



Operations Manual



Hurricane Mini / Maxi / 450XTT

Automatic Scrubber

Code: 19352-C-AGM / 19355-C-AGM / 19362-C-AGM

Serial #: _____

Date of Purchase: _____

More info : www.dustbane.ca

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2. General Information



Read this manual carefully before carrying out any work on the machine

2.1. Scope of the manual

This manual has been written by the Manufacturer and is an integral part of the machine. It defines the purpose for which the machine has been designed and constructed and contains all the information required by operators. In addition to this manual containing all user information, other publications are available providing specific information for maintenance personnel. Constant respect for the instructions guarantees the safety of the operator and the machine, low running costs and high quality results and extends the working life of the machine. Failure to respect the instructions may lead to damage to the operator, machine, floor being washed and environment.

To find the topic that interests you more rapidly, consult the list of contents at the beginning of the manual. Parts of the text requiring special attention are highlighted in bold and preceded by the symbols illustrated and described here.

In line with the company's policy of constant product development and updating, the Manufacturer reserves the right to make modifications without warning.



Indicates the need for attention in order to avoid a series of consequences that could cause death or damage to the health of the operator.



Indicates the need for attention in order to avoid a series of consequences that could cause damage to the machine or work environment or financial loss.



Indicates particularly important instructions.

2.2. Documentation provided with the machine

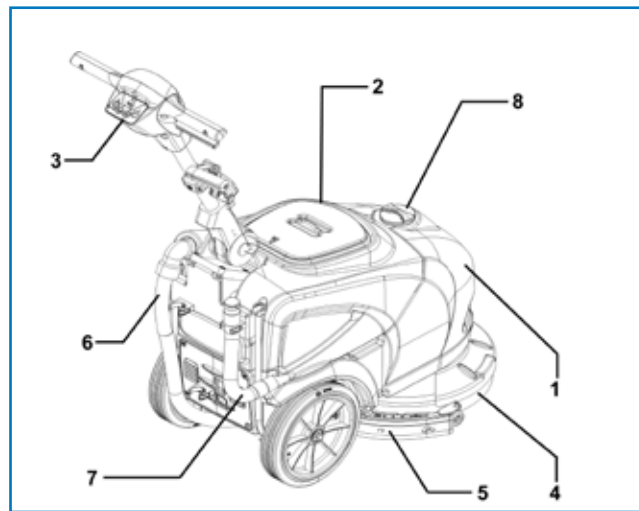
- operator's manual;
- parts list.

3. Technical Information

3.1. General description

This machine is an automatic scrubber (find and replace all) for sweeping, washing and drying flat, horizontal, smooth or moderately rough, even and obstacle free floors in civil and industrial premises. It is available in both battery and cable versions to meet all running time and weight requirements. The automatic scrubber spreads a solution of water and detergent in the correct concentration on the floor and then scrubs it to remove the dirt. By carefully choosing the detergent and brushes (or abrasive disks) from the wide range of accessories available, the machine can be adapted to a wide range of combinations of types of floor and dirt. A suction system incorporated in the machine dries the floor after washing by means of the low pressure generated in the recovery tank by the suction motor. The squeegee connected to the tank collects the dirty water.

3.2. Legend



The main parts of the machine are as follows:

- the solution tank (ref. 1): contains and transports the mixture of clean water and detergent;
- the recovery tank (ref. 2): collects the dirty water picked up from the floor after washing;
- control panel (ref. 3);
- head assembly (ref. 4): the main element is the brush which distributes the detergent solution on the floor and remove the dirt;
- squeegee assembly (ref. 5): wipes and dries the floor by collecting the water.

3.3. Danger zones

Tank assembly: when using certain detergents, danger of irritation for eyes, skin, mucous membranes and respiratory tract and of asphyxia. Danger represented by the dirt collected from the environment (germs and chemical substances). Danger of crushing between the two tanks when the recovery tank is replaced on top of the solution tank.

Control panel: danger of short circuit.

Bottom of washing head: danger due to brush rotation.

Rear wheels: danger of crushing between the wheel and chassis.

Battery compartment (in the solution tank): danger of short circuit between the battery poles and presence of hydrogen during charging.

4. Safety Information

4.1. Safety regulations



Read the “User Manual” carefully before start-up and use or before performing maintenance or any other work on the machine.



Rigorously respect all instructions in the Manual (in particular those relating to danger and important information) and on the safety plates fitted to the machine. The Manufacturer declines all liability for damage to people or things resulting from failure to observe the instructions.

- The appliance must be used exclusively by persons trained in its use and/or who have demonstrated their ability and have been expressly instructed to use the appliance.
- The machine must not be used by minors.
- The machine must not be used for purposes other than those for which it was expressly designed. Scrupulously respect all safety standards and conditions applicable to the type of building in which the machine is to be operated (eg: pharmaceutical companies, hospitals, chemicals, etc).
- Do not use the machine in places with inadequate lighting or explosive atmospheres, on public roads, in the presence of dirt hazardous to health (dust, gas, etc) and in unsuitable environments.
- The machine is designed for indoor use only.
- The machine is designed for temperatures of between +4°C and +35°C when in use and between +0°C and +50°C when not in use.
- The machine is designed to work in a humidity of between 30% and 95%.
- Never use or pick up flammable liquids or explosives (e.g. petrol, fuel oil, etc), flammable gases, dry dusts, acids and solvents (e.g. paint solvents, acetone etc) even if diluted.
- Never pick up flaming or incandescent objects.
- Never use the machine on slopes or ramps of more than 2%. In the case of slight slopes, do not use the machine transversally, always manoeuvre with care and do not reverse.
- When transporting the machine on steeper ramps or slopes, take the utmost care to avoid tipping up and/or uncontrolled acceleration. Tackle ramps and/or steps with the front of the machine raised only.
- Never park the machine on a slope.
- The machine must never be left unattended with the motor on. Before leaving it, turn the motor or engine off, make sure it cannot move accidentally.
- Always pay attention to other people, children in particular, present in the place where you are working.
- Children must be supervised to make sure they do not play with the appliance.
- The appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Never use the machine to transport people or things or to tow things. Do not tow the machine.
- Never rest objects of any weight on the machine for any reason.
- Never obstruct ventilation and heat dispersion slits.
- Never remove, modify or circumvent safety devices.
- Numerous unpleasant experiences have shown that a wide range of personal objects may cause serious accidents. Before beginning work, remove jewelry, watches, ties, etc.
- The operator must always use personal protection devices - protective apron or overalls, non-slip waterproof shoes, rubber gloves, protective goggles and ear protectors and mask to protect the respiratory tract.
- Keep the hands away from moving parts.
- Never use detergents other than those specified. Follow the instructions on the relative safety sheet. We recommend keeping detergents out of reach of children.
- In the event of contact with the eyes, wash immediately with abundant water. If ingested, consult a doctor immediately.
- It is indispensable to respect the battery manufacturer's instructions and current legislation. The batteries should always be kept clean and dry to avoid surface leakage current. Protect the batteries from impurities such as metal dust.
- Never rest tools on the batteries as this could cause short circuit and explosion.
- When using battery acid, always follow the relative safety instructions scrupulously.
- In the presence of particularly strong magnetic fields, assess the possible effect on the control electronics.
- Never wash the machine with water jets.

- The fluids collected contain detergent, disinfectant, water and organic and inorganic material. They must be disposed off in accordance with current legislation.
- In the case of malfunction and/or faulty operation, turn the machine off immediately (disconnecting it from the batteries) and do not tamper. Contact a service center authorized by the Manufacturer.
- All maintenance operations must be performed in an adequately lit place and only after disconnecting the machine from the power supply in battery models by disconnecting the battery connector;
- All work on the electrical system and all maintenance and repair operations other than those explicitly described in this manual must be performed by specialized personnel expert in the sector only.



Special waste. Do not dispose of with ordinary waste.

5. Handling And Installation

5.1. Lifting and transporting the packaged machine



Important

During all lifting operations, make sure the packaged machine is firmly anchored to avoid it tipping up or being accidentally dropped.

Always load/unload lorries in adequately lit areas.

The machine, packaged on a wooden pallet by the Manufacturer, must be loaded using suitable equipment onto the transporting vehicle. At destination, it must be unloaded using similar means.

A fork lift truck must always be used to lift the packaged body of the machine. Handle with care to avoid knocking or overturning the machine.

5.2. Checks on delivery

When the carrier delivers the machine, make sure the packaging and machine are both whole and undamaged. If the machine is damaged, make sure the carrier is aware of the damage and before accepting the goods, reserve the right (in writing) to request compensation for the damage.

5.3. Unpacking



Important

When unpacking the machine, the operator must be provided with the necessary personal protection devices (gloves, goggles, etc) to limit the risk of accident.

Unpack the machine as follows:

1. cut and remove the plastic straps using scissors or nippers;
2. open the packaging;
3. remove the bags included in the packaging and check the contents:
 - guarantee slip;
 - use and maintenance manual;
 - battery bridges with terminals (battery model only);
 - battery charger connector (battery models only);

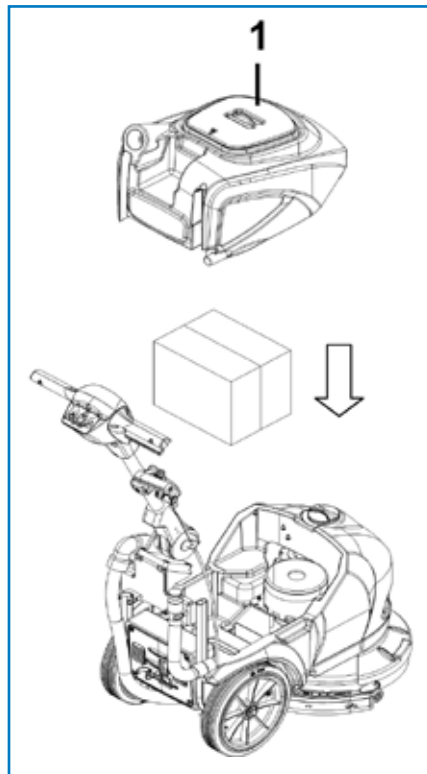
4. remove the machine from the packaging;
5. clean the outside of the machine in respect of safety regulations;
6. after unpacking the machine, install the batteries (battery models) See relevant sections.

The packaging may be kept as it can be reused to protect the machine if it is moved to another site or to a repair workshop.

Otherwise it must be disposed off in compliance with current legislation.



Check that all switches on the control panel are in the “0” (off) position. Make sure you connect the terminals marked with a “+” to the positive poles of the battery. Do not check the battery charge by sparking. Meticulously follow the instructions given below as short circuiting the batteries could cause them to explode.



- Make sure the recovery tank is empty and empty if necessary (see relevant paragraph).
- Lift the recovery tank (ref. 1) off the solution tank by pulling it upwards, making sure you have previously removed the suction hose and recovery tank drain hose from their housings.
- Place the batteries in the battery compartment.



Mount the batteries on the machine using lifting means suitable for their weight. The positive and negative poles have different diameters.

1. Connect the battery wiring and bridge terminals to the battery poles. Tighten the terminals on the poles and cover with Vaseline.
2. Put the recovery tank back on the solution tank.

5.3.1. Batteries: removal



When removing the batteries, the operator must be equipped with suitable personal protection devices (gloves, goggles, overalls, safety shoes, etc) to reduce the risk of accidents. Make sure the switches on the control panel are in the “0” position (off) and the machine is turned off. Keep away from naked flames, do not short circuit the battery poles, do not cause sparks and do not smoke.

Proceed as follows:

1. Disconnect the battery wiring and bridge terminals from the battery poles.
2. If necessary, remove the devices fixing the battery to the base of the machine.
3. Lift the batteries from the compartment using suitable lifting equipment.

5.4. Battery charger (battery models)



Never allow the batteries to become excessively flat as this could damage them irreparably.

5.5. Lifting and transporting the machine



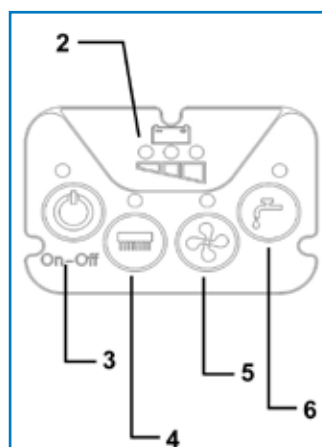
All phases must be performed in an adequately lit room and adopting the safety measures most appropriate to the situation. The operator must always use personal protection devices.

To load the machine onto a means of transport, proceed as follows:

1. empty the dirty water and solution tanks;
2. place the machine in the packaging, then rest the packaging on a pallet and fix it with plastic straps;
3. lift the pallet (with the machine) using a fork lift truck and load it onto the means of transport;
4. anchor the machine to the means of transport with cables connected to the pallet and machine itself.

6. Practical Guide For The Operator

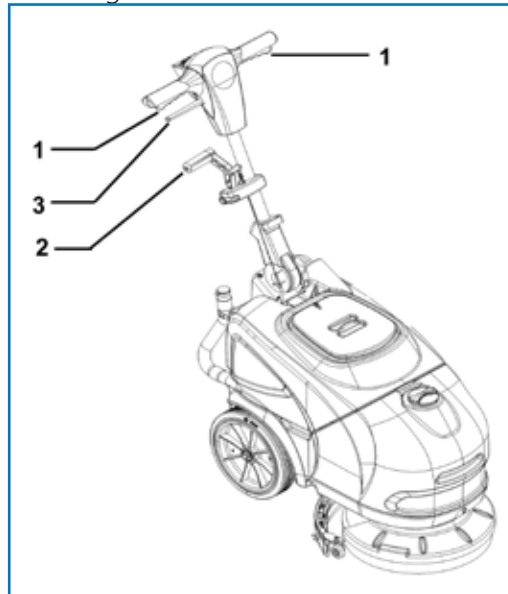
6.1. Controls – Description



The machine has the following controls and indicator lights:

- **Battery charge light** (ref. 2): 3 LEDs (red, yellow and green) which indicate the level of battery charge. There may be:

- a) red, yellow and green LEDs on: battery voltage >24V;
- b) red and yellow LEDs on: battery voltage <24V;
- c) red LEDs on: battery voltage <23V;
- d) red LED flashing: battery voltage <21.5V, batteries completely flat; after a few seconds the brush and suction motor shut down;
- **Main Switch** (ref. 3): enables and disables electrical power to all machine functions (to turn the machine off, hold the button down for at least 4 seconds).
- **Brush button with light** (ref. 4): enables (LED on) and disables (LED off) the “brush” function. The brush does not start rotating until the brush lever is operated.
- **Suction button with light** (ref. 5): turns the suction motor on (LED on) and off (LED off) to dry the floor being washed. The light is on when there is power to the suction motor.
- **Detergent button** (ref. 6): enables (LED on) and disables (LED off) detergent flow. The detergent does not flow unless the brush is rotating.

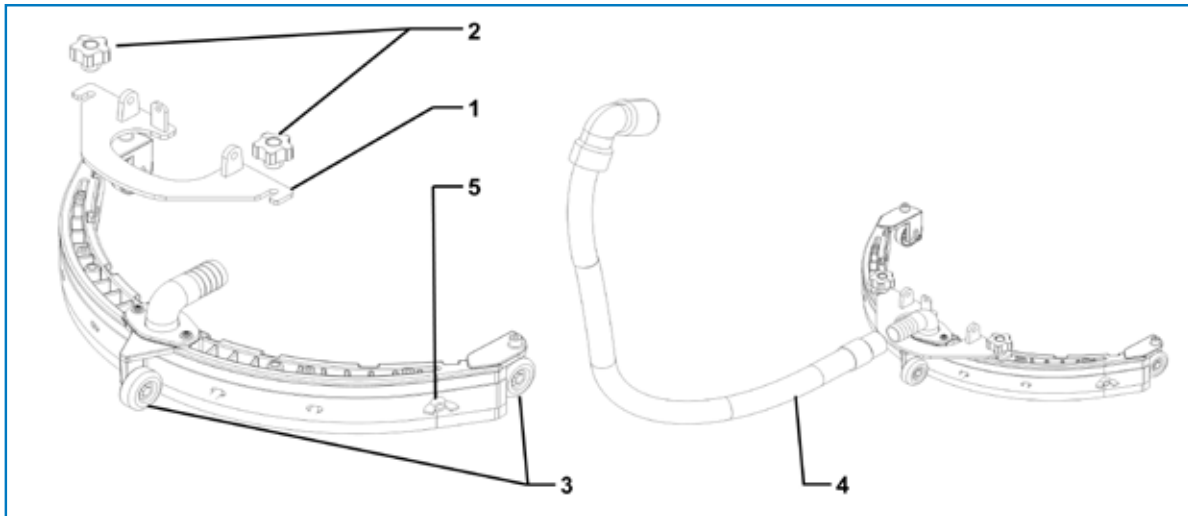


- **Brush lever** (ref. 1): enables brush rotation.
- **Squeegee lever** (ref. 2): raises (if lowered) or lowers (if raised) the squeegee.
- **Handle regulation lever** (ref. 3): allows the angle of the handle to be adjusted.

6.2. Mounting and adjusting the squeegee

The squeegee is responsible for the first phase of drying.

To mount the squeegee on the machine, proceed as follows:



1. check that the squeegee mount is lowered, otherwise lower it by means of the squeegee lever;
2. rotate the machine backwards and rest the handle on the floor;
3. insert the two threaded pins on the squeegee into the slots on the support;
4. fix the squeegee by tightening the two knobs;
5. insert the sleeve of the suction hose fully into the squeegee; The squeegee blades scrape the film of water and detergent from the floor and prepare the way for perfect drying. With time, the constant rubbing makes the edge of the blade in contact with the floor rounded and cracked, reducing the drying efficiency and requiring it to be replaced. The state of wear should be checked frequently. For perfect drying, the squeegee must be adjusted in such a way that the edge of the rear blade bends during operation by about 45° with respect to the floor at every point. Adjust the height of the blade during operation by regulating the height of the wheels positioned behind and alongside the squeegee (ref. 3).

6.3. Moving the machine when not in operation

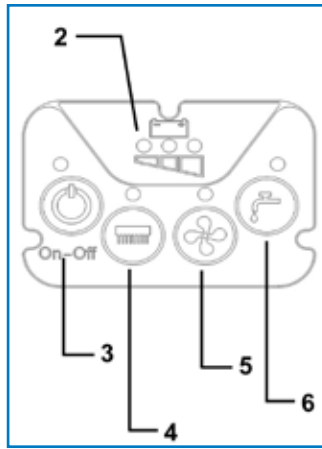
To move the machine, proceed as follows:

1. lift the squeegee using the squeegee lever;
2. raise the front of the machine by levering on the handle and move it to the destination;
3. on arrival, lower the front of the machine.

6.4. Mounting and changing the brush/drive disks



Never work without the brushes and drive disks correctly installed.



Brush attachment: turn the machine on by pressing the main switch (ref. 3) (LED on), then press the brush button (ref. 4 (LED on). Rest the brush on the floor in front of the machine. Raise the front of the machine by levering on the handle, then lower it onto the brush, centering it with the brush cover. Operate the brush lever repeatedly until the brush automatically engages on the flange hub. If the maneuver is not successful, press on the handle again and repeat the centering and repeated operation of the brush lever.

Brush release: turn the machine on by pressing the main switch (ref. 3) (LED on), then press the brush button (ref. 4 (LED on). Raise the front of the machine by levering on the handle, then operate the brush lever repeatedly. After a few pulses, the brush (or drive disk) is released and falls to the ground.

6.5. Detergents - Instructions



Always dilute the detergent according to the manufacturer's instructions. Do not use sodium hypochlorite (bleach) or other oxidants, particularly in strong concentrations. Do not use solvents or hydrocarbons. The temperature of the water and detergent must not exceed the maximum indicated in the technical specification. They must be free of sand and/or other impurities.

The machine has been designed for use with low-foam biodegradable detergents made specifically for scrubber dryers.

For a complete and up-to-date list of the detergents and chemicals available, contact the Manufacturer.

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

Follow the safety regulations on use of detergents given in the section "Safety regulations".

6.6. Preparing the machine for work



Before starting work, wear overalls, ear protectors, non-slip waterproof shoes, mask to protect the respiratory tract, gloves and all other personal protection devices recommended by the supplier of the detergent used or necessitated by the work environment.

Before starting work, proceed as follows:

1. check the battery charge (charge if necessary);
2. make sure the recovery tank is empty. If necessary, empty it;
3. via the opening at the front, fill the solution tank with a suitable concentration of clean water and low-foam detergent. Leave at least 5 cm between the surface of the liquid and the opening of the tank;
4. mount the most suitable brushes or drive disks for the floor and work to be performed;
5. make sure the squeegee is firmly attached and connected to the suction hose. Make sure the back blade is not worn.



If you are using the machine for the first time, we recommend trying it on a large obstacle-free surface first to acquire the necessary familiarity.
Always empty the dirty water tank before filling the detergent tank again.

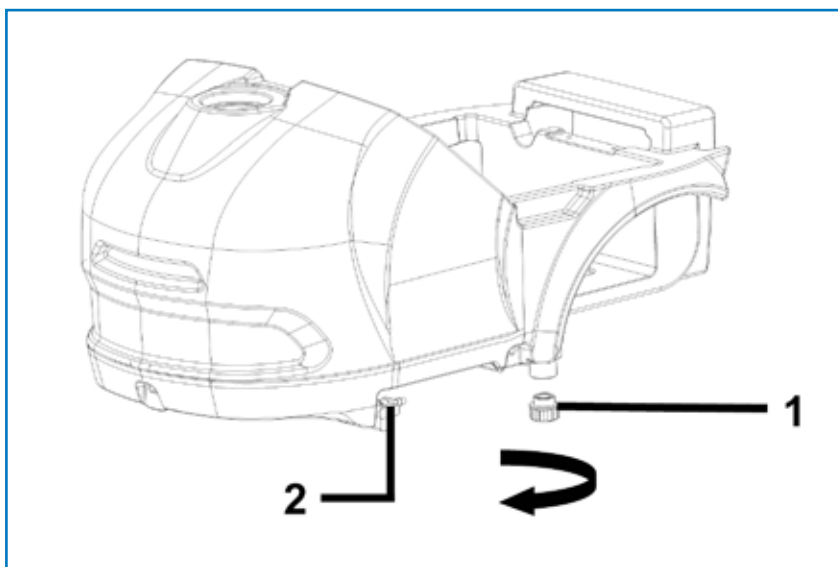
For effective cleaning and to extend the working life of the machine, follow a few simple rules:

- prepare the work area by removing all possible obstacles;
- begin working from the furthestmost point to avoid walking on the area you have just cleaned;
- choose the straightest possible working routes;
- divide large floors into parallel rectangular sections;
- if necessary, finish off by passing a mop or rag rapidly over parts inaccessible to the automatic scrubber.

6.7. Working

After setting up the machine, proceed as follows:

1. lower the squeegee by means of the squeegee lever;
2. press the main switch (LED on);
3. press the brush button (LED on)”, the suction motor and detergent flow are also activated automatically;
4. press the brush lever;
5. check regularly that detergent is reaching the brushes and top up if necessary;
6. while working, check the quality of washing and adjust the flow of detergent to the brushes using the solution tap (ref. 2).



Empty the dirty water tank each time you fill the solution tank.

- The float switch in the recovery tank turns suction off when the tank is full. If the switch trips, stop work and empty the tank.
- If the red LED starts flashing, the batteries are nearly flat. After a few seconds, the brush and suction motor shut down to prevent draining the batteries excessively. Charge the batteries.

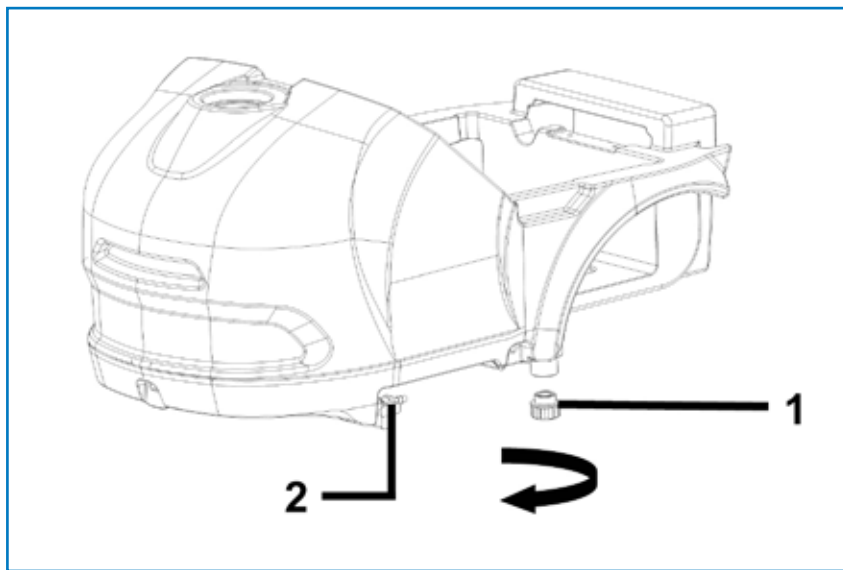
At the end of work:

1. release the brush lever;
2. press the detergent button (LED off);
3. press the brush button (LED off);
4. lift the squeegee lever to raise the squeegee from the floor to prevent the continuous pressure from warping the blades;
5. press the suction button (LED on) and brush lever to start suction. Allow the suction to run for 2 minutes, then release the brush lever and press the suction button (LED off) to turn the motor off;
6. turn the machine off by pressing the button for at least 4 seconds;
7. remove the brush (or drive disk) to prevent it from warping permanently;
8. depending on the model, unplug from the mains socket or disconnect the batteries
9. empty and clean the recovery tank.

6.8. Some useful tips to get the most from your automatic scrubber

In the event of particularly stubborn dirt on the floor, washing and drying can be performed in two separate operations.

6.8.1. Prewashing with brushes or pads



1. press the main switch (LED on);
2. press the brush button (LED on);
3. press the suction button (LED off) to turn suction off;
4. operate the brush lever to enable brush rotation;
5. make sure the suction motor is off and the squeegee is raised;
6. begin washing.
7. adjust the flow of solution to the brush by means of the solution tap (ref. 2).
Flow speed must be regulated according to the operator's chosen advance speed.
The slower the machine moves forwards, the less water is needed.
Persist when washing particularly dirty points to give the detergent time to perform its chemical action detaching and suspending the dirt and the brushes time to exert an effective mechanical action.

6.8.2. Drying

Lower the squeegee and with the suction motor on, pass over the same area washed previously. The result is equivalent to in-depth washing and subsequent ordinary maintenance will take less time. To wash and dry at the same time, operate the brush, detergent flow, squeegee and suction motor simultaneously.

6.9. Draining the dirty water



Use suitable personal protection devices.

Drain the water with the machine disconnected from the power supply.

The recovery tank drain hose is at the back of the machine on the right.

To empty the tank:

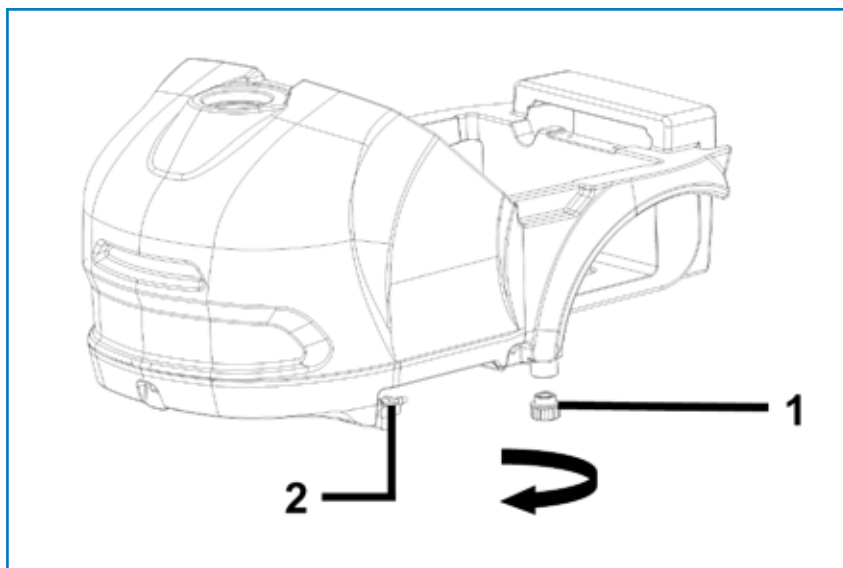
1. move the machine near a drain;
2. detach the drain hose from its seat by holding it near the fixing spring and pulling horizontally;
3. keeping the end of the hose as high as possible and remove the cap;
4. lower the end of the hose gradually, controlling the intensity of the flow of water by adjusting the height from the ground;
5. check the amount of dirt left in the recovery tank and if necessary wash it out;
6. close the drain hose with the cap, check that it is tightly closed and replace the hose in its housing;
7. you are then ready to wash and dry again.

6.10. Draining the clean water



Use suitable personal protection devices.

Drain the water with the machine disconnected from the power supply.



To empty the tank:

- move the machine near a drain;
- remove the cap (ref. 1);
- when the solution tank is completely empty, replace the cap (ref. 1)



The water and detergent solution can also be used to wash the dirty water tank.

7. Periods Of Inactivity

If the machine is not used for some time, remove the squeegee and brush (or drive disk), wash them and put them away in a dry place (preferably in a bag or wrapped in plastic film) away from dust.

- Make sure the tanks are completely empty and perfectly clean.
- Disconnect the machine from the power supply (depending on the model, unplug from the mains or disconnect the connector from the battery wiring).
- Charge the batteries completely before storing them. During long periods of inactivity, you should charge the batteries regularly (at least once every two months) to keep them constantly at maximum charge.



If you do not charge the batteries regularly, they may be irrevocably damaged.

8. Battery Maintenance And Charging



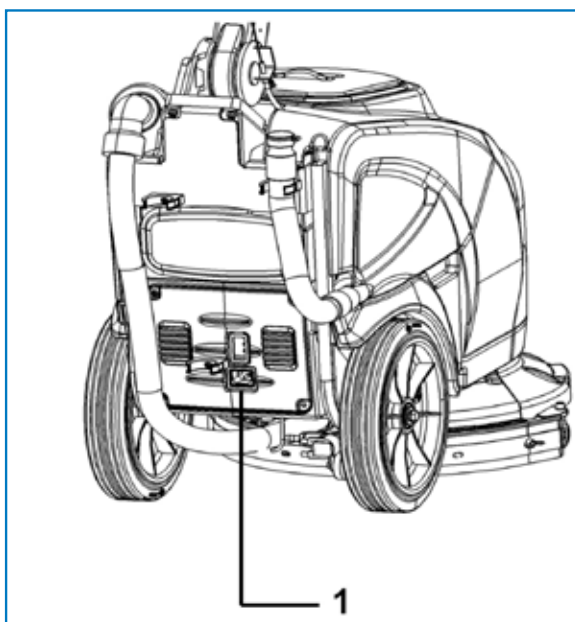
Do not check the batteries by sparking.

The batteries give off flammable fumes. Put out all fires and hot embers before checking or topping up the batteries.

Perform the operations described above in a ventilated room.

To avoid permanent damage to the batteries, do not run them down completely. Remember that when the corresponding red light flashes on the control panel, you must charge the batteries.

8.1. Charging procedure



If the machine has an on-board battery charger, connect the on-board battery charger power cable (ref. 1).

9. Maintenance Instructions



Never perform any maintenance operations without first disconnecting the batteries. Maintenance on the electrical circuit and all other operations not explicitly described in this manual must be performed by specialized personnel only, in compliance with current safety legislation and as described in the maintenance manual.

9.1. Maintenance - General rules

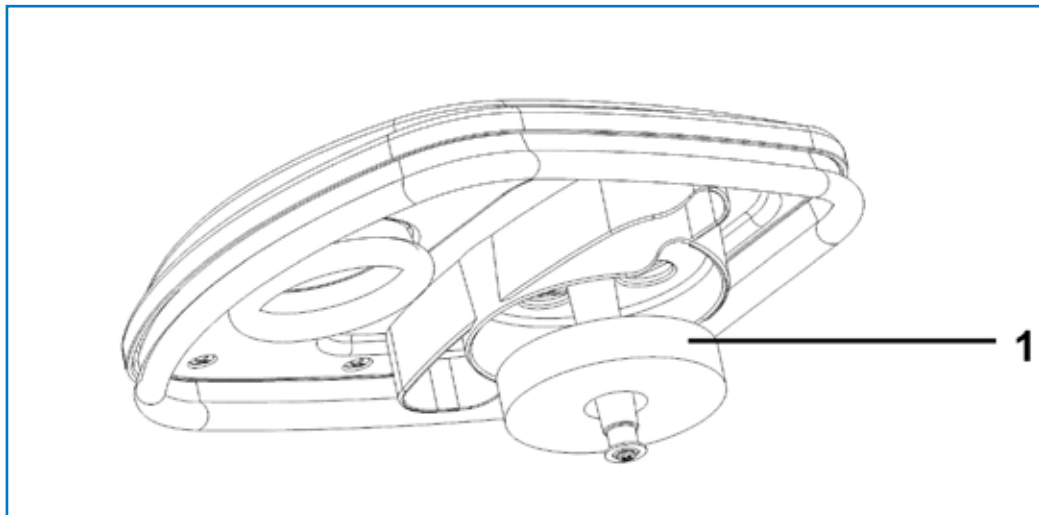
Performing regular maintenance according to the Manufacturer's instructions improves performance and extends the working life of the machine.

When cleaning the machine, respect the following:

- avoid the use of high pressure washers. Water could penetrate the electrical compartment or motors leading to damage or the risk of short circuit;
- do not use steam to avoid the heat warping plastic parts;
- do not use hydrocarbons or solvents as they could damage the cowling and rubber parts.

9.2. Routine maintenance

9.2.1 Float switch: cleaning

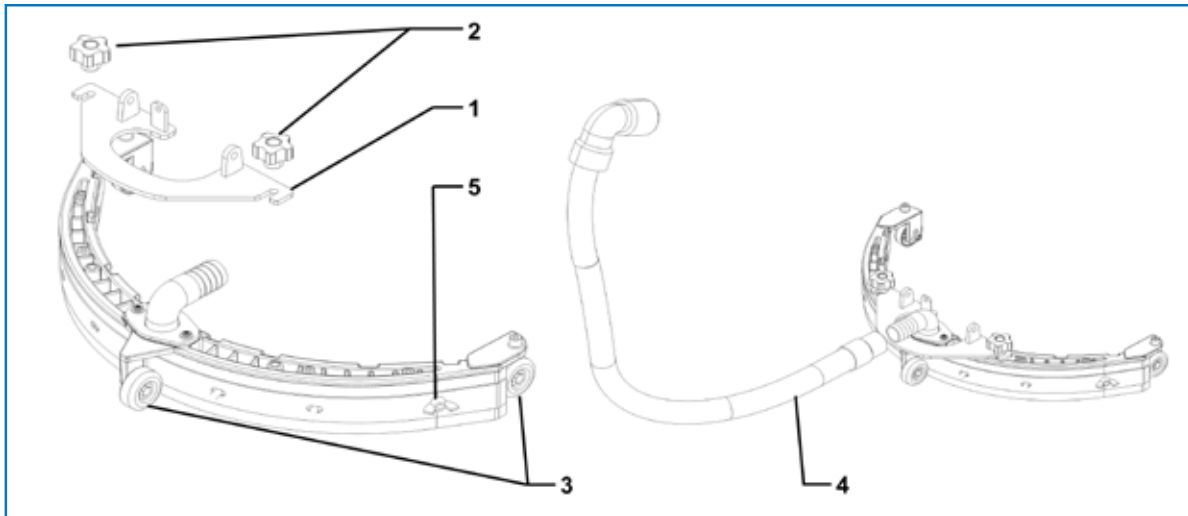


- Remove the recovery tank cap and clean the float switch (fig. I, ref. 1). Make sure it runs freely on the pin.

9.2.2 Squeegee blades: replacing

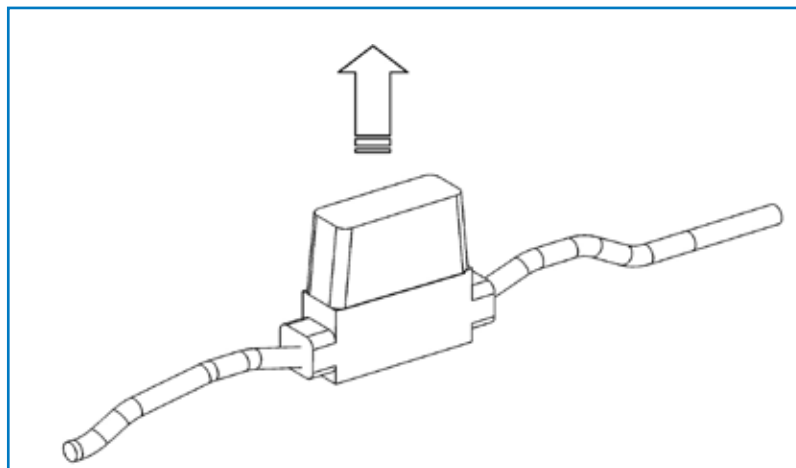
The squeegee blades collect the film of water and detergent from the floor and prepare the way for perfect drying. With time, the constant rubbing makes the edge of the blade in contact with the floor rounded and cracked, reducing the drying efficiency and requiring it to be replaced.

Turning or replacing the blades:



1. lower the squeegee by means of the squeegee lever;
2. tip the machine backwards and rest the handle on the floor.
3. remove the suction hose sleeve (ref. 4) from the squeegee;
4. remove the squeegee (ref. 1) from its mount by completely unscrewing the two knobs (ref. 2)
5. remove the blade retainers and blades by unscrewing the knobs (ref. 5);
6. reuse the same blade by reversing the edge in contact with the floor until both edges are worn out, or replace with a new blade, fitting it onto the screws on the body of the squeegee;
7. replace the two blade retainers and the blades and screw up the knobs unscrewed previously;
8. replace the squeegee in its support.

9.2.3 Fuses: replacement



The fuse protecting the electrical circuit is located on the battery bridge.

To replace it:

1. make sure the recovery tank is empty and empty if necessary;
2. lift the recovery tank to access the batteries;
3. lift the fuse holder lid and remove the fuse;
4. fit a new fuse and close the fuse holder cover;
5. lower the recovery tank.

Fuse table: for the complete fuse table, see the spare parts catalogue.



Never use a fuse with a higher amperage than specified.

If a fuse continues to blow, the fault in the wiring, boards (if present) or motors must be identified and repaired. Have the machine checked by qualified personnel.

9.3. Routine maintenance

9.3.1. Daily operations

After each day's work, proceed as follows:

1. empty the recovery tank and clean if necessary;
2. clean the squeegee blades and check for wear. If necessary, replace;
3. check that the suction hole in the squeegee is not blocked, if necessary remove encrusted dirt;
4. charge the batteries according to the procedure described.

9.3.2. Weekly operations

1. clean the recovery tank float switch and make sure it is working correctly;
2. clean the suction hose;
3. clean the recovery tank and solution tank.

9.3.3. Six monthly operations

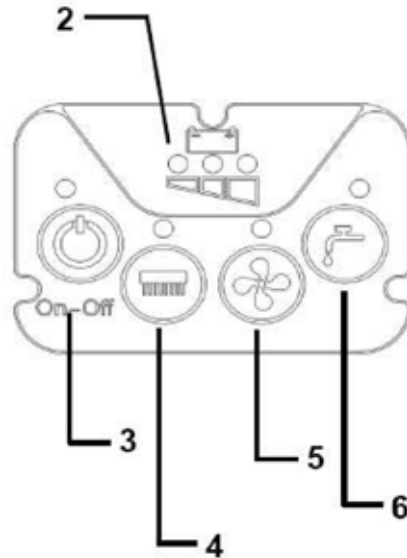
Have the electrical circuit checked by qualified personnel.

10. Troubleshooting

PROBLEM	CAUSE	REMEDY
The machine does not function	Battery connector disconnected.	Connect the batteries to the machine.
	The batteries are flat.	Charge the batteries.
	Fuse blown.	Replace the fuse.
	Temperature power board >85°C.	Stop the machine, leave to cool down for 45'.
	MOSFET temperature > 150°C.	Stop the machine, leave to cool down for 45'.
The brush doesn't rotate	The brush button LED is off,	Press the brush button.
	The brush lever has not been pressed.	Press the brush lever.
	The brush motor thermal cutout has tripped; the motor has overheated.	Release the brush lever, press the brush button (LED off), leave the machine to cool down for at least 45'.
	MOSFET temperature >150°C.	Stop the machine, leave to cool down for 45'.
	Excessive motor absorption >30 A for 1 second.	Stop the machine and check the motor.
	The power supply or motor thermal cutout connectors are disconnected.	Reconnect the power supply or motor thermal cutout connectors.
	Fuse blown.	Replace fuse.
	The batteries are flat.	Charge the batteries.
	The reduction unit is faulty.	Have the reduction unit replaced.
	The motor is faulty.	Have the motor replaced.
The machine does not clean evenly	The brush or disk is worn.	Replace

No detergent is delivered	The detergent button LED is off.	Press the detergent button.
	Solution tank empty.	Fill the solution tank.
	The brush motor is off.	Turn the motor on by operating the brush lever.
	The hose delivering the detergent to the brush is blocked.	Unblock and open the circuit.
	The tap is dirty or faulty.	Have the tap cleaned or replaced.
	The solenoid valve is faulty.	Replace the solenoid valve.
The detergent flow does not stop	The solenoid valve is faulty.	Replace the solenoid valve.
The suction motor does not start	The suction button LED is off.	Press the suction button.
	There is no power to the suction motor or the motor is faulty.	Check that the motor power connector is correctly connected to the main wiring; if it is correctly connected, have the motor replaced.
	MOSFET temperature >150°C.	Stop the machine, leave to cool down for 45'.
	Excessive motor absorption >30 A for 2 second.	Stop the machine and check the motor.
The squeegee does not clean or suction is ineffective	The edge of the rubber blades in contact with the floor is worn.	Replace the rubber blade.
	The squeegee or hose is blocked or damaged.	Unblock and repair the damage.
	The float switch has tripped (recovery tank), is clogged by dirt or broken.	Empty the recovery tank or reset the float switch.
	The suction hose is blocked.	Unblock the hose.
	The suction hose is not connected to the squeegee or is damaged.	Connect or repair the hose.
	There is no power to the suction motor or the motor is faulty.	See: "The suction motor does not start".
The batteries do not provide the normal work time (battery models only)	The battery poles and charging terminals are dirty and oxidized.	Clean and grease the poles and terminals, charge the batteries.
	The electrolyte level is low.	Top up all the elements with distilled water as described in the instructions.
	The battery charger does not work or is unsuitable.	See battery charger instructions.
	There are considerable differences in density between the various elements of the battery.	Replace the damaged battery.

11. Electronic Card Alarms



Electronic card alarms list :

- Brush motor or Suction motor overload , electronic card stops the function and the LED (ref 4 or 5) blink slowly. To reset turn OFF and ON machine with ref 3.
- Brush motor or Suction motor power card circuit over-temperature, card stops the function and the LED (ref 4 or 5) blink quickly. To reset turn OFF and ON machine with ref 3.
- Brush motor short circuit, electronic card stops the function and LED ref 4 blinks twice
- Brush motor over-temperature, electronic card stops the function until motor cools down and the thermal sensor closes the circuit again.