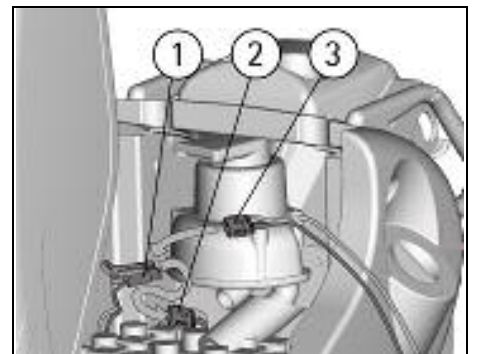
Use only brushes supplied with the machine or the ones indicated in the paragraph "RECOMMENDED BRUSHES". The use of other brushes can compromise security.

FLOOR CLEANING

CONNECTION OF THE BATTERIES TO THE MACHINE

Once that the battery recharging has been completed:

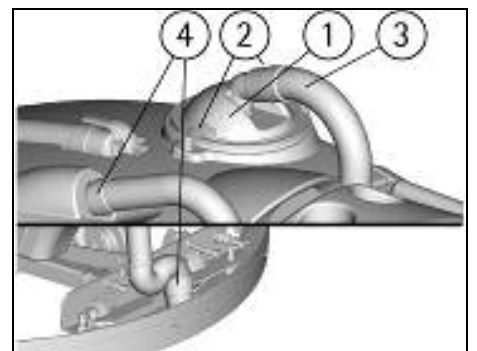
1. Disconnect the connector (3) of the battery recharger (1). To do this, it is necessary to reach the battery compartment as indicated under paragraph "ACCESS TO THE BATTERY COMPARTMENT".
2. Connect instead the machine connector (2).
3. Close the battery compartment.

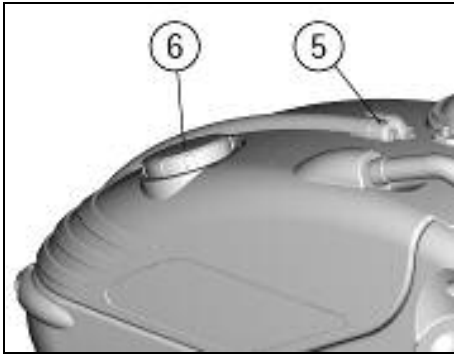


RECOVERY TANK

Check that the cover of the suction filter (1) is correctly secured, after rotating the levers (2) and that the suction motor hose (3) is correctly connected to it.

Verify also that the squeegee hose couplings (4) are correctly inserted into the seats, that the exhaust hose plug (5) placed in the front part of the machine is closed and that also the inspection cap (6) is closed well.

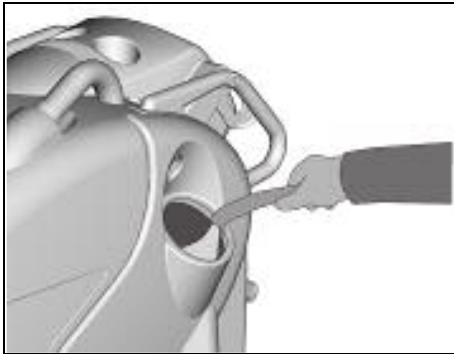




DETERGENT SOLUTION TANK

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

Open the screw plug 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.



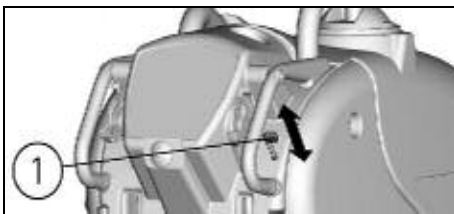
⚠ ATTENTION:

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.

STARTING OF THE MACHINE

1. Turn the key (9) clockwise.
2. Check the battery type and the charge level on the display (1).
3. Press the brushes motor switch (6).
4. Press the suction motor switch (3).
5. Lower the brushes base onto the floor.
The machines which have the brushes base lifting with the manual hydraulic pump push downwards the small lever of the valve control (1).



The machines which have the electrical brushes base lifting press the push button (7) of up/down of the brushes base.

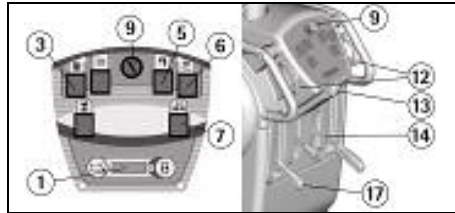
6. Acting upon the solution valve lever (14) open and adjust the detergent solution flow.
On the instrument board the indicator of the open solution valve (5) will turn on. The water starts to flow automatically acting upon the levers drive con-

trol (12). Releasing these levers, the flow will stop automatically.

7. Acting upon the squeegee lifting lever (17) lower the squeegee.

8. Acting upon the levers drive control (12) the machine starts to move, the brushes start to rotate and the squeegee starts to dry.

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 type of floor, dirtiness and machine speed.



FORWARD MOVEMENT

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

To move the machine, act upon the key (9) and then rotate the levers drive control (12) placed on the handle bar, in forward you obtain the forward drive, in reverse the backwards movement is obtained. The control acts in a progressive way, therefore it is possible to graduate the speed depending on each requirement rotating the lever whatever it is necessary. During reverse motion the speed is reduced.



SPEED ADJUSTMENT

Two values of the maximum drive working speed in forward movement can be chosen.

Set the wanted speed through the speed selection switch (2).



⚠ ATTENTION:

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

SECURITY DEVICE REVERSE MOVEMENT

A large-sized push button (13), placed on the rear extremity of the machine is for the automatic drive inversion. If the operator unintentionally remains blocked between the machine and an obstacle, this push button gives the control to invert the machine when it touches the operator.



WORKING BRAKE

To stop the machine during normal working situation, it is sufficient to release the levers drive control (12), as the machine is equipped with an electronic braking system. The brushes and the detergent solution flow stop automatically.

EMERGENCY BRAKE

In case of an emergency, an immediate stop can be obtained acting upon the lever of the emergency and parking brake (16) by pushing it downwards.



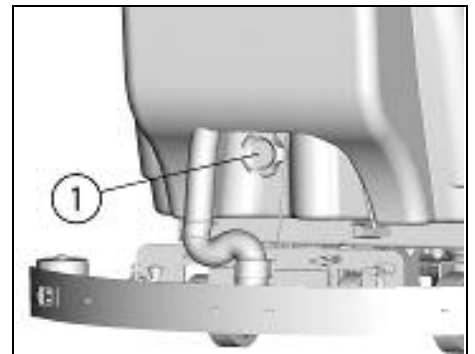
⚠ ATTENTION:

This control blocks the machine immediately. The emergency brake functions also as a parking brake. To start again to work, release the lever by unblocking the parking button on the lever itself and act again upon the levers drive control (12).

ADJUSTMENT OF THE BRUSHES PRESSURE

Through the register (1) it is possible to adjust the brushes pressure on the cleaned surface.

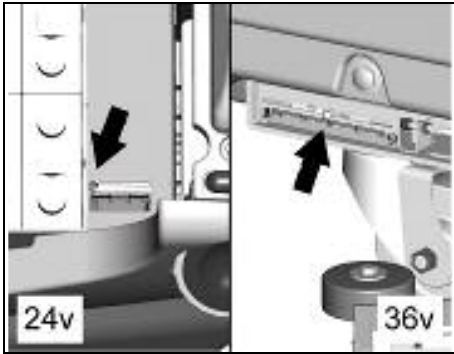
By turning the knob clockwise the pressure increases, rotating it counterclockwise, the pressure decreases. This device allows a more efficient cleaning action also on very difficult and dirty surfaces.



The control of the adjustment value of the set pressure is possible through a sliding indication. Its position shows the value indicated on the label placed in correspondence of the slots where it slides.

On the 24 Volt machines the indicator is placed in the rear part of the frame inside the battery compartment.

On the 36 Volt machines the indicator is placed on the left lower part of the machine near the rear wheel.

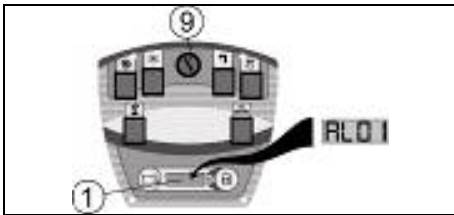


⚠ ATTENTION:

In order not to overload the brushes motor, it is convenient to reduce the brushes pressure going from smooth floors to rough ones (ex. concrete).

BRUSHES MOTOR OVERLOAD PROTECTION DEVICE

The machine is equipped with a protection device of the brushes motor. This device blocks the motor functioning in order to protect it and indicates the overload on the display (1) with "AL01". The block could be caused by an excessive brushes pressure on a rough floor. Check the brushes pressure adjustment as indicated in the previous paragraph.



⚠ ATTENTION:

To restore the functioning of the brushes motor, turn off and on again the machine acting upon the key switch (9).

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.



⚠ ATTENTION:

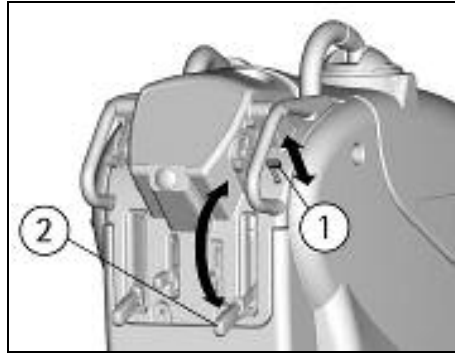
This operation must be carried out using gloves to protect from contact with dangerous solutions.

STOP OF THE MACHINE AFTER CLEANING OPERATION

Before executing any type of maintenance:

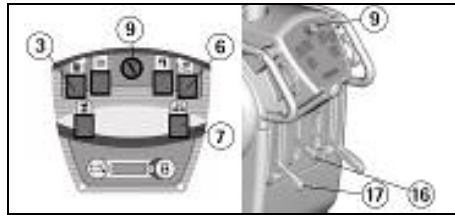
1. Turn the brushes motor switch off (6).
2. Turn the suction motor switch off (3).
3. Lift the brushes base from the floor.

The machines which have the brushes base lifting with the manual hydraulic pump, pull upwards the small lever for the valve control (1), to activate the pump and acting repeatedly onto the lever (2) lift the brushes base.



The machines which have the brushes base lifting electrically done press the push button (7) of up/down of the brushes base.

4. Lift the squeegee acting upon the lever (17).
5. Bring the machine to an appropriate place for tanks draining.
6. Turn the key (9) counterclockwise.
7. Insert the parking brake (16).



DAILY MAINTENANCE

RECOVERY TANK CLEANING

1. Hold the exhaust hose placed in the front part of the machine.
2. Take off the plug of the exhaust hose acting upon its lever and empty the recovery tank into appropriate containers.



3. Take off suction cover after rotating the blocking levers.
4. Take off the filter and filter protection.
5. Take off the inspection cap of the recovery tank.
6. Rinse the tank with a water jet from both openings.

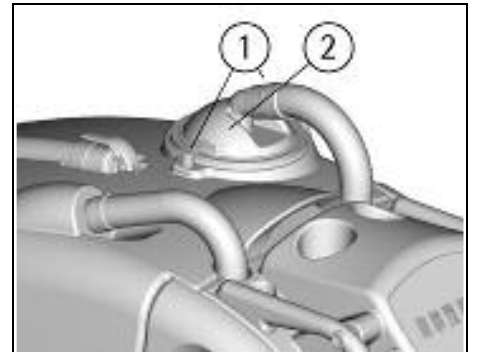


⚠ ATTENTION:

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

SUCTION FILTER CLEANING

1. Take off suction cover (2) after rotating the blocking levers (1).



2. Take off the filter and filter protection.
3. Clean all parts with a water jet especially the inside surfaces and the filter bottom.
4. Carry out cleaning operations carefully.
5. Reassemble all parts.



BRUSHES CLEANING

Disassemble the brushes and clean them with a water jet (check under paragraph of "BRUSHES DISASSEMBLY").

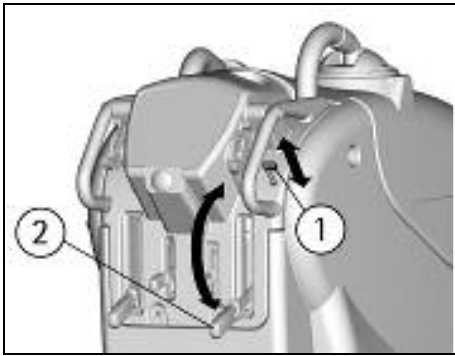
BRUSHES DISASSEMBLY

The machines which have the brushes base lifting with the manual hydraulic pump:

1. Take off the electric supply by turning the key (9) counterclockwise.



2. Pull upwards the small lever for the valve control (1), to activate the pump.
3. Acting repeatedly onto the lever (2) lift the brushes base.



The machines which have the electrical brushes base lifting:

1. Switch on the machine by turning the key (9) clockwise.
2. Press the push button (7) of up/down brushes base to lift the brushes.
3. Take off the electric supply by turning the key (9) counterclockwise.

**ATTENTION:**

To carry out brushes disassembly operations with the electric supply on, may cause damages to hands.

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

**ATTENTION:**

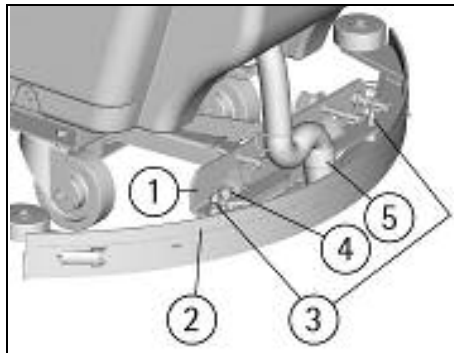
Pick up the brushes and wash them using gloves to protect from contact with dangerous solutions.

SQUEEGEE CLEANING

Keeping the squeegee clean guarantees always the best drying action.

For its cleaning it is necessary to:

1. Take off the squeegee hose (5) from the coupling.
2. Disassemble the squeegee (2) from its support (1) by rotating the lever (4) counterclockwise and making slide the stud bolts (3) 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 CHECK**

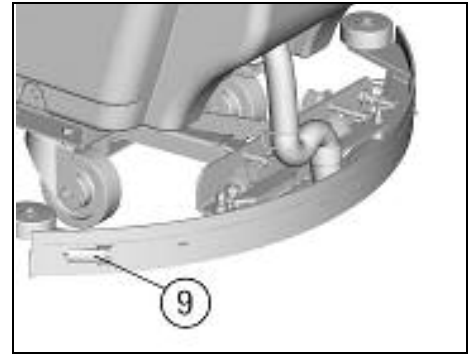
Check the squeegee rubber wear and eventually turn or replace it.

For the replacement it is necessary to:

1. Lift the squeegee acting upon the lever (17).

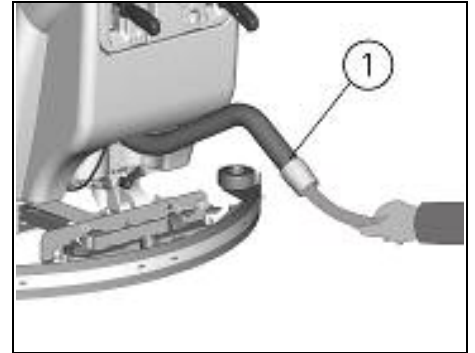


2. Release the hook (9) of the rubber holder blade and take the rubber off.
3. Turn the rubber to a new side or replace it. To reassemble the squeegee repeat reverse the operations above mentioned, inserting the rubber on the guides and blocking it with the rubber holder blade.

**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:

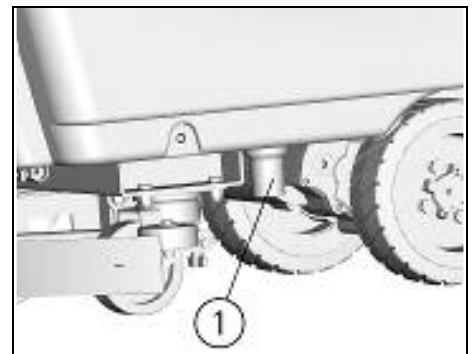
1. Take off the hose (1) from the squeegee coupling.
 2. Wash the inside of the hose with a water jet.
- To reassemble the hose repeat reverse the operations above-mentioned.

**ATTENTION:**

Do not wash the hose that goes from the suction motor to the suction cover.

CLEANING OF THE SOLUTION TANK

1. Bring the machine to an appropriate place for the detergent solution draining.
2. Unscrew the solution tank cap.
3. Unscrew the cap of the exhaust filter (1) so that the detergent solution flows out into appropriate containers. Pay attention not to lose the gasket of the cap.
4. Rinse with a water jet the solution tank.
5. Reassemble all parts.

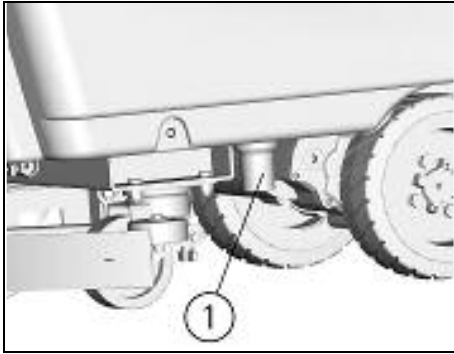


**ATTENTION:**

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

CLEANING OF THE SOLUTION FILTER

1. Empty the detergent solution tank as indicated in paragraph "CLEANING OF THE SOLUTION TANK".
2. Unscrew the cap of the exhaust filter (1).
3. Rinse the filter placed inside the cap, paying attention not to lose the gasket of the cap.
4. Rinse the hose pouring some water into the solution tank.
5. Reassemble all parts.

**ATTENTION:**

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

TWO-MONTHLY MAINTENANCE**FRONT SQUEEGEE RUBBER CHECK**

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

For the replacement it is necessary to:

1. Release the squeegee from the support as indicated in paragraph "SQUEEGEE CLEANING".
2. Unscrew the wing nuts in the front part of the squeegee.
3. Take off the rubber holder blade.
4. Replace the front rubber.
5. Reassemble all parts.

CHECK HYDRAULIC SYSTEM

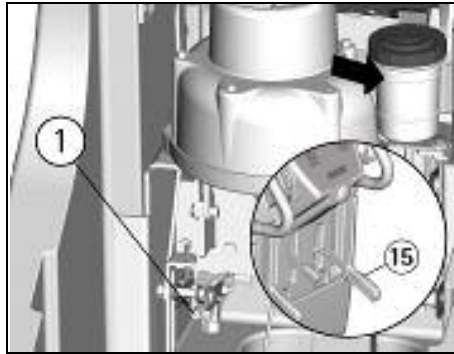
Check the pump efficacy of the brushes base lifting. Verify the oil level in the tank as indicated on the label fixed onto the tank, paying attention that the level never has to go under the minimum.

In case of topping up, use oil type "tellus 32".

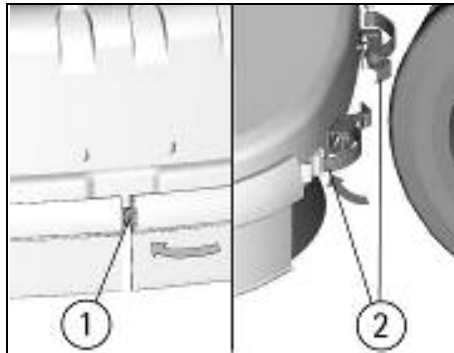
If the brushes base does not maintain its lifted position and descends slowly to the floor without any sign of oil leakage, then this means that the oil goes into the "oil tank of the pump" discharging the pressure of the hydraulic system.

This happens because in the system there is a steel sphere which does not close perfectly onto its seat because of the presence of dirt and therefore does not interrupt the oil flow.

To clean the seat it is sufficient to screw down completely to the threading the register (1) present on the pump, act a few times upon the lifting lever (15) in order to make move the oil and then bring the register (1) into its original position to obtain a correct lowering speed of the brushes base.

**SIX-MONTHLY MAINTENANCE****SPLASH GUARD RUBBER CHECK**

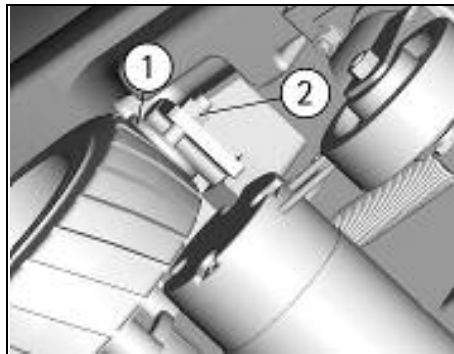
1. Open the hooks in the rear part of the brushes base group from the slot placed at the extremity of the metal strip.
 2. Replace the splash guard rubbers and follow assembling instructions as under paragraph "SPLASH GUARD ASSEMBLY".
- With brushes assembled, the splash guard must slightly touch the floor.

**CLEANING OF THE INNER FILTER SOLUTION TANK**

Clean regularly the internal filter of the solution tank which is in the rear low part of the machine. Empty the solution tank, remove the fitting of the water outlet by taking off the two screws which fix it to the tank. Clean the inside filtrating part of the fitting from eventual dirt. Pour some water into the tank to clean it. Reassemble the fitting onto the solution tank.

CHECK OF THE BRAKE

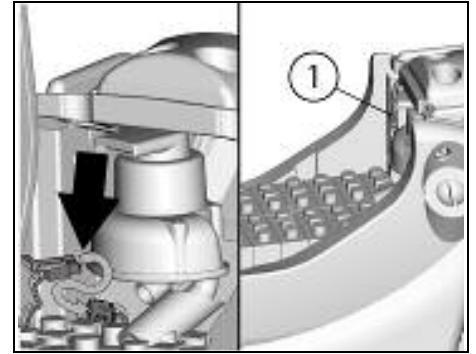
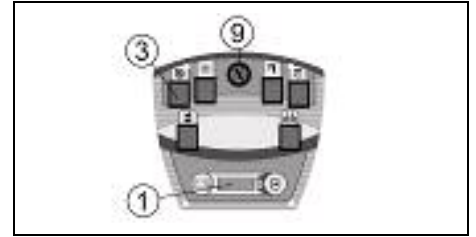
Check the braking efficacy and that both pads (1) which act upon the traction wheels, in resting position, have got a distance of not more than 3mm from the wheels. If necessary, adjust them through the fixing nuts (2).



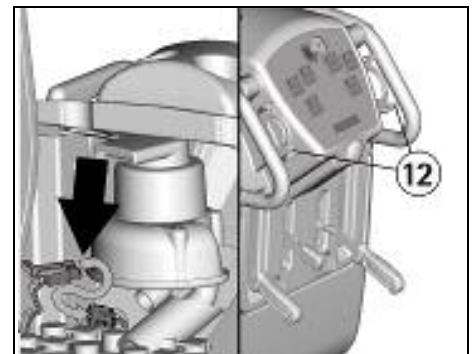
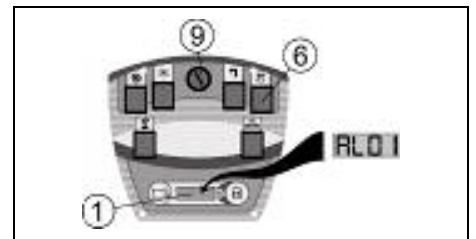
The checking of all the other foreseen machine operations is left to the authorized technical assistance.

TROUBLESHOOTING GUIDE**THE SUCTION MOTOR DOES NOT WORK**

1. Verify that the key switch (9) is in the correct position.
 2. Check the charge level of the batteries on the display (1).
 3. Check that the battery connector is correctly plugged in.
 4. Verify that the switch (3) 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.

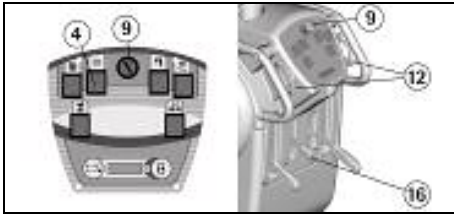
**THE BRUSHES MOTOR DOES NOT WORK**

1. Verify that the key switch (9) is in the correct position. Switch off and on again the machine.
 2. Check the charge level of the batteries on the display (1).
 3. Check that the battery connector is correctly plugged in.
 4. Verify that the switch (6) is on.
 5. Act upon the levers drive control (12).
 6. Check that on the display (1) does not appear the alarm "AL01" (brushes motor overload alarm).
- If the problem persists, please contact the authorized technical assistance.



THE TRACTION MOTOR DOES NOT WORK

1. Switch off and on again the machine.
2. Release the brake (16) until the signal lamp (4) comes off.
3. Act upon the levers drive control (12).
If the problem persists, please contact the authorized technical assistance.

**ATTENTION:**

Never leave the batteries discharged for a long time.

THE DETERGENT SOLUTION ON THE BRUSHES IS NOT SUFFICIENT

1. Check that the solution valve lever (14) is open.
2. Check the level of the liquid in the solution tank.
3. Check that solution filter is clean (see under paragraph "CLEANING OF THE SOLUTION FILTER").
4. The machine is equipped with solenoid valve, therefore act upon the levers drive control (12) to let

come down the detergent solution and check that the signal lamp (5) comes on.

5. If the detergent solution still does not come down, clean the filter inside the solution tank. Empty the solution tank, remove the fitting of the water outlet by taking off the two screws which fix it to the tank. Clean the inside filtrating part of the fitting from eventual dirt. Pour some water into the tank and clean it. Reassemble the fitting onto the solution tank.

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: 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 brushes, see instructions at paragraph "BRUSHES DISASSEMBLY" and "BRUSHES ASSEMBLY".
3. The detergent solution is insufficient: open more the solution valve.
 4. Check that the liquid detergent is in the recommended percentage.
 5. Increase the brushes base pressure (see at paragraph "ADJUSTMENT OF THE BRUSHES PRESSURE"). Contact the authorized technical assistance for advice.

THE SQUEEGEE DOES NOT DRY PERFECTLY

1. Check that the squeegee rubbers are clean.
2. Check the adjustment of the height and the inclination of the squeegee (see section "ADJUSTMENT OF THE 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.

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	20 HOURS *	200 HOURS *	1000 HOURS *
RECOVERY TANK CLEANING	•			
SUCTION FILTER CLEANING	•			
SOLUTION TANK FILTER CLEANING		•		
BRUSHES CLEANING	•			
BRUSHES DISASSEMBLY AND CLEANING	•			
SQUEEGEE CLEANING	•			
FRONT SQUEEGEE RUBBER REPLACEMENT			•	
REAR SQUEEGEE RUBBER REPLACEMENT		•		
SPLASH GUARD RUBBER REPLACEMENT				•
CHECK SQUEEGEE ADJUSTMENT		•		
SQUEEGEE HOSE CLEANING		•		
SOLUTION TANK CLEANING		•		
CHECK BATTERIES ELECTROLYTE		•		
CHECK OF THE BRAKE				•
CHECK OF THE HYDRAULIC SYSTEM			•	
TRACTION MOTOR CHECK				•
BRUSHES MOTOR CHECK				•
SUCTION MOTOR CHECK				•
CHECK BRUSHES BASE GROUP			•	
SCREW TIGHTENING				•

* The hours refer to the ones indicated on the display (see under paragraph "HOUR METER").

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 60°C. It is not hygroscopic.
NYLON	Excellent wear resistance, even with hot water over 60°C. It is hygroscopic. It loses its physical characteristics over the time.
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 brush 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	It is equipped with anchor points which permit the blocking of the abrasive pad during work. The pad is recommended to clean smooth floors.

MACHINE	CODE	QUANTITY	DESCRIPTION	USE
amber 66	48903020	2	Brush PPL 0,6 Ø 345	Normal floors.
	48903030	2	Brush PPL 0,9 Ø 345	Smooth floors with small joints and persistent dirt.
	48903040	2	Brush TYNEX Ø 345	Floors of resistant material and particularly dirty.
	48903050	2	Brush 5-mix Ø 345	For all types of floors.
	48803010	2	Pad holder Ø 330	For pads of 14", for smooth surfaces cleaning.
	48803030	2	Pad holder Ø 330 + center lock green	For pads of 14", for smooth surfaces cleaning.
	48803040	2	Pad holder Ø 330 + center lock black	For pads of 14", for smooth surfaces cleaning.
amber 83	48903110	2	Brush PPL 0,3 Ø 430	Normal floors.
	48903120	2	Brush PPL 0,6 Ø 430	Normal floors.
	48903130	2	Brush PPL 0,9 Ø 430	Smooth floors with small joints and persistent dirt.
	48903140	2	Brush TYNEX Ø 430	Floors of resistant material and particularly dirty.
	48903150	2	Brush 5-mix Ø 430	For all types of floors.
	48803020	2	Pad holder Ø 425	For pads of 17", for smooth surfaces cleaning.
	48803050	2	Pad holder Ø 425 + center lock green	For pads of 17", for smooth surfaces cleaning.
48803060	2	Pad holder Ø 425 + center lock black	For pads of 17", for smooth surfaces cleaning.	