

# USE AND MAINTENANCE MANUAL

 **FIMAP**<sup>®</sup>



Mx - SMx

ED. 05-2011

EN

ORIGINAL  
INSTRUCTIONS  
Doc. 10015330  
Ver. AD



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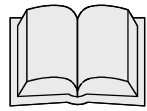
### Symbols used in the manual

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Open book symbol with an "i"  
Indicates that this document is an instruction manual

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Open book symbol  
Used to tell the operator to read the manual before using the machine

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Warning symbol  
Carefully read the sections marked with this symbol, for the safety of the operator and the machine

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Warning symbol  
Indicates danger of gas exhalation and leakage of corrosive liquids

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Warning symbol  
Indicates the danger of fire  
Do not go near with free flames

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Warning symbol  
Indicates that the packed product should be handled with suitable lifting means that comply with the legal requirements

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## On consignment of the machine

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When the machine is delivered to the customer, an immediate check must be performed to ensure all the material mentioned in the shipping documents has been received, and also to check the machine has not been damaged during transportation. If this is the case, the carrier must ascertain the extent of the damage at once, informing our customer service office. It is only by prompt action of this type that the missing material can be obtained, and compensation for damage successfully claimed.

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## Introduction

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Mx / SMx is a floor scrubbing machine which, via the mechanical action of the rotating brush and the chemical action of a water/detergent solution, can clean any type of flooring. As it advances, it also collects the dirt removed and the detergent solution not absorbed by the floor.

**The machine must be used only for this purpose.** Even the best machines will only work well if used correctly and kept in good working order. We therefore suggest you read this instruction booklet carefully and read it again whenever difficulties arise while using the machine. If necessary, remember that our assistance service (organised in collaboration with our dealers) is always available for advice or direct intervention.

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## Intended use

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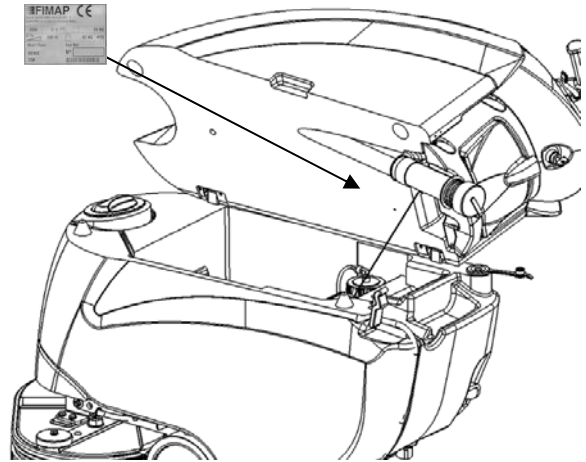
The scrubbing machine is designed exclusively for the professional cleaning of surfaces and floors in industrial, commercial and public environments. The machine is only suitable for use in closed (or at least covered) places.

The machine is not suitable for use in the rain, or under water jets. It is FORBIDDEN to use the machine in places with a potentially explosive atmosphere, for picking up dangerous dusts or inflammable liquids. In addition, it is not suitable as a means of transport for people or objects.

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## Serial number plate

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TECHNICAL DESCRIPTION	UM	Mx 50Bt	Mx 50Bts	Mx 55Bt	Mx 65Bt
Rated power	W	1260	1260	1260	1260
Working width	mm	500	500	550	660
Width of rear squeegee	mm	755	755	755	948
Work capacity	m <sup>2</sup> /h	2250	2250	2500	2970
Brushes (diameter or length)	∅ mm	500 (x1)	110x500 (x2)	285 (x2)	355 (x2)
Brush rotations	rpm	240	800	240	225
Pressure on the brushes	kg	40	40	40	45
Brush motor	V / W	24/560	24/560	24/560	24/560
Type of advance		Autom	Autom	Autom	Autom
Maximum gradient		10%	10%	10%	10%
Movement speed	km/h	0-5	0-5	0-5	0-5
Suction motor	V / W	24/310	24/310	24/310	24/310
Suction vacuum	mbar	188	188	188	188
Solution tank PE	l	55	55	55	55
Recovery tank PE	l	60	60	60	60
Gross weight of the machine ready for use	kg	253	253	252	253
Batteries	V/Ah	12/150 (x2)	12/150 (x2)	12/150 (x2)	12/150 (x2)
Battery charger *	V/A	24/15	24/15	24/15	24/15
Battery compartment dimensions (Length / Height / Width)	mm / mm / mm	350x305x360	350x305x360	350x305x360	350x305x360
Machine dimensions (Length / Height / Width)	mm / mm / mm	1380x1053x53	1380x1053x53	1380x1053x53	1380x1053x53
Noise level (in compliance with IEC 704/1)	dB (A)	59.2	59.2	59.2	59.2
Vibration level	m/s <sup>2</sup>	1.16	1.16	1.16	1.16

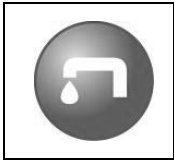
\* CB models with built-in battery charger

TECHNICAL DESCRIPTION	UM	SMx 65Bt	SMx 75Bt	SMx 60Bts
Rated power	W	1360	1360	1800
Working width	mm	660	760	600
Width of rear squeegee	mm	948	1050	948
Work capacity	m <sup>2</sup> /h	3300	3750	3000
Brushes (diameter or length)	∅ mm	345 (x2)	430 (x2)	150X600 (x2)
Brush rotations	rpm	240	240	575
Pressure on the brushes	kg	30-50	30-50	30-50
Brush motor	V / W	24/560	24/560	24/1000
Type of advance		autom	autom	autom
Maximum gradient	%	10%	10%	10%
Movement speed	km/h	0-3	0-3	0-3
Suction motor	V / W	24/310	24/310	24/310
Suction vacuum	mbar	188	188	188
Solution tank PE	l	80	80	80
Recovery tank PE	l	90	90	90
Gross weight of the machine ready for use	kg	330	335	335
Batteries	V / AhC5	6/200 (x4)	6/200 (x4)	6/200 (x4)
Battery charger *	V/A	24/25	24/25	24/25
Battery compartment dimensions (Length / Height / Width)	mm / mm /	450x305x450	450x305x450	450x305x450
Machine dimensions (Length / Height / Width)	mm / mm /	1448x1095x680	1448x1095x890	1448x1095x680
Noise level (in compliance with IEC 704/1)	dB (A)	68.7	68.7	68.7
Vibration level	m/s <sup>2</sup>	1.07	1.07	1.07

\* CB models with built-in battery charger



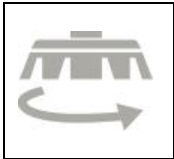
## SYMBOLS USED ON THE MACHINE



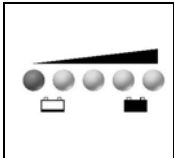
Tap symbol  
Used to indicate water regulation changes ( FSS models)



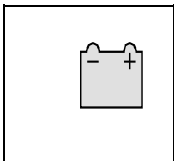
Detergent symbol  
Used to indicate detergent regulation changes ( FSS models )



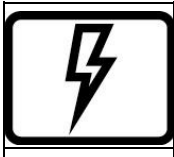
Brush release symbol (MX 50 model )  
Used to indicate the button for automatic brush release



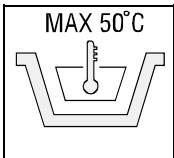
Battery charge level indicator



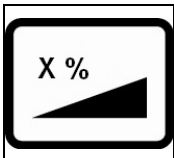
Battery symbol



Warning high voltage 110-220 Volt



Indicates the maximum temperature of the detergent solution  
Located near the solution tank inlet



Indicates the maximum gradient



## GENERAL SAFETY REGULATIONS

The regulations illustrated below must be carefully followed in order to avoid harm to the operator and damage to the machine.

- Read the labels on the machine carefully. Do not cover them for any reason and replace them immediately if they become damaged.
- The machine must be exclusively used by authorised, trained personnel.
- During the working of the machine, pay attention to other people and especially to children.
- The machine is not suitable for cleaning carpets.
- The socket for the battery charger cable must have a prescribed earth connection.
- Avoid damaging the battery charger cable by crushing or bending it, or by applying stress.
- If you notice any damage to the battery charger cable, contact a **FIMAP** technical assistance centre immediately.
- Do not mix different types of detergent as this may produce harmful gases.
- Do not place any liquid containers on the machine.
- The machine is designed for dry use only and should not be used or kept outdoors in wet conditions.
- The storage temperature must be between -25°C and +55°C; do not store outdoors in damp conditions.
- Conditions of use: room temperature between 0°C and 40°C with relative humidity between 30 and 95%.
- Do not use the machine in an explosive atmosphere.
- Do not use the machine as a means of transport.
- Do not use acid solutions which may damage the machine.
- Avoid working with the brushes when the machine is standing still, so as not to damage the floor.
- Do not vacuum inflammable liquids.
- Do not use the device to collect dangerous powders.
- In the event of a fire, use a powder extinguisher. Do not use water.
- Do not knock against shelving or scaffolding, where there is a danger of falling objects.
- If the machine is used where there is a risk of falling objects, the machine must be equipped with protection devices against falling objects.
- Do not use the machine on surfaces with an inclination greater than the one shown on the plate.
- The machine is designed to simultaneously carry out the washing and drying operations. Different operations should only be carried out in areas where the passage of unauthorised persons is prohibited. Signal the presence of damp floors with suitable signs.
- If the machine does not work properly, verify that this is not caused by failure to carry out routine maintenance. Otherwise, request the intervention of the **FIMAP** technical assistance centre.
- If you need to replace any components, request the ORIGINAL spare parts from a **FIMAP** dealer and/or Authorised Retailer.
- Before carrying out any maintenance work, switch off the machine and disconnect the battery connector.
- Do not remove any protection devices which require the use of tools in order to be removed.
- Do not wash the machine with direct water jets or with pressurised water, nor with corrosive substances.
- Send the machine to a **FIMAP** technical assistance centre for servicing at least once a year.
- To prevent scaling in the solution tank filter, do not fill the tank with detergent solution many hours before using the machine.
- Before using the machine, verify that all the hatches and covers are positioned as shown in this Use and Maintenance Manual.
- When disposing of consumption materials, comply with currently effective laws and regulations.
- When your **FIMAP** machine has reached the end of its long working life, dispose of the materials it contains in an appropriate manner, and bearing in mind that the machine itself was constructed using 100% recyclable materials.
- Only use the brushes supplied with the device, or those specified in the Use and Maintenance Manual (page 37). The use of other brushes could compromise safety levels.
- The device must be disconnected from the power supply before removing the battery.
- The battery must be removed from the device before this is disposed of.
- The battery and battery charger must be disposed of in a safe manner by scrupulously comply with currently effective laws.
- The machine is not suitable for use by children or people with reduced physical, mental and sensorial capacities, or people lacking experience and knowledge, unless supervised and instructed in the use of the machine by a person responsible for their safety.
- Children must be supervised to ensure they do not play with the device.
- To prevent unauthorised use, remove the key after use.
- When the machine is left unattended, engage the parking brake for safety against unintentional movements.





## MACHINE PREPARATION

### 1. HANDLING THE PACKAGED MACHINE

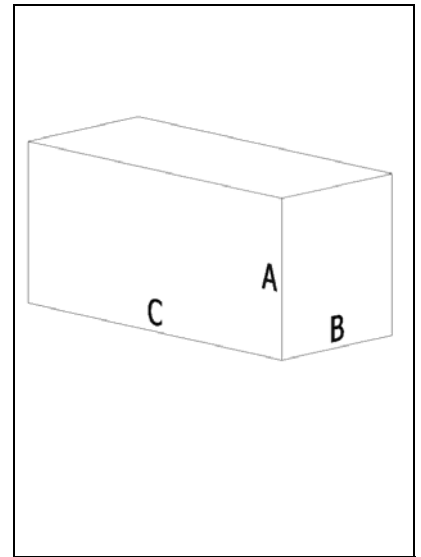
The machine is contained within specific packaging.  
It is not possible to place more than two packages on top of each other.  
The total weight is 130kg (without batteries) for Mx models  
Total weight is 175kg for SMx models  
The overall dimensions of the package are:

#### Mx VERSIONS

- A: 1260mm
- B: 720mm
- C: 1660mm

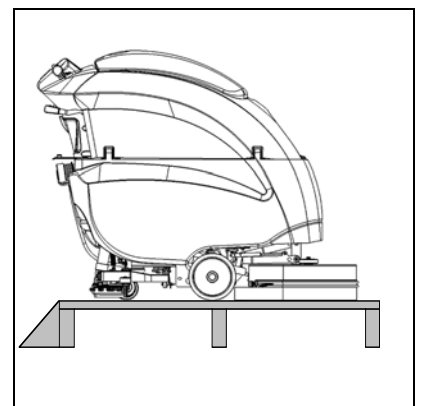
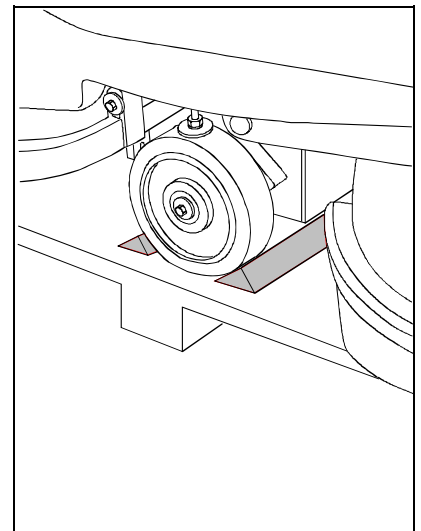
#### SMx VERSIONS

- A: 1760mm
- B: 1020mm
- C: 1270mm



### 2. HOW TO UNPACK THE MACHINE

1. Remove the outer packaging
2. The machine is fixed to the pallet with wedges which block the wheels
3. Remove these wedges
4. Use a chute to get the machine down from the pallet, pushing it backwards. Avoid violent blows to the brush head
5. Keep the pallet for any future transport needs



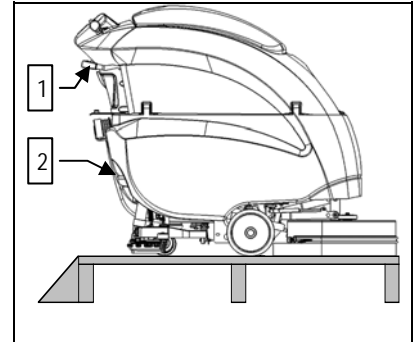


## MACHINE PREPARATION

### 3. HOW TO MOVE THE MACHINE

To safely transport the machine proceed as follows:

1. To move the machine, you should use a pallet to support it (positioning wooden wedges to block the wheels, as shown in the previous paragraph).
2. Lower the squeegee (1) with the lever
3. Lower the brush head (2) making the brush head body rest on the pallet by means of the pedal
4. Stop the machine by pulling the brake lever



### 4. INSERTING THE BATTERIES

The machine may be supplied with batteries and a built-in battery charger.

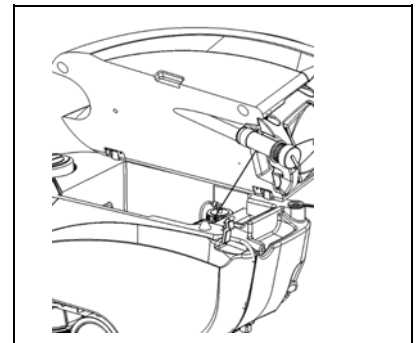
If batteries other than those supplied with the machine are used, have the battery charger and battery control card configuration checked by a qualified and trained FIMAP technician.

Perform a battery charging cycle before using the machine.

The batteries must be housed in the appropriate compartment beneath the recovery tank, and must also satisfy the requirements of the IEC 21-5 Standard.

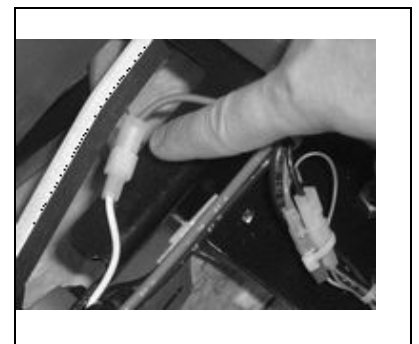
To insert the batteries you must:

1. Make sure the recovery tank is empty, otherwise empty it completely
2. Check that the parking brake is correctly engaged.
3. Make sure that the key switch is in the "0" position
4. Lower the squeegee and brush head (see the appropriate chapters)
5. open the rear hinge that closes the upper tank
6. Rotate the tank as far as it will go, using the side handle



**ATTENTION:** Before fitting the batteries, lift in the backing and connect the traction connector. this process must be carried out by qualified personnel. An incorrect connection of the connector may cause problems with machine functioning.

This operation is only possible for MX and SMx machines with semi-automatic traction



7. Lift the batteries by means of the grips on the upper part
8. house the batteries in the compartment, positioning the poles "+" and "-" opposite each other



## MACHINE PREPARATION



**WARNING:** you are advised to use airtight batteries only, to avoid the leakage of acids!



**ATTENTION:** you are advised to always wear protective gloves, to avoid the risk of serious injury to your hands

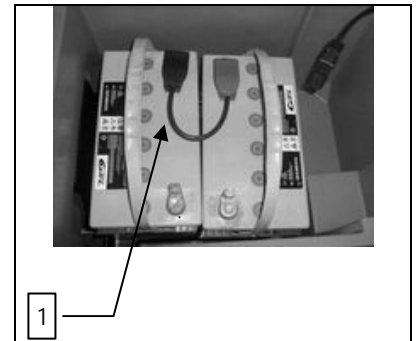


**ATTENTION:** You are advised to only lift and move the batteries with lifting and transportation means suitable for the specific weight and size

### 5. CONNECTING THE BATTERIES (MX VERSION)

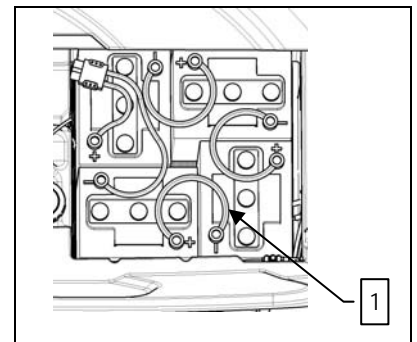
To connect the batteries you must:

1. house the batteries in the compartment, positioning the poles "+" and "-" opposite each other
2. connect the batteries in series - using the jumper cables supplied (3) - to the poles "+" and "-"
3. Connect the battery connector cable to the terminal poles "+" and "-" to obtain a voltage of 24V on the terminals



### 6. CONNECTING THE BATTERIES (SMX VERSION)

4. house the batteries in the compartment, positioning the poles "+" and "-" opposite each other
5. connect the batteries in series - using the jumper cables supplied (3) - to the poles "+" and "-"
6. Connect the battery connector cable to the terminal poles "+" and "-" to obtain a voltage of 24V on the terminals



### 7. TYPE OF BATTERY

To power the machine it is necessary to use:

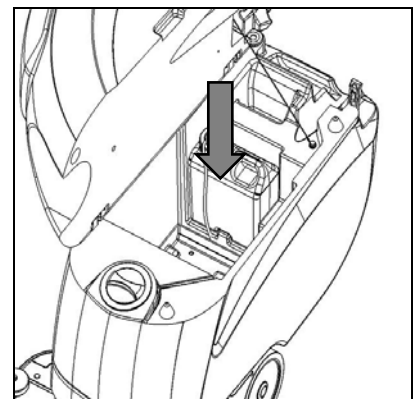
- liquidelectrolyte lead traction batteries;
- sealed traction batteries with gasrecombination or gel technology.

OTHER TYPES MUST NOT BE USED.

Each battery consists of DIN type cells connected in series that supply 6V voltage (SMx) or 12V voltage (Mx) to the clamps.



**ATTENTION:** You are advised to only lift and move the batteries with lifting and transportation means suitable for the specific weight and size



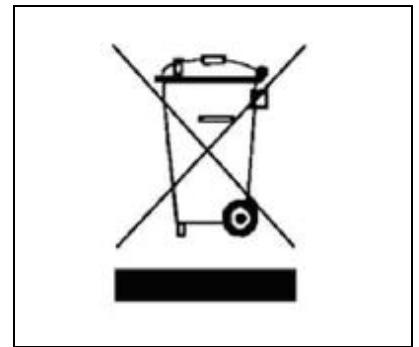


## MACHINE PREPARATION

They must be lifted by means of the grips on the upper part.  
They must be housed in the special compartment, with the connection clamps facing the rear of the machine.  
They must be connected together in series, to obtain a 24V voltage on the clamps.  
The electrical connection operations must be carried out by expert personnel, trained at the FIMAP technical assistance centre.

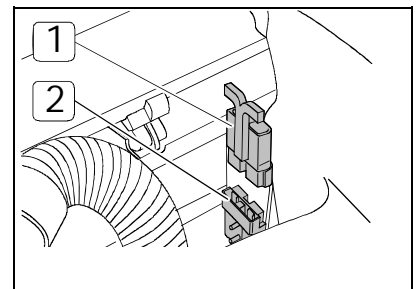
### 8. MAINTENANCE – DISPOSAL OF THE BATTERY

For maintenance and recharging, respect the instructions provided by the battery manufacturer.  
Particular attention must be paid when choosing the battery charger, if not supplied, since there are different kinds according to the type and capacity of the battery.  
When the battery reaches the end of its working life, it must be disconnected by expert, trained personnel, then lifted (using the grips and suitable lifting devices) to remove it from the battery compartment.  
**EXHAUSTED BATTERIES ARE CLASSIFIED AS DANGEROUS WASTE AND MUST BE CONSIGNED TO THE AUTHORISED BODIES FOR CORRECT DISPOSAL.**



### 9. CONNECTION OF THE ELECTRICAL SYSTEM CONNECTOR

Beneath the recovery tank there is the battery connector (2), in which the electrical system connector (1) must be inserted.

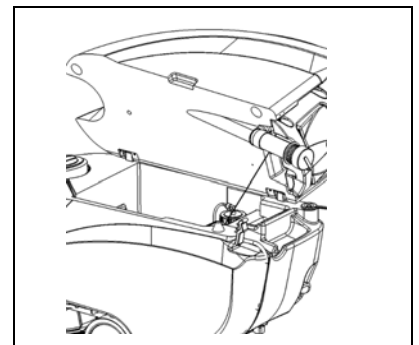


### 10. CHARGING THE BATTERIES WITH AN EXTERNAL BATTERY CHARGER

In order not to cause permanent damage to the batteries it is essential to avoid their complete discharge: arrange the recharge within a few minutes of the switching on of the flashing "discharged batteries" signal.



**ATTENTION:** never leave the batteries completely discharged, even if the machine is not being used. Check the battery charger is suitable for the batteries installed, in terms of both capacity and type.



To connect the batteries you must:

1. Make sure the recovery tank is empty, otherwise empty it completely
2. Check that the parking brake is correctly engaged.
3. Make sure that the key switch in the "0" position
4. Move the machine near to the battery charger
5. Lower the squeegee and brush head (see the appropriate chapters)
6. open the rear hinge that closes the upper tank
7. Rotate the tank as far as it will go, using the side handle



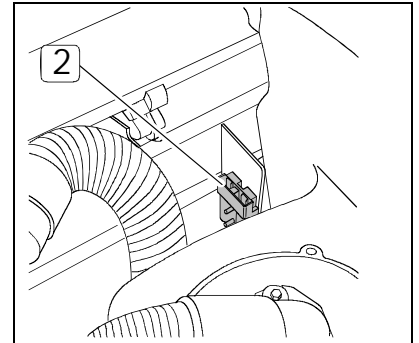
## MACHINE PREPARATION

8. Disconnect the electrical system connector from the battery connector (2)
9. Connect the battery charger connector to the electrical system connector

The coupling connector of the battery charger is consigned inside the bag containing this instruction booklet, and must be assembled on the cables of the battery charger as indicated in the instructions.



**ATTENTION:** this process must be carried out by qualified personnel. An incorrect connection of the connector may cause problems with machine functioning.



10. Connect the recently wired cable to the external battery charger



**ATTENTION:** Carefully read the use and maintenance instructions of the battery charger that is used for charging.



**ATTENTION:** Keep the recovery tank open for the duration of the battery recharging cycle to allow gas fumes to escape

11. After the charging cycle is complete, the battery connector (2) must be connected to the electrical system connector



**ATTENTION:** danger of exhalation of gas and leakage of corrosive liquids



**ATTENTION:** danger of fire: do not go near with free flames

## 11. CHARGING THE BATTERIES WITH A BUILT-IN BATTERY CHARGER

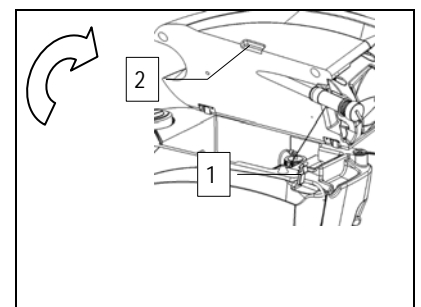
In order not to cause permanent damage to the batteries it is essential to avoid their complete discharge: arrange the recharge within a few minutes of the switching on of the flashing "discharged batteries" signal.



**ATTENTION:** never leave the batteries completely discharged, even if the machine is not being used. Check the battery charger is suitable for the batteries installed, in terms of both capacity and type.

To connect the internal battery charger you must:

1. Make sure the recovery tank is empty, otherwise empty it completely
2. Make sure that the key switch in the "0" position
3. Move the machine near to the battery charger
4. Lower the squeegee and brush head (see the appropriate chapters)
5. Engage the parking brake (see the appropriate chapter)
6. Open the rear hinge that closes the upper tank (1)
7. Rotate the tank as far as it will go, using the side handle (2)



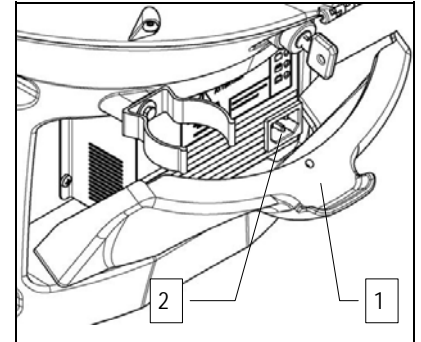


## MACHINE PREPARATION

8. Open the battery charger casing, rotating it towards you (1)
9. Insert the battery charger cable into the socket (2) on the machine
10. Plug the power supply cable of the charger into the mains socket.



**ATTENTION:** For the correct use of the battery charger, follow the instructions in the enclosed booklet.



**WARNING:** the machine is equipped with an automatic system that disconnects the power supply from the electrical system while the batteries are being recharged.

**WARNING:** in order not to cause permanent damage to the batteries it is essential to avoid their complete discharge: arrange the recharge within a few minutes of the switching on of the flashing "discharged batteries" signal.

**WARNING:** never leave the batteries completely discharged, even if the machine is not being used.

**WARNING:** for the daily recharging of the batteries, you must fully respect the indications provided by the manufacturer or retailer. All installation and maintenance operations must be carried out by specialised personnel

**ATTENTION:** make sure the battery charger green LED is on before using the machine again



**ATTENTION:** danger of exhalation of gas and leakage of corrosive liquids



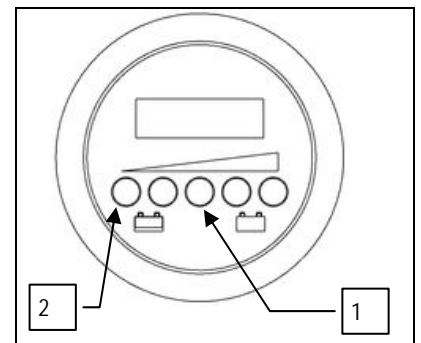
**ATTENTION:** danger of fire: do not go near with free flames

## 12. BATTERY INDICATOR

The battery indicator uses LEDs and has 8 positions (7 green (1) - charged batteries and 1 red (2) - run down batteries).



**WARNING:** a few seconds after the red indicator light comes on, the brush motor switches off automatically. With the remaining charge it is possible to complete the drying process before recharging.



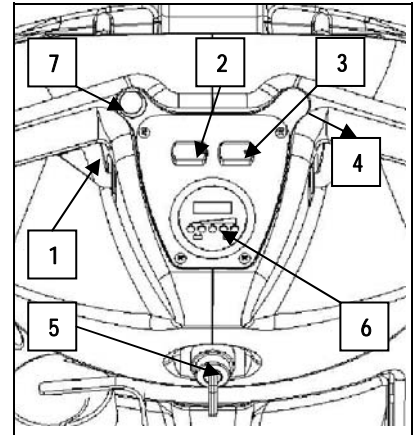


## MACHINE PREPARATION

### 13. INSTRUMENT PANEL COMPONENTS

The instrument panel components are identified as follows:

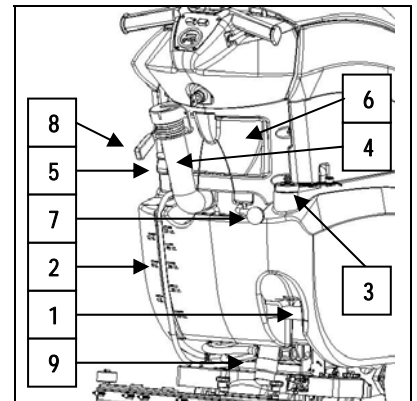
1. Levers to activate brushes/traction (located beneath the grip)
2. Water outlet adjustment switch (FSS Versions)
3. Detergent outlet adjustment switch (FSS Versions)
4. Automatic brush release button (Mx 50 Bt Versions)
5. ON/OFF key switch
6. Battery level / hour-counter display
7. Speed adjustment knob.



### 14. REAR COMPONENTS

The rear components are identified as follows:

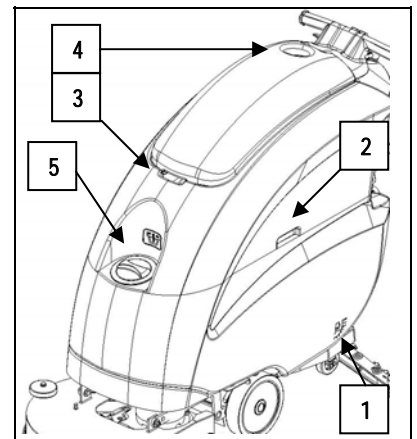
1. Brush lifting pedal
2. Water level tube
3. Solution tank water inlet cap
4. Drainage tube with recovery tank cap
5. Hinge to close the tanks
6. Compartment for battery charger / storage (depending on the model)
7. Squeegee lifting lever
8. Brake lever
9. Solution filter



### 15. FRONT AND SIDE COMPONENTS

The side components are identified as follows:

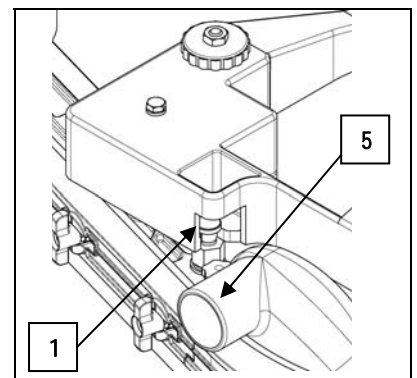
1. Lever for manual regulation of clean water outlet
2. Recovery tank lifting handle
3. Suction unit lifting handle
4. Upper storage compartment
5. Solution water filler cap



### 16. ASSEMBLING THE SQUEEGEE

For packaging reasons, the squeegee is supplied disassembled from the machine, and must be assembled on the machine connection. The squeegee connection must be lifted by means of the lever, then:

1. raise the squeegee and insert the small left-hand column (1) in the connection hole
2. push the connection lever (2) to the left
3. Raise the squeegee and insert the small right-hand column (3) in the connection hole
4. release the connection lever (2) so it is blocked in the flat housing of the small column
5. Insert the suction tube (4) in the appropriate squeegee sleeve (5), ensuring that the tube lies to the right of the lifting cable

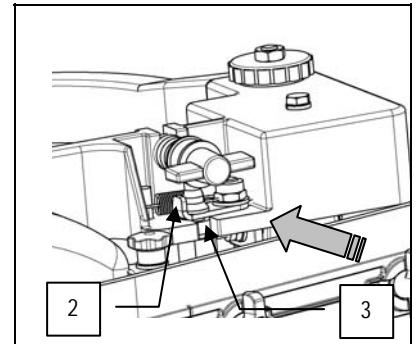




## MACHINE PREPARATION

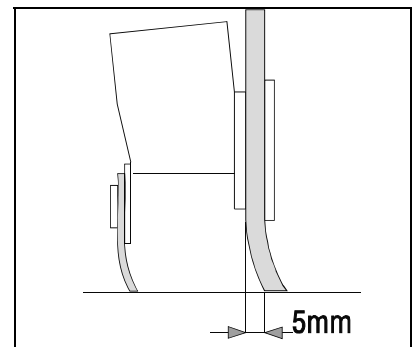


**ATTENTION:** these operations must be carried out using protective gloves to avoid any possible contact with the edges or tips of metal objects



### 17. ADJUSTING THE SQUEEGEE INCLINATION

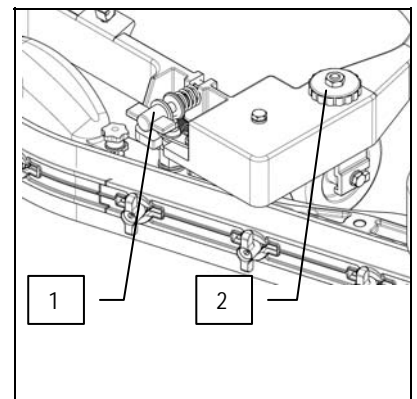
When moving, the rear rubber should be slightly tilted back in a uniform manner at an angle of about 45 degrees to the floor along its entire length of about 5mm. If it is necessary to increase the bend of the rubber in the central part, you must tilt the squeegee backwards, rotating the adjuster (1) anticlockwise. To increase the bend of the rubber at the sides of the squeegee, rotate the set screw clockwise. When fully adjusted, fix the lock nut.



### 18. ADJUSTING THE SQUEEGEE HEIGHT

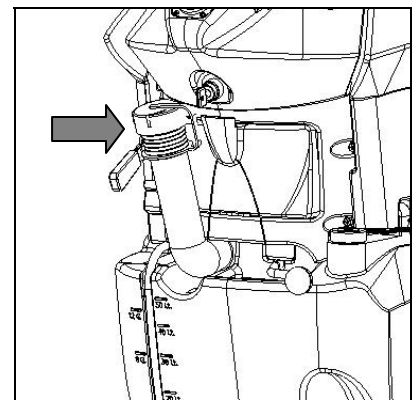
The height of the squeegee must be adjusted on the basis of the state of wear and tear of the rubber. To do this, turn the knob (2) anticlockwise to raise the squeegee, and clockwise to lower it.

**Remarks:** the right and left wheels must be adjusted to the same level, so the squeegee can work parallel to the floor.



### 19. RECOVERY TANK

Make sure the recovery tank is empty, otherwise empty it completely.  
Check the cap of the drainage tube (on the rear of the machine) is correctly closed.



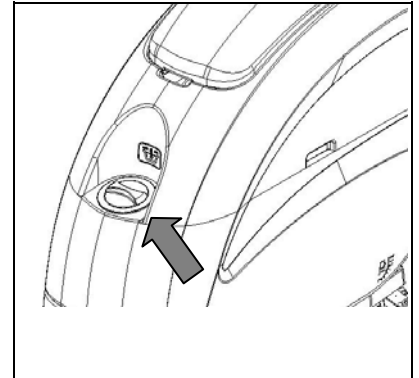




## MACHINE PREPARATION

### 20. SOLUTION TANK

The recovery tank must be completely empty each time the solution tank is filled. Remove the front inlet cap and check the solution filter is correctly fitted. Check the filter cover (beneath the tank) is correctly closed.

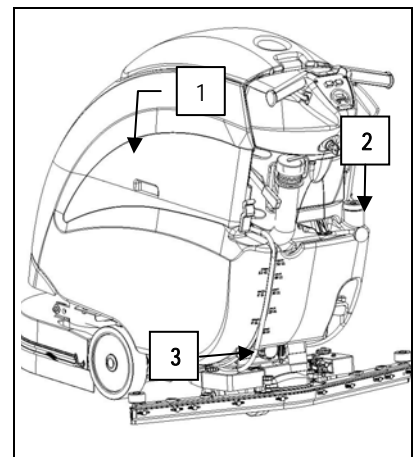


### 21. DETERGENT SOLUTION (VERSIONS WITHOUT FSS)

Fill with clean water at a temperature of not more than 50°C. It is possible to fill the solution tank either from the front mouth (1) with the screw cap, or the rear mouth (2) with the rubber cap; the function of the latter is to sustain the water tube by itself. You can check the quantity in the tank by means of the rear tube (3). Add the liquid detergent into the tank, in the concentration and manner specified by the manufacturer. The formation of excess foam could damage the suction motor, so use only the minimum amount of detergent necessary.



**WARNING:** always use low foam detergent. To avoid the production of foam, before starting to clean, put a minimum quantity of antifoam liquid into the recovery tank. Do not use pure acids.



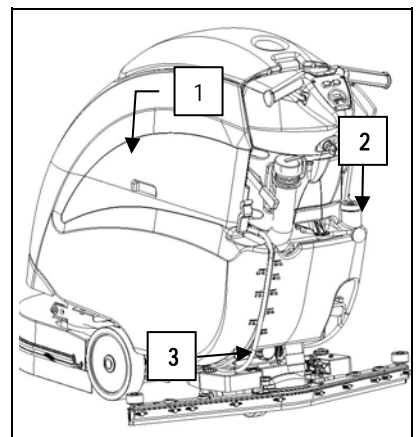
**ATTENTION:** always use detergents whose manufacturer's label indicates their suitability for scrubbing machines. Do not use acid or alkaline products or solvents without this indication. In addition, you are advised to always use low foam detergents. Do not use pure acids or detergents with a stronger gradation than that indicated on the label supplied.



**ATTENTION:** Protective gloves should always be worn before handling detergents or acidic or alkaline solutions to avoid serious injury to hands.

### 22. DETERGENT SOLUTION (VERSIONS WITH FSS)

Fill with clean water at a temperature of not more than 50°C. It is possible to fill the solution tank either from the front mouth (1) with the screw cap, or the rear mouth (2) with the rubber cap; the function of the latter is to sustain the water tube by itself. You can check the quantity in the tank by means of the rear tube (3).



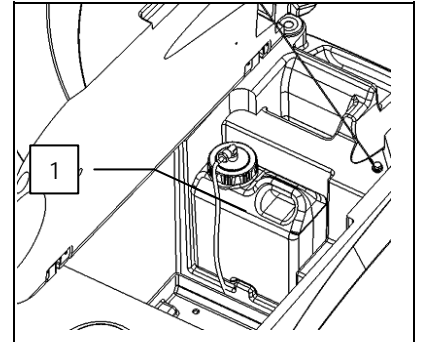


## MACHINE PREPARATION

Fill the tank (1) in the internal compartment behind the battery with liquid detergent according to the directions on the label. Be sure to close the screw cap correctly, to avoid any liquid leaking out during normal machine usage.



**WARNING:** always use low foam detergent. To avoid the production of foam, before starting to clean, put a minimum quantity of antifoam liquid into the recovery tank. Do not use pure acids.



**ATTENTION:** The FSS automatic dosing system is designed to work with any liquid detergent. For this reason, the percentage of detergent in the solution is subject to a maximum error of 5% compared with the nominal value selected.

**ATTENTION:** the metering system is particularly suitable for frequent maintenance cleaning.

Acid or alkaline detergents can be used with pH values between 4 and 10 and that do not contain: oxidising agents, chlorine or bromine, formaldehyde, mineral solvents.

The detergents used must be suitable for use with scrubbing machines. If the system is not used on a daily basis, wash the circuit with water after use. The system can be excluded. In the case of occasional use of detergents with a pH of 1-3 or 11-14, use the scrubbing machine in the traditional way by adding the detergent in the water clean tank and excluding the metering circuit.



**ATTENTION:** always use detergents whose manufacturer's label indicates their suitability for scrubbing machines. Do not use acid or alkaline products or solvents without this indication.

In addition, you are advised to always use low foam detergents. Do not use pure acids or detergents with a stronger gradation than that indicated on the label supplied.



**ATTENTION:** Protective gloves should always be worn before handling detergents or acidic or alkaline solutions to avoid serious injury to hands.



5 lt.	H <sub>2</sub> O 4 lt. + 1lt.
Detergente standard Standard detergent	Detergente concentrato Concentrated detergent
0,5%	0,1%
1%	0,2%
1,5%	0,3%
2%	0,4%
2,5%	0,5%
3%	0,6%
3,5%	0,7%

**MODALITA' D'USO:**  
Inserire la tanica a versare direttamente il detergente nella tanica da 5 litri in dotazione.  
Selezionare, tramite il selettore sul cruscotto, la % diluizione detergente desiderata tra i valori indicati nella tabella.

**INSTRUCTIONS:**  
Insert the can or pour directly the detergent into the 5 liter can. Select with the knob on the instrument panel the dilution % you need among the values indicated in the table.

**MODALITA' D'USO:**  
Venire 1 litro di detergente concentrato e riempire completamente di acqua la tanica da 5 litri in dotazione.  
Selezionare, tramite il selettore sul cruscotto, la % diluizione detergente desiderata tra i valori indicati nella tabella.

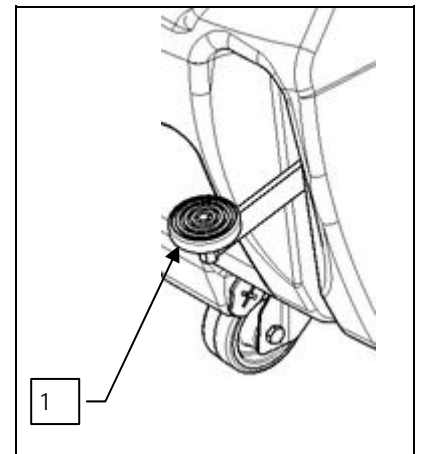
**INSTRUCTIONS:**  
Pour 1 liter concentrated detergent and fill completely the equipped 5 liter can with water. Select with the knob on the instrument panel the dilution % you need among the values indicated in the table.

**pH**  
min 4  
max 10

### 23. BRUSH ASSEMBLY (BRUSH HEAD WITH SINGLE DISC BRUSH)

Proceed as follows to assemble the brush:

1. Raise the brush head by means of the pedal (1).
2. With the brush head up, position the brush in line with the coupling on the machine
3. Lower the brush head by means of the pedal (1) again
4. Turn the key to position "1"





## MACHINE PREPARATION

5. Using the "man present" lever (2), the brush is automatically hooked up.

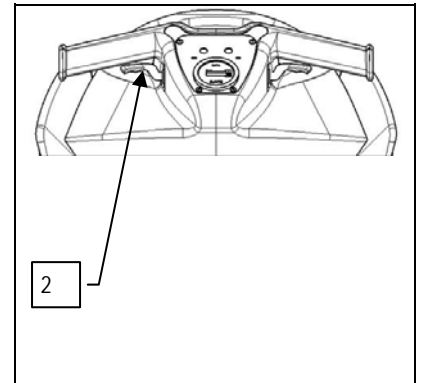


**ATTENTION:** during this operation, check there are no people or objects near the brush.

**ATTENTION:** Check the brush is correctly inserted. If this is not the case, the machine could move in an irregular, sudden manner.



**ATTENTION:** you are advised to always wear protective gloves, to avoid the risk of serious injury to your hands

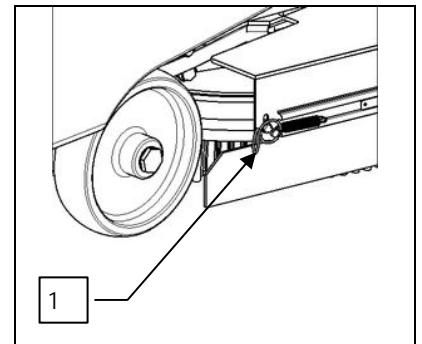


### 24. ASSEMBLY OF SINGLE DISC BRUSH HEAD SPLASH GUARD RUBBER

For packaging reasons, the splash guard rubbers are supplied disassembled from the machine. Remove the hook (1) of the spring from the connector screw on the right side of the brush head, wrap the rubber all around the brush head and position it so that it is symmetrical to the brush. Replace the previously removed strip securing the hook (1) of the spring in the screw connector.



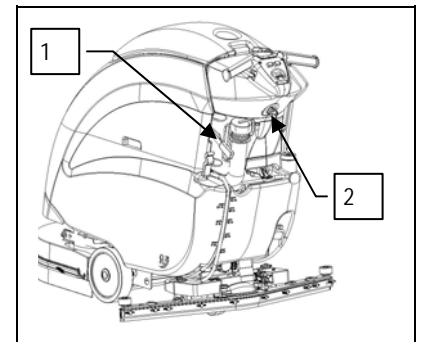
**ATTENTION:** you are advised to always wear protective gloves in order to avoid the risk of serious injury to your hands



### 25. ASSEMBLING THE BRUSH (BRUSH HEADS WITH DOUBLE DISC BRUSH)

Proceed as follows to assemble the brushes:

1. Use the side parking brake lever (1) to stop the machine.
2. Raise the brush head by means of the appropriate pedal
3. Check that the key is in the "0" position (2)
4. With the brush head up, place the brushes into the plate housing beneath the brush head, turning the brushes until the three pins enter the niches in the plate itself; turn until the pin is pushed towards the coupling spring and is locked into place.



The figure shows the rotation direction for coupling the right-hand brush; for the left-hand one, rotate in the opposite direction.

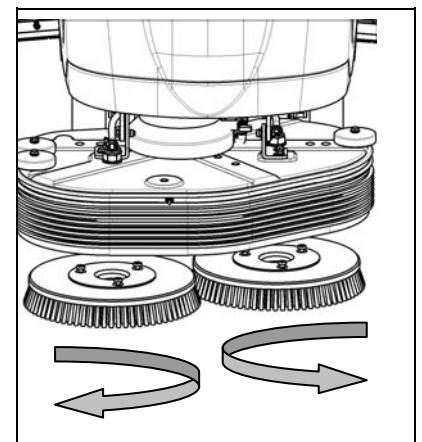


**ATTENTION:** during this operation, check there are no people or objects near the brush.

**ATTENTION:** Make sure the brushes are correctly connected. If this is not the case, the machine could move in an irregular, sudden manner.



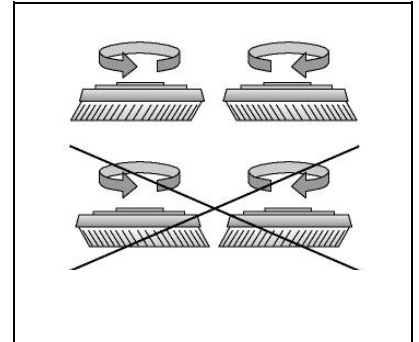
**ATTENTION:** you are advised to always wear protective gloves, to avoid the risk of serious injury to your hands





## MACHINE PREPARATION

5. You are advised to invert the right and left-hand brushes every day. If the brushes are not new however, and have deformed bristles, it is better to reassemble them in the same position (the right-hand one on the right, and the left-hand one on the left), to prevent the different inclination of the bristles producing an overload on the brush motor as well as excessive vibrations.



### 26. ASSEMBLY OF DISC BI-BRUSH HEAD SPLASH GUARD

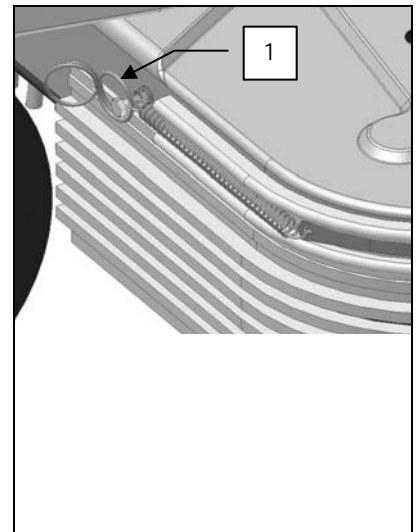
For packaging reasons, the splash guard rubbers are supplied disassembled from the machine. Proceed as follows to assemble the splash guard rubber:

1. Use the side parking brake lever to stop the machine.
2. Remove the rubber retaining strips by slipping off the spring hook (1) from the connecting screw
3. Wind the rubber all around the brush head, inserting the brush head fixing screw in the central hole
4. Reattach the rubber retaining strips starting from the centre of the brush head, attach the spring (1) of the connecting screw

Be careful not to invert the right blade with the left one, as they are not the same.



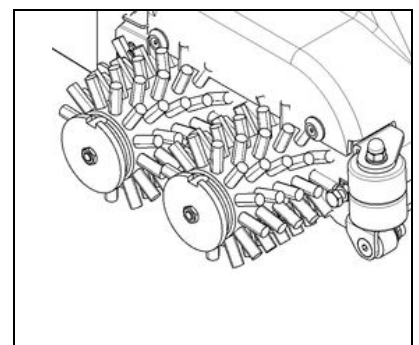
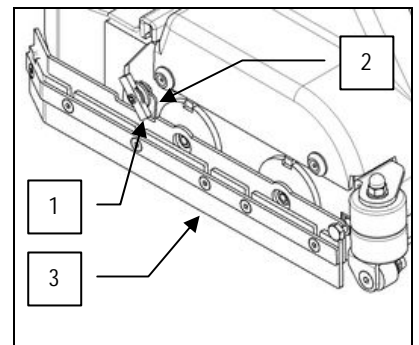
**WARNING:** you are advised to always wear protective gloves in order to avoid the risk of serious injury to your hands



### 27. ASSEMBLING THE BRUSH (BRUSH HEADS WITH CYLINDRICAL BRUSHES) MX 50S

Proceed as follows to assemble the brushes:

1. Use the side parking brake lever to stop the machine.
2. Make sure that the key switch is in the "0" position
3. Raise the brush head by means of the appropriate pedal
4. Loosen the wing nut (1)
5. Rotate the side splash guard (2).
6. Remove the splash guard (3)
7. Remove the idle hubs
8. Insert the brush (the side with 5 teeth) in the tunnel until it is coupled with the dragging device hub.
9. Insert the idle hub of the mobile support in the brush (the side with 6 teeth).
10. Repeat the operation for the second brush.
11. Reassemble the side splash guard (3).
12. Rotate the side splash guard (2).
13. Fix the wing nut (1)





## MACHINE PREPARATION

Take care not to mix up the brushes, the blue brush should always be placed in the rear idle hub.

Take care how the brushes are mounted, the assembly is correct if the direction of the bristles form an X looking from above.

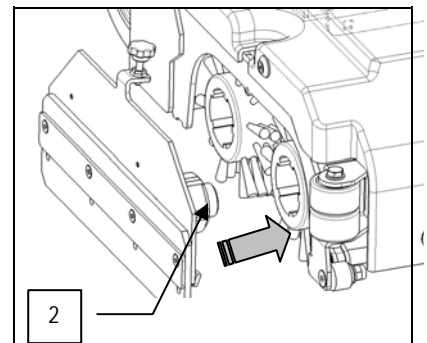
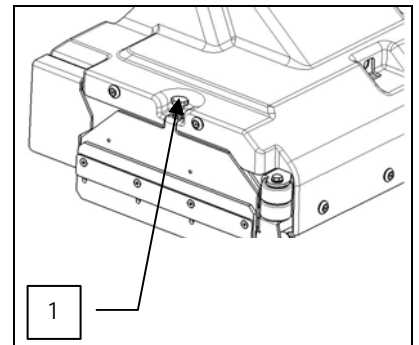


**WARNING:** you are advised to always wear protective gloves in order to avoid the risk of serious injury to your hands

### 28. ASSEMBLING THE BRUSH (BRUSH HEADS WITH CYLINDRICAL BRUSHES) SX 60S

Proceed as follows to assemble the brushes:

1. Use the side parking brake lever to stop the machine.
2. Raise the brush head by means of the appropriate pedal
3. Make sure that the key switch is in the "0" position
4. Remove the right-side splash guard by loosening the knob (1)
5. Insert the brush (the side with 5 teeth) in the tunnel until it couples with the dragging device hub on the opposite side of the tunnel.
6. Insert the idle hub (1) of the mobile support in the brush (the side with 5 teeth).
7. Repeat the operation for the second brush.
8. Reassemble the side splash guard, tightening the knob (1).



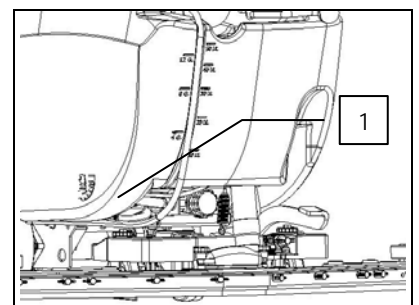
Take care how the brushes are mounted, the assembly is correct if the direction of the bristles form an X looking from above.



**WARNING:** you are advised to always wear protective gloves in order to avoid the risk of serious injury to your hands

### 29. REGULATING THE SOLUTION IN MODELS WITHOUT FSS

Regulate the amount of water by means of the side tap (1).

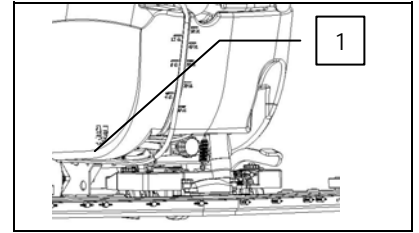




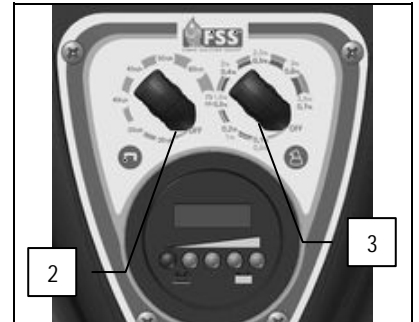
## MACHINE PREPARATION

### 30. REGULATING THE DETERGENT IN MODELS WITH FSS

Adjust the maximum amount of water emission through the side tap (1).



1. Regulate the flow of detergent solution to the brushes by rotating the left-hand knob (2) clockwise. The quantity of solution varies from a minimum of 30 litres/hour to a maximum of 75 litres/hour, with 7 set measurement points. The right solution flow should be proportional to the degree of dirt on the floor. In addition, remember that the time available for continuous working depends on the quantity of water in the tank: for example, work autonomy with a full tank (about 85 litres) and the selector (2) on 30 is about 3 hours.
2. Regulate the percentage of detergent in the solution by rotating the right-hand knob (3) clockwise. The lower value is equal to 0.5% (for standard detergents) or 0.1% (for a concentrated detergent, diluted as indicated on the label supplied with the machine), while the higher value is equal to 3.5% or 0.7%, with 7 set points. Use high detergent percentages to remove very greasy dirt from the floor.

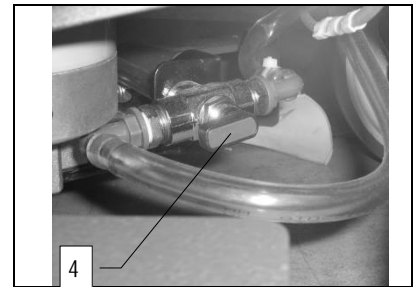


**ATTENTION:** If the FSS system does not work, or you want to clean without using this device, you can intervene on the tap (4) on the brush head near the motor, rotating the lever by 180° as shown in the figure. Rotate the knobs (2) and (3) anticlockwise, to "OFF".

**ATTENTION:** before regulating the solution, check there is detergent in the inner can, and that the side water tap is turned on.

To avoid any tampering with the set regulation, you can remove the two rubber knobs that command the two switches and cover the two holes with the plastic caps supplied with the machine.

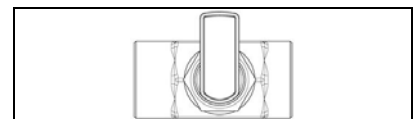
To resolve any anomalies in the FSS system contact the FIMAP assistance service



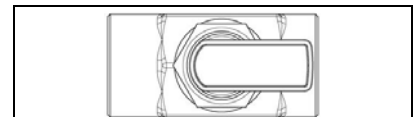
**ATTENTION:** By positioning the tap lever in this way, the FSS dosing system is excluded and the detergent solution is expelled onto the brushes. Rotate the knobs (2) and (3) anticlockwise, to the "0" position.



**ATTENTION:** By positioning the tap lever in this way the detergent is not expelled onto the brushes. Rotate the knobs (2) and (3) anticlockwise, to the "0" position.



**ATTENTION:** By positioning the tap lever in this way the FSS dosing system is on.



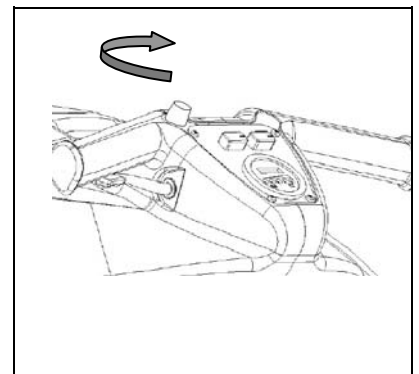
### 31. POTENTIOMETER ADJUSTMENT

Proceed as follows to adjust the forward speed with the potentiometer:

1. Check that the potentiometer knob is placed on minimum.
2. Check that the brush head and squeegee are lifted off the ground
3. Turn the key operated master switch to "ON".
4. Engage the "man present" levers on the handlebars, so the machine starts to move
5. Adjust the desired forward speed by turning the knob gradually clockwise



**WARNING!** The reverse speed was reduced compared to that of forward speed in order to comply with existing safety at work standards. If the potentiometer is adjusted while reversing, the adjustment of the forward speed will be automatically changed.





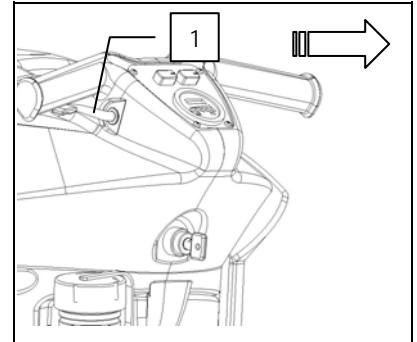
## MACHINE PREPARATION

### 32. REVERSE FUNCTION

To activate the reverse direction, just push the command levers (1) downwards.



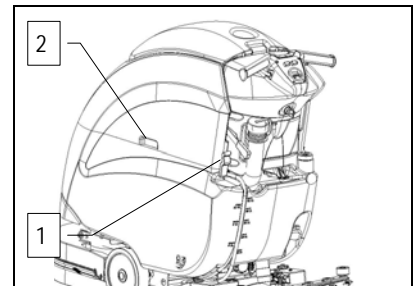
**WARNING:** When moving backwards even for brief moments, check that squeegee is raised, and check the brush head is also raised when the machine is not working.



### 33. PRIMING OF DETERGENT PUMP (VERSIONS WITH FSS)

The detergent pump must be primed before starting work; proceed as follows to do so:

1. Check that the main switch of the machine is set to "Off - 0"
2. Verify that the battery connector is disconnected from the machine connector
3. Check that the parking brake is correctly engaged.
4. Make sure the recovery tank is empty, otherwise empty it completely
5. Disconnect the tank closure hinge (1) By gripping the handle (2) on the left side of the machine, turn the recovery tank

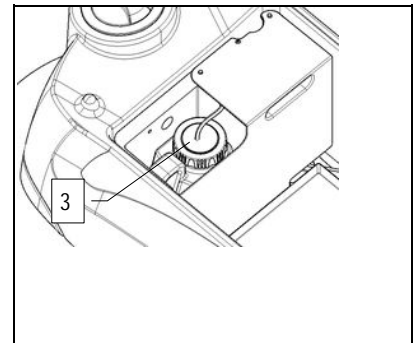


6. Unscrew the cap of the detergent canister (3) and fill it with the desired product

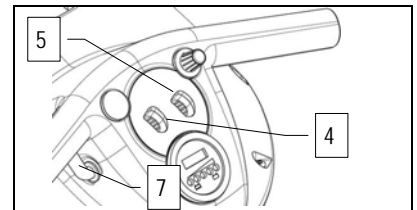


**WARNING:** always use low foam detergent. To avoid the production of foam, before starting to clean, put a minimum quantity of antifoam liquid into the recovery tank. Do not use pure acids.

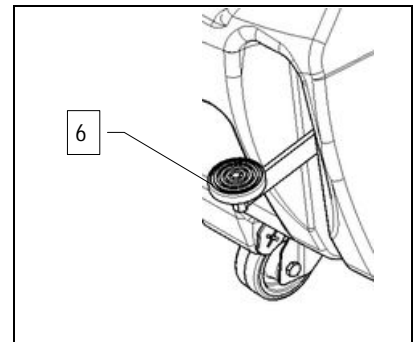
7. Close the cap of the detergent canister, taking care that the suction filter is positioned at the bottom of the canister
8. Make sure there is clean water in the solution tank



9. Check that the tap lever is fully opened, the lever is positioned at the rear of the machine.
10. Verify that the bypass tap is in the "dosing system" position
11. Turn the water flow adjustment knob (4) to its maximum position
12. Turn the detergent percentage adjustment knob (5) to its maximum position
13. Connect the battery connector to the machine connector.
14. Set the main switch to the "ON - I" position
15. Disengage the parking brake



16. Lower the brush head body by means of the pedal (6)
17. Activate the dead man's levers (7) to allow the operation of the brush head and the dosing system
18. Wait a few moments keeping the dead man's levers pressed (normally 20 to 40 seconds) to allow the insertion of the system
19. Proceed with the desired adjustment for normal cleaning



**WARNING:** During this operation the machine will deliver the solution



## WORK

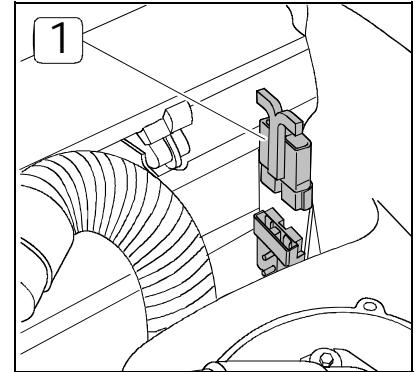
### 1. PREPARING TO WORK

1. Make sure that the recovery tank is empty
2. Make sure that the key switch is in the "0" position
3. Connect the battery connector (1) to the machine connector (see related chapter)

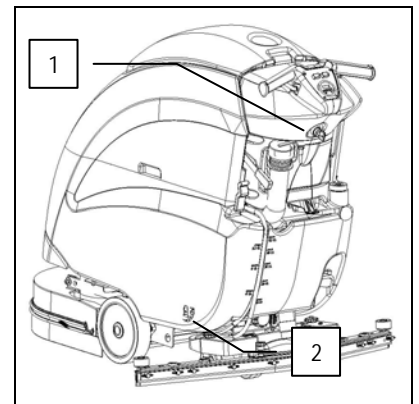
Go directly to section 3 for models with built-in battery charger



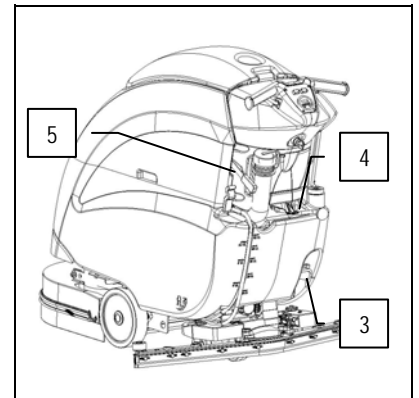
**ATTENTION:** this process must be carried out by qualified personnel. An incorrect connection of the connector may cause problems with machine functioning.



4. Turn the key (1) of the main switch to position "1" (clockwise). The battery charge level indicator lights will immediately come on.
5. Version without FSS: Turn on the water tap (2) (the water falls automatically while the brushes are turning).
6. Version with FSS: Open the water tap (2) fully and adjust the amount of solution and the percentage of detergent in the solution using the knobs on the instrument panel.

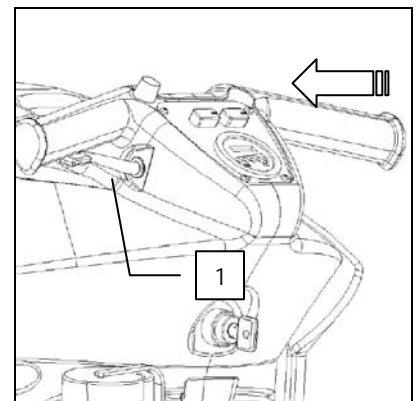


7. Release the lever (3) and lower the brush head.
8. Lower the squeegee, turning the lever (4) anticlockwise. The suction motor will switch on. To switch off the suction motor, turn the key to position "0" once the work is finished
9. Check that the brake (5) is off.



You can increase the pressure on the brush by lifting lever (3) and lock it in the highest position. To return to the original position or with work completed, manually lock the lever by lifting it slightly

10. Turn the speed control knob (1) to set the working speed. If the speed is inadequate, the adjustment knob can be turned even with the machine in motion.
11. Pull the "man present" levers (2) to activate the brushes; the machine will begin to move. During the first metres, check there is sufficient solution and that the squeegee dries perfectly.
12. The machine will now start to work efficiently until the detergent solution runs out.







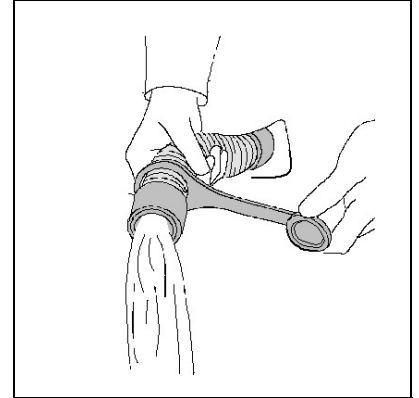
## WORK

### 2. OVERFLOW DEVICE

The machine is fitted with a float which intervenes when the recovery tank is full, causing the suction tube to close. In this case, it is necessary to empty the recovery tank, removing the cap of the rear drainage hose.



**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.



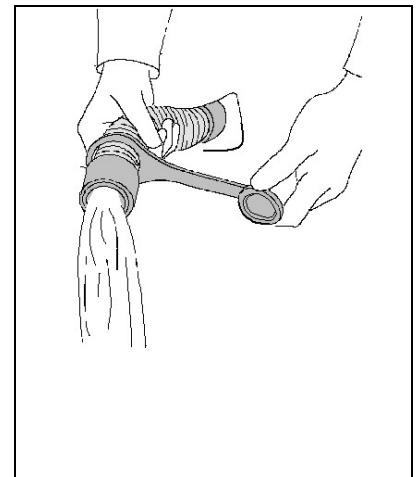
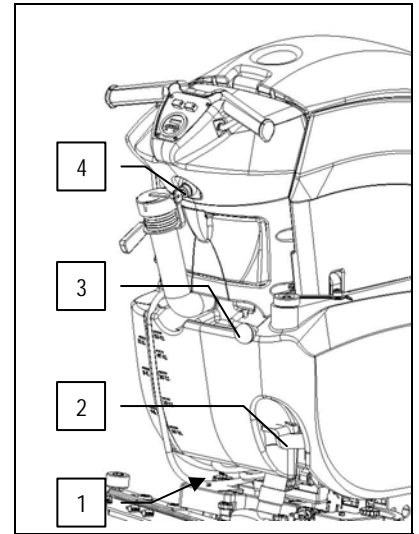


## AT THE END OF THE WORK

### 1. AT THE END OF THE WORK

At the end of the work, and before carrying out any type of maintenance:

1. Close the tap with lever (1) (versions without FSS)
  2. raise the brush head by means of the pedal (2)
  3. raise the squeegee by means of the lever (3)
  4. Turn the key switch (4) to the O position to switch off the suction motor
  5. Turn the key switch to the "1" position
  6. bring the machine to the place provided for draining the water
  7. Turn the key switch to the "0" position
  8. Engage the parking brake
- 
9. Remove the drainage hose from its compartment, unscrew the drainage cap and empty the recovery tank.
  10. The squeegee must be raised when the machine is not operating in order to avoid deforming the rubber blades.
  11. The brush head must be raised when the machine is not operating in order to avoid deforming to the brush.
  12. Disassemble the brushes and clean them with a jet of water (to disassemble the brushes, see the related paragraph)

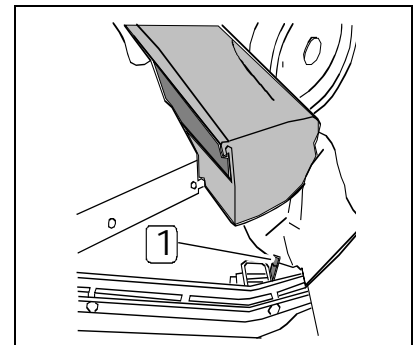


**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.

### 2. EMPTYING THE MX HOPPER

Empty the hopper after work and before performing any type of maintenance, to do so proceed as follows:

1. Push the knob (1) towards the rear of the machine and release the left side splash guard.
2. Extract the hopper, empty and clean it thoroughly
3. reassemble all the elements.
4. Raise the brushing unit at the end of the work, to avoid deforming the brushes.



**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.

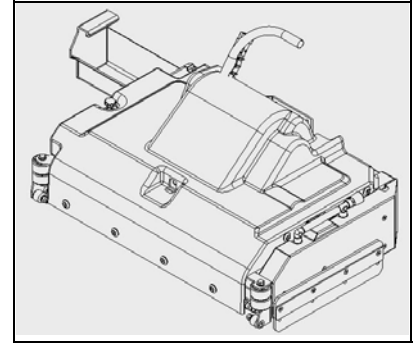


## AT THE END OF THE WORK

### 3. EMPTYING THE SMX HOPPER

Empty the hopper after work and before performing any type of maintenance, to do so proceed as follows:

1. Remove the hopper from the brush head and clean it thoroughly
2. Remove the hopper suction filter and clean it with a continuous jet of water
3. reassemble all the elements.
4. Raise the brushing unit at the end of the work, to avoid deforming the brushes.



**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.

### 3. STORING OF THE MACHINE

Proceed as follows to store the machine at the end of work:

1. Place the machine in a place where it can not cause damage or injury
2. Position the machine where the accidental fall of objects do not cause damage
3. Engage the parking brake
4. Turn the key switch to the "0" position
5. Disconnect the machine connector
6. Lift the brush head and squeegee



## DAILY MAINTENANCE

### PERFORM ALL MAINTENANCE OPERATIONS IN SEQUENCE

#### 1. CLEANING THE RECOVERY TANK

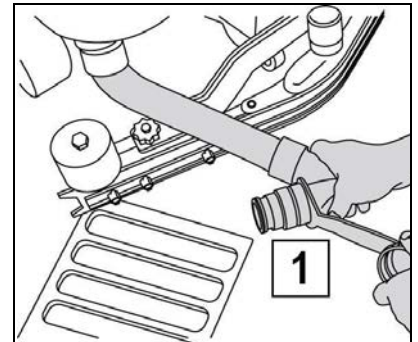
1. Disconnect the tube (1) from its seat, unscrew the drainage cap and empty the recovery tank.



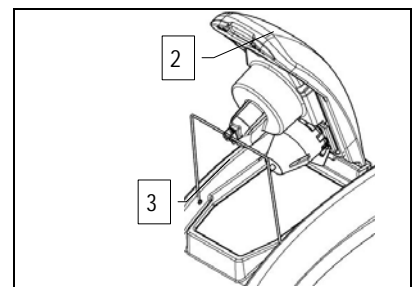
**ATTENTION:** Before performing any maintenance, remove the keys from the panel and disconnect the battery connector of the machine.



**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.



2. Engage the parking brake.
3. Lift the brush head and squeegee from the ground.
4. Raise the cap (2) until the hook is secured to the prop (3) of the recovery tank.
5. Clean and rinse the recovery tank and the suction pipe (connecting pipe between the squeegee and the tank).
6. Reposition the cap on the drainage tube and lower the suction cap. To lock the prop (3) just slightly raise the cap, release the prop (3) and lower the cap up to close it.



#### 2. CLEANING THE SUCTION FILTER

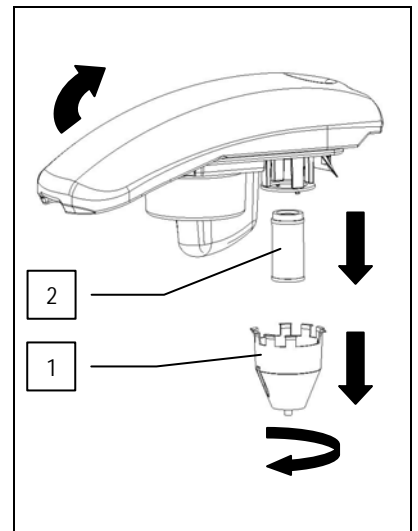
1. Raise the cover.
2. Remove the suction filter (1) protection by rotating it clockwise
3. Pull the filter (2) to remove it
4. Use a jet of water to clean the walls and brush head of the filter.
5. Carry out the cleaning operations carefully
6. reassemble all the elements.



**ATTENTION:** Before performing any maintenance, remove the keys from the panel and disconnect the battery connector of the machine.



**WARNING:** this operation must be carried out by using gloves in order to protect against contact with dangerous solutions



#### 4. CLEANING THE SQUEEGEE

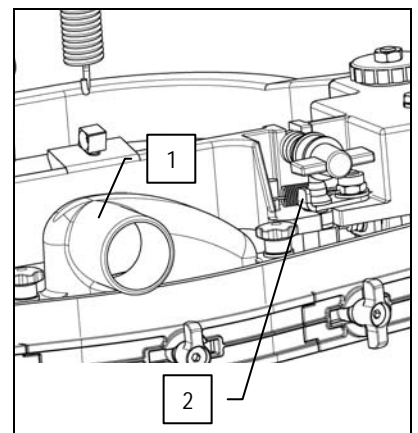
Check the squeegee is always clean, for better drying results.

To clean it you must:

1. Remove the suction tube from the squeegee nozzle (1)
2. remove the squeegee, pushing the plate (2) to the left in order to release the squeegee small column from its seat
3. pull the squeegee to the right until the left-hand small column is released from its seat
4. carefully clean the inside of the squeegee and its suction nozzle
5. carefully clean the squeegee rubbers
6. reassemble all the elements.



**ATTENTION:** Before performing any maintenance, remove the keys from the panel and disconnect the battery connector of the machine.



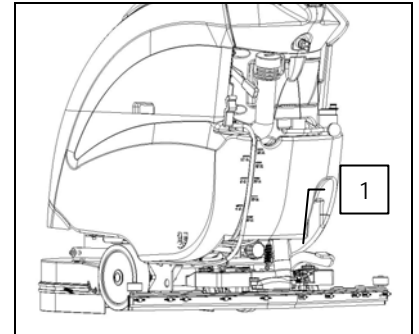


## DAILY MAINTENANCE

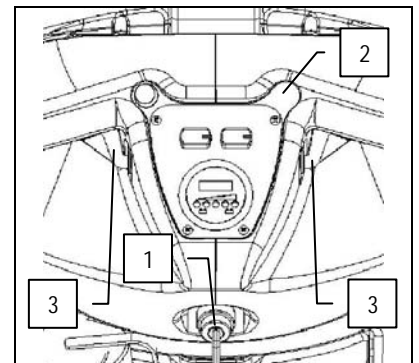
### 5. DISASSEMBLING THE BRUSH (MX 50 BT VERSIONS)

These models feature an automatic brush release system so that the operator does not need to perform awkward operations. Proceed as follows:

1. Keep the brush head slightly up, using the lever (1)



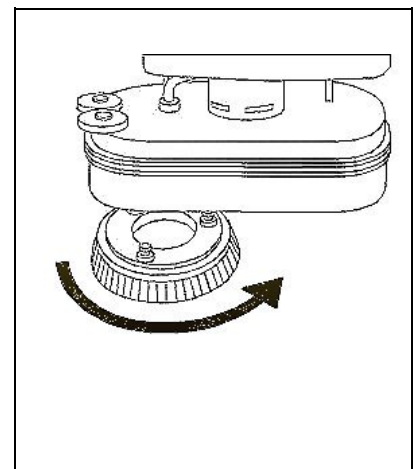
2. Turn the key (1) to position 1
3. Press the brush release button (2)
4. Keeping the release button pressed, push the "man present" lever (3) for a moment then release it; the brush will begin moving for a moment, then fall beneath the brush head



**WARNING:** during this operation, check there are no people or objects near the brush.

### 6. DISASSEMBLING THE BRUSH (BRUSH HEAD WITH DOUBLE BRUSH)

1. Turn the key to position "0"
2. raise the brush head, using the lever
3. with the brush head up, rotate the brush until it comes out of the brush-holder plate seat, as shown in the figure. The figure shows the rotation direction to release the right-hand brush; for the left-hand one, rotate in the opposite direction



**ATTENTION:** Before performing any maintenance, remove the keys from the panel and disconnect the battery connector of the machine.

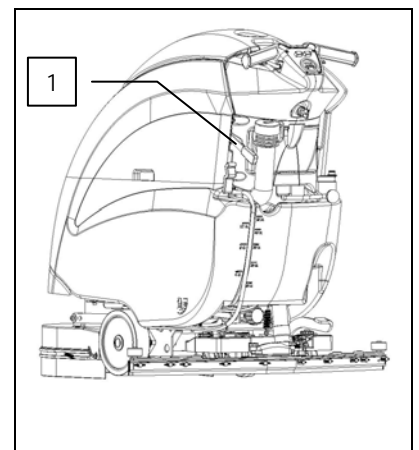


**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.

### 7. DISASSEMBLING THE BRUSH (BRUSH HEADS WITH CYLINDRICAL BRUSHES - MX MACHINES)

To remove the brushes:

1. Turn the key to position "0"
2. apply the brake to the machine, using the side lever (1)

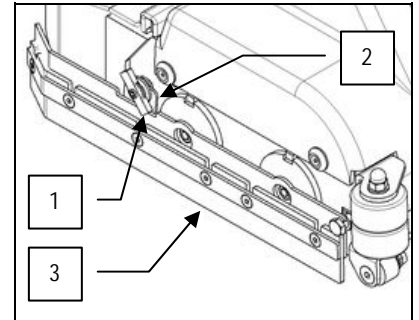


**ATTENTION:** Before performing any maintenance, remove the keys from the panel and disconnect the battery connector of the machine.



## DAILY MAINTENANCE

3. Loosen the wing nut (1)
4. Rotate the side splash guard (2).
5. Remove the splash guard (3)
6. Remove the idle hubs
7. remove the brushes and clean them



**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.

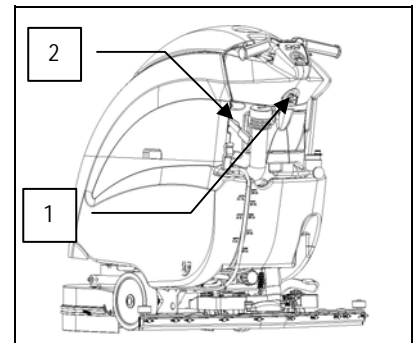
### 8. DISASSEMBLING THE BRUSH (BRUSH HEADS WITH CYLINDRICAL BRUSHES - SMX MACHINES)

To remove the brushes:

1. Turn the key anticlockwise to "0" (1)
2. Stop the machine moving by applying the brake lever (2)

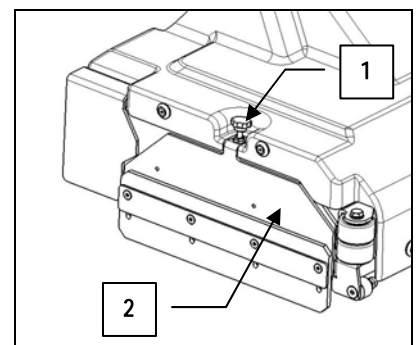


**ATTENTION:** do not leave the machine on sloping or wet floors, and check the parking brake is correctly applied

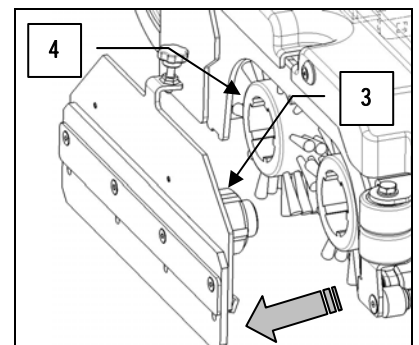


Clean the hopper as described in the "AT THE END OF THE WORK" paragraph

3. Check there are no wires, bits of plastic or anything else at the ends of the brushes; these objects could stop the brushes from rotating freely. If the brushes are not clean:
4. Loosen the knob (1)
5. release the plate (2)



6. remove the plate (2) with the brush support hubs (3)
7. remove the brushes (4), clean them with a jet of water, then reassemble them. Check the bristles are not worn; in the event of excessive wear, replace the brushes (the bristles should be at least 10mm long)
8. reassemble the plate (2), inserting first the hubs (3) in the toothed seat of the brushes and tightening the knob (1)



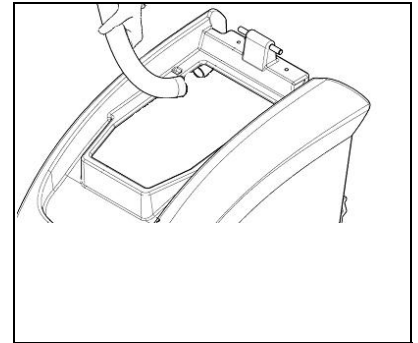


## WEEKLY MAINTENANCE

### 1. CLEANING THE SQUEEGEE TUBE

Every week, or whenever suction seems to be unsatisfactory, check the squeegee tube is not obstructed. To clean it, proceed as follows:

1. Remove the tube from the sleeve of the squeegee
2. Remove the intake pipe filter from its housing (see Daily maintenance).
3. remove the other end from the recovery tank
4. Wash the inside of the tube with a water jet introduced from the side where the pipe is fixed to the tank
5. reassemble the tube



**ATTENTION:** Adopt safety measures to prevent damage to the limbs.

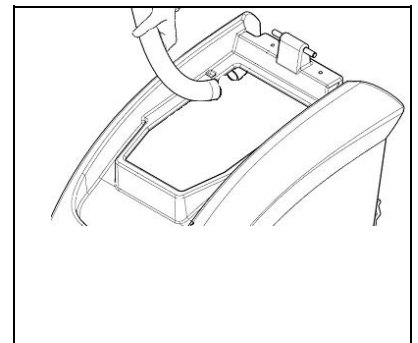


**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.

### 2. CLEANING THE SQUEEGEE TUBE (SMX 60S MODELS)

Every week, or whenever suction seems to be unsatisfactory, check the squeegee tube is not obstructed. To clean it, proceed as follows:

1. Remove the tube from the sleeve of the squeegee
2. Remove the intake pipe filter from its housing (see Daily maintenance).
3. remove the other end from the recovery tank
4. Lift the brush head
5. Remove the hopper
6. Wash the inside of the tube with a water jet introduced from the side where the pipe is fixed to the tank
7. re-assemble the tube



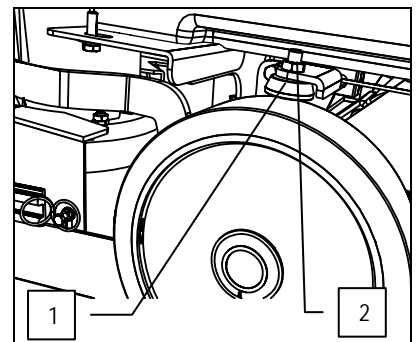
**ATTENTION:** Adopt safety measures to prevent damage to the limbs.



**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.

### 3. CHECKING THE BRAKE

Every week, check the distance between the work brake pads and the wheels. If necessary, adjust them by means of the nuts, so they are at a distance of 3mm when homed.





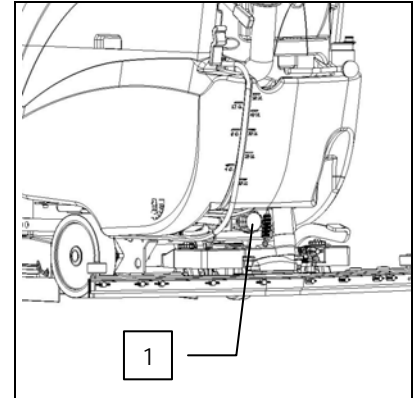
## WEEKLY MAINTENANCE

### 4. CLEANING THE SOLUTION TANK

1. Loosen the front cap of the solution tank.
2. Turn the tap lever clockwise as far as it will go
3. Loosen the drainage cap (1) located on the filter, and empty the tank.
4. Rinse the inside of the tank and the filter cap with a jet of water
5. Retighten the two caps



**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.



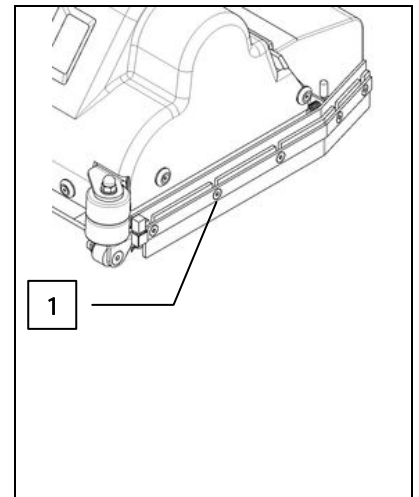
### 5. REPLACING THE BRUSHING BASE SPLASH GUARD (MX VERSION)

To ensure the water is collected efficiently while the machine is working, you should periodically check the state of wear and tear of the side splash guards. When you need to replace them, proceed as follows:

1. with the brush head up, loosen the screws (1) that fix the blocking blade of the splash guard rubber
2. unthread the splash guard rubber and rotate it by 180° in order to replace the worn part with a new one. If the splash guards are worn on both sides, replace them with new rubbers (contact the FIMAP assistance centre)
3. re-assemble everything by carrying out the above-mentioned operations in the reverse order



**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.



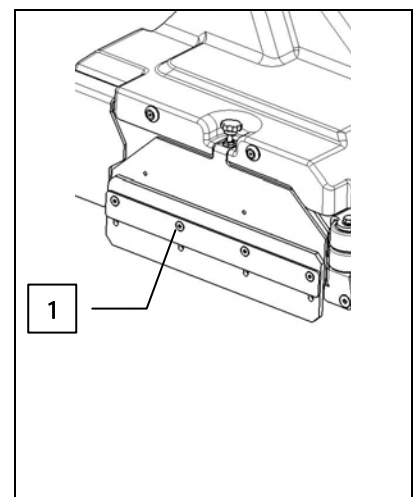
### 6. REPLACING THE BRUSHING BASE SPLASH GUARDS (SMX VERSION)

To ensure the water is collected efficiently while the machine is working, you should periodically check the state of wear and tear of the side splash guards. When you need to replace them, proceed as follows:

4. with the brush head up, loosen the screws (1) that fix the blocking blade of the splash guard rubber
5. unthread the splash guard rubber and rotate it by 180° in order to replace the worn part with a new one. If the splash guards are worn on both sides, replace them with new rubbers (contact the FIMAP assistance centre)
6. re-assemble everything by carrying out the above-mentioned operations in the reverse order



**WARNING:** this operation must be carried out wearing gloves to protect against contact with dangerous solutions.





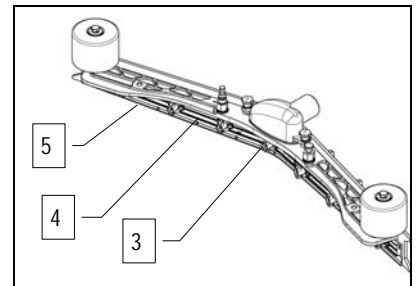
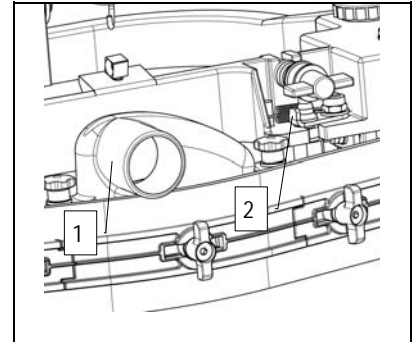


## WEEKLY MAINTENANCE

### 4. REPLACING THE FRONT SQUEEGEE RUBBER

Suction will be poor and the machine will not dry perfectly if the front squeegee rubber is worn. Proceed as follows to replace:

1. Check that the main switch of the machine is set to "Off - 0"
2. Verify that the battery connector is disconnected from the machine connector
3. Check that the parking brake is correctly engaged.
4. Remove the suction hose from the squeegee nozzle (1)
7. remove the squeegee, pushing the plate (2) to the left in order to release the squeegee small column from its seat
5. pull the squeegee to the right until the left-hand small column is released from its seat
  
6. Turn the wing nuts (3) in the horizontal position.
7. Remove the front rubber-pressing blades (4).
8. Remove the rubber (5) and replace it.
9. Proceed in reverse to replace the rubber



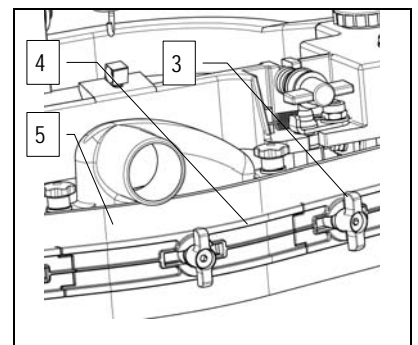
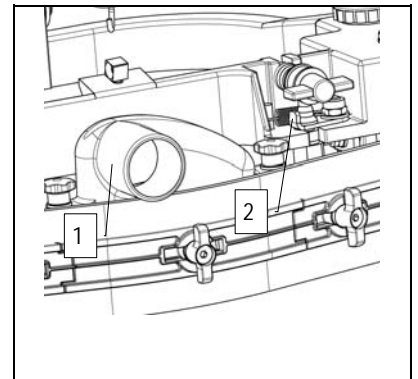
**ATTENTION:** These operations must be carried out using gloves to protect against contact with dangerous solutions

### 5. REPLACING THE FRONT SQUEEGEE RUBBER

If the squeegee rear rubber is worn and does not dry well, it is possible to change the drying edge using one of the 4 edges of the rubber.

This operation can be done both with a squeegee fitted or removed as follows:

1. Check that the main switch of the machine is set to "Off - 0"
2. Verify that the battery connector is disconnected from the machine connector
3. Check that the parking brake is correctly engaged.
4. Remove the suction hose from the squeegee nozzle (1)
5. remove the squeegee, pushing the plate (2) to the left in order to release the squeegee small column from its seat
6. pull the squeegee to the right until the left-hand small column is released from its seat
  
7. Turn the wing nuts (5) in the horizontal position.
8. Remove the front rubber-pressing blades (6).
9. Remove the rubber (7) and replace it.
10. adjust the height of the squeegee depending on the rubber (see "ADJUSTING THE HEIGHT OF THE SQUEEGEE SUPPORT")



**ATTENTION:** These operations must be carried out using gloves to protect against contact with dangerous solutions

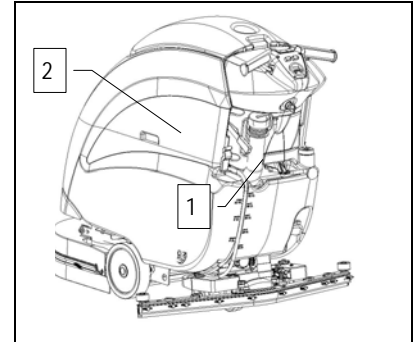


## EXTRAORDINARY MAINTENANCE

### 1. CLEANING THE DOSING SYSTEM (VERSIONS WITH FSS)

The dosing system should be cleaned if the machine is not used for a long period (more than 48 hours), proceed as follows to do so:

1. Check that the main switch of the machine is set to "Off - 0"
2. Verify that the battery connector is disconnected from the machine connector
3. Check that the parking brake is correctly engaged.
4. Make sure the recovery tank is empty, otherwise empty it completely
5. Disconnect the tank closure hinge (1) By gripping the handle (2) on the left side of the machine, turn the recovery tank

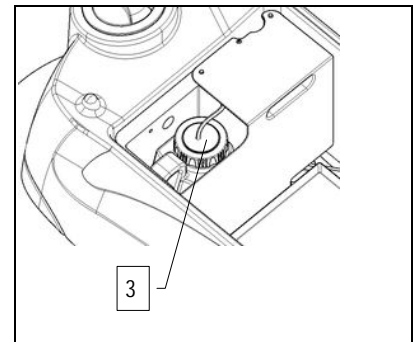


6. Unscrew the cap of the detergent canister (3) and fill it with clean water

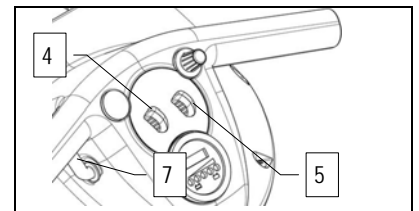


**WARNING:** always use low foam detergent. To avoid the production of foam, before starting to clean, put a minimum quantity of antifoam liquid into the recovery tank. Do not use pure acids.

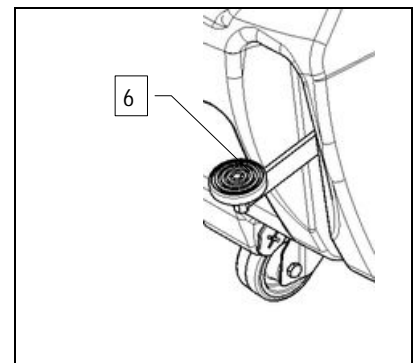
7. Close the cap of the detergent canister, taking care that the suction filter is positioned at the bottom of the canister
8. Make sure there is clean water in the solution tank



9. Check that the tap lever is fully opened, the lever is positioned at the rear of the machine.
10. Verify that the bypass tap is in the "dosing system" position
11. Turn the water flow adjustment knob (4) to its maximum position
12. Turn the detergent percentage adjustment knob (5) to its maximum position
13. Connect the battery connector to the machine connector.
14. Set the main switch to the "ON - I" position
15. Disengage the parking brake



16. Lower the brush head body by means of the pedal (6)
17. Activate the dead man's levers (7) to allow the operation of the brush head and the dosing system
18. Wait a few minutes keeping the dead man's levers pressed (normally 2 to 4 minutes) to allow the cleaning of the dosing system
19. Empty the solution and detergent canister completely
20. Place the machine in the parking area and make it secure



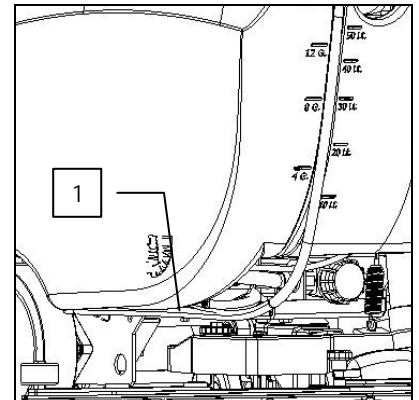
**WARNING:** During this operation the machine will deliver the solution



## TROUBLESHOOTING

### INSUFFICIENT WATER ON THE BRUSH

1. Check the tap – located beneath the symbol – (1) is turned on.
2. Check there is water in the solution tank.
3. Check that the solution tank filter cartridge is clean



### THE MACHINE DOES NOT CLEAN WELL

1. Check the state of wear and tear of the brush and, if necessary, replace it (the brush must be replaced when the bristles are about 15mm long).
2. Use a different kind of brush to the one fitted as standard. For cleaning floors where the dirt is particularly resistant, we recommend the use of special brushes supplied upon request and according to needs (see "CHOOSING AND USING THE BRUSHES").

### THE SQUEEGEE DOES NOT DRY PERFECTLY

1. Check the squeegee rubbers are clean.
2. Adjust the inclination of the squeegee (see "SQUEEGEE" under "MACHINE PREPARATION").
3. Check the suction tube is correctly inserted in its housing on the recovery tank.
4. Check the inner filter of the recovery tank is not dirty and, if necessary, clean it thoroughly.
5. Disassemble the entire suction unit and clean it.
6. Replace the rubbers, if worn.
7. Check the suction motor switch is turned on.
8. Check wheel adjustment.

### EXCESSIVE FOAM PRODUCTION

Check that a low foam detergent has been used. If necessary, add a small quantity of antifoam liquid to the recovery tank.

Remember that, when the floor is not very dirty, more foam is generated. In this case the detergent solution should be more diluted.

### ELECTRIC FUSES AND THERMAL CUT-OUTS

The machine is fitted with the following electrical protection systems:

Power fuses arranged in the electrical box, to protect against short-circuiting

thermal trip units arranged on the outside of the handlebars, to protect the following motors:

1. 30 A trip unit for squeegee
2. 20 A trip unit for suction motor
3. 50 A trip unit for brush head motor (SMX 60S version)

In the event of malfunctioning, check a thermal cut-out has not intervened. If the motor overheats, its thermal cut-out intervenes to block the electricity supply. Wait a few minutes until it has cooled down, then press the specific trip unit button to reactivate the power supply and motor operation.



## DISPOSAL

To dispose of the machine, take it to a demolition centre or an authorised collection centre.

Before scrapping the machine it is necessary to remove and separate the following materials and send them to the appropriate collection centres in accordance with the environmental hygiene regulations currently in force:

- brushes
- filter
- electric and electronic parts\*
- batteries
- plastic parts (tanks and handlebars)
- metal parts (levers and frame)



## CHOOSING AND USING THE BRUSHES

### POLYPROPYLENE BRUSH (PPL)

Used on all types of floors. Good resistance to wear and tear, and hot water (no greater than 60°C). The Polypropylene brush is non-hygroscopic and therefore retains its characteristics even when working in wet conditions.

### NYLON BRUSH

Used on all types of floors. Excellent resistance to wear and tear, and hot water (even over 60°C). The nylon is hygroscopic and so tends to lose its characteristics over time when working in wet conditions.

### ABRASIVE BRUSH

The bristles of this type of brush are charged with highly aggressive abrasives. It is used to clean very dirty floors. To avoid floor damage, work only with the pressure strictly necessary.

### STEEL BRUSH

The bristles are in steel wire. It is used to descale floors that are abrasion-resistant, very irregular or with wide joints.

### THICKNESS OF THE BRISTLES

Thicker bristles are more rigid and are therefore used on smooth floors or floors with small joints.

On uneven floors or those with deep joints, it is advisable to use softer bristles which can enter the gaps more easily.

Remember that when the bristles are worn and therefore too short, they will become rigid and are no longer able to penetrate and clean deep down. In this case, like with overlarge bristles, the brush tends to jump.

### PAD HOLDER

The pad holder is recommended for cleaning shiny surfaces.

There are two types of pad holder:

1. the traditional pad holder is fitted with a series of anchor points that allow the abrasive floor pad to be held and dragged while working
2. the CENTRE LOCK type pad holder not only has anchor points, but also a snap-type central locking system in plastic that allows the abrasive floor pad to be perfectly centred and held without any risk of it becoming detached. This type of dragging device is recommended above all for machines with more than one brush, where the centring of the abrasive discs is difficult.

### TABLE FOR CHOOSING THE BRUSHES

Machine	No. of brushes	Code	Type of bristles	Ø Bristles	Ø Brush	Notes
MX 50	1	414266	PPL	0.4	500	Pad locking
		414267	PPL	0.6	500	
		414269	Abrasive	0.8	500	
		405527	Pad holder	-	500	
MX 50S	2	405639	PPL	0.5	110x500	Front brush
		405640	PPL	0.3	110x500	Rear brush
		405641	Abrasive	0.6	110x500	Front brush
MX 55	2	427709	PPL	0.3	280	Pad locking
		427710	PPL	0.6	280	
		427711	PPL	0.9	280	
		427712	Abrasive	-	280	
		427713	Pad holder	-	280	
MX 65	2	422189	PPL	0.3	340	Pad locking
		422971	PPL	0.6	340	
		422972	PPL	0.9	340	
		422981	Abrasive	1	340	
		422973	Centre Lock floor pad	-	330	
SMX 65	2	422189	PPL	0.3	340	Pad locking
		422971	PPL	0.6	340	
		422972	PPL	0.9	340	
		422981	Abrasive	-	340	
		422973	Centre Lock floor pad	-	330	
SMX 60S	2	425853	PPL	0.8	150x618	
		425854	PPL	0.6	150x618	
		427714	Abrasive	-	150x618	
SMX 75	2	427715	PPL	0.3	380	Pad locking
		427716	PPL	0.6	380	
		427717	PPL	0.9	380	
		427719	Abrasive	-	380	
		427718	Centre Lock floor pad	-	380	



## EC DECLARATION OF COMPLIANCE

The undersigned company:  
**FIMAP S.p.A.**  
Via Invalidi del Lavoro no.1  
37050 Santa Maria di Zevio (VR)  
declares under its sole responsibility that the

### FLOOR SCRUBBER-DRYER

**mod. Mx 50Bt – Mx 50Bts – Mx 55Bt – Mx 65Bt – SMx 60Bts – SMx 65Bt – SMx 75Bt**

comply with the requirements of the following Directives:

- 2004/108/EC: Electromagnetic Compatibility Directive and subsequent modifications.
- 2006/42/EC: Machinery Directive
- 2006/95/EC: Low Voltage Directive

They also comply with the following standards:

- EN 60335-1: Household and similar electrical appliances - Safety. Part 1: Generic norms
- EN 60335-2-72: Household and similar electrical appliances. Part 2: Specific norms for automatic machines for floor treatment for commercial and industrial use
- EN 60335-2-29: Household and similar electrical appliances. Part 2: Specific norms for battery chargers.
- EN 12100-1: Safety of Machinery - Basic concepts, general principles for design - Part 1: Basic terminology and methodology
- EN 12100-2: Safety of Machinery - Basic concepts, general principles for design - Part 2: Technical principles
- EN 55014-1: Electromagnetic compatibility - Regulations for household appliances, electrical devices and similar equipment. Part 1: Emission - Regulations for product family.
- EN 55014-2: Electromagnetic compatibility - Regulations for household appliances, electrical devices and similar equipment. Part 2: Immunity - Regulations for product family.
- EN 61000-6-2: Electromagnetic compatibility (EMC) - Part 6-2: Generic norms – Immunity for industrial environments.
- EN 61000-6-3: Electromagnetic compatibility (EMC) - Part 6-3: Generic norms— Standard emission for residential, commercial and light-industrial environments
- EN 61000-3-2: Electromagnetic compatibility (EMC) - Part 3-2: Limits – Limits for harmonic current emissions (Equipment with input current  $\leq 16$  A per phase).
- EN 61000-3-3: Electromagnetic compatibility (EMC) - Part 3-3: Limits – Restriction of voltage variations and flicker in low voltage power supply systems for devices with a rated current  $\leq 16$  A.
- EN 62233: Household and similar electrical appliances - Electromagnetic fields Methods for evaluation and measurement

The person authorised to compile the technical file:

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Santa Maria di Zevio, 01/07/2010

FIMAP S.p.A.  
Legal representative  
Giancarlo Ruffo