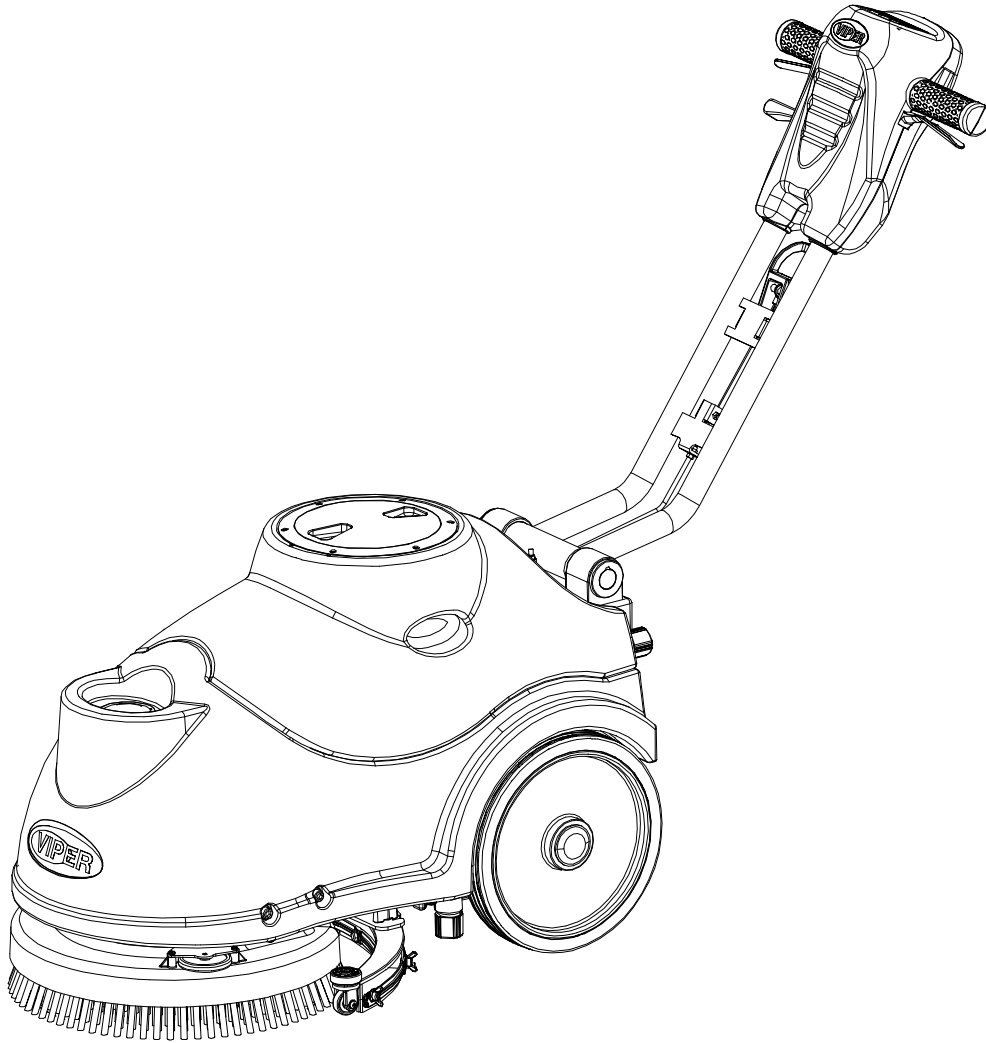




User Manual

Original instructions

AS380/15B-AU



Company information:

www.vipercleaning.eu

info-eu@vipercleaning.com

VF89865 REV:01 (2015.7.13)



INTRODUCTION



NOTE

The numbers in brackets refer to the components shown in Machine Description chapter.

MANUAL PURPOSE AND CONTENTS

The purpose of this Manual is to provide the operator with all necessary information to use the machine properly, in a safe and autonomous way. It contains information about technical data, safety, operation, storage, maintenance, spare parts and disposal. Before performing any procedure on the machine, the operators and qualified technicians must read this Manual carefully. Contact Nilfisk in case of doubts concerning the interpretation of the instructions and for any further information.

TARGET

This Manual is intended for operators and technicians qualified to perform the machine maintenance.

The operators must not perform procedures reserved for qualified technicians. Nilfisk will not be answerable for damages coming from the non-observance of this prohibition.

HOW TO KEEP THIS MANUAL

The Instructions for use Manual must be kept near the machine, inside an adequate case, away from liquids and other substances that can cause damage to it.

DECLARATION OF CONFORMITY

The Declaration of Conformity, supplied with the machine, certifies the machine conformity with the law in force.



NOTE

Two copies of the original declaration of conformity are provided together with the machine documentation.

IDENTIFICATION DATA

The machine serial number and model name are marked on the plate (4).

Product number and year of production are marked on the same plate.

This information is useful when requiring machine spare parts. Use the following table to write down the machine identification data.

MACHINE model
PRODUCT code
MACHINE serial number

OTHER REFERENCE MANUALS

- Electronic battery charger Manual, to be considered as integral part of this Manual
- Spare Parts List (supplied with the machine)
- Service Manual (that can be consulted at Nilfisk Service Centers)

SPARE PARTS AND MAINTENANCE

All necessary operating, maintenance and repair procedures must be performed by qualified personnel or by Nilfisk Service Centers. Only original spare parts and accessories must be used.

Contact Nilfisk for service or to order spare parts and accessories, specifying the machine model, product code and serial number.

CHANGES AND IMPROVEMENTS

Nilfisk constantly improves its products and reserves the right to make changes and improvements at its discretion without being obliged to apply such benefits to the machines that were previously sold.

Any change and/or addition of accessory must be approved and performed by Nilfisk.

OPERATION CAPABILITIES

The SC500 scrubber-dryer is used to clean (scrubbing and drying) smooth and solid floors, in civil or industrial environment, under safe operation conditions by a qualified operator.

The scrubber-dryer cannot be used for fitted carpet and carpet cleaning.

CONVENTIONS

Forward, backward, front, rear, left or right are intended with reference to the operator's position, that is to say in driving position with the hands on the handlebar (1).

UNPACKING/DELIVERY

To unpack the machine, carefully follow the instructions on the packing.

When the machine is delivered, check that the packing and the machine were not damaged during transportation.

In case of visible damages, keep the packing and have it checked by the carrier that delivered it. Call the carrier immediately to fill in a damage claim.

Please check that the following items have been supplied with the machine:

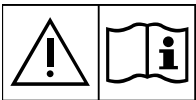
- Technical documents:
 - Scrubber-dryer Instructions for use Manual
 - Electronic battery charger manual (if installed)
 - Scrubber-dryer Spare Parts List

SAFETY

The following symbols indicate potentially dangerous situations. Always read this information carefully and take all necessary precautions to safeguard people and property.

The operator's cooperation is essential in order to prevent injury. No accident prevention program is effective without the total cooperation of the person responsible for the machine operation. Most of the accidents that may occur in a factory, while working or moving around, are caused by failure to comply with the simplest rules for exercising prudence. A careful and prudent operator is the best guarantee against accidents and is essential for successful completion of any prevention program.

VISIBLE SYMBOLS ON THE MACHINE



WARNING!

Carefully read all the instructions before performing any operation on the machine.



WARNING!

Do not wash the machine with direct or pressurized water jets.



WARNING!

Do not use the machine on slopes with a gradient exceeding the specifications.

SYMBOLS THAT APPEAR ON THIS MANUAL



DANGER!

It indicates a dangerous situation with risk of death for the operator.



WARNING!

It indicates a potential risk of injury for people.



CAUTION!

It indicates a caution or a remark related to important or useful functions. Pay careful attention to the paragraphs marked by this symbol.



NOTE

It indicates a remark related to important or useful functions.



CONSULTATION

It indicates the necessity to refer to the Instructions for use Manual before performing any procedure.

GENERAL INSTRUCTIONS

Specific warnings and cautions to inform about potential damages to people and machine are shown below.



DANGER!

- *Before performing any maintenance, repair, cleaning or replacement procedure, remove the ignition key and disconnect the battery connector.*
- *This machine must be used by properly trained operators only.*
- *Do not wear jewels when working near electrical components.*
- *Do not work under the lifted machine without supporting it with safety stands.*
- *Do not operate the machine near toxic, dangerous, flammable and/or explosive powders, liquids or vapours: This machine is not suitable for collecting dangerous powders.*
- *When using lead (WET) batteries, keep sparks, flames and smoking materials away from the batteries. During the normal operation explosive gases are released.*
- *When using lead (WET) batteries, battery charging produces highly explosive hydrogen gas. During battery charging, lift the recovery tank and perform this procedure in well-ventilated areas and away from naked flames.*



WARNING!

- *Carefully read all the instructions before performing any maintenance/repair procedure.*
- *The machine ignition key has a built-in magnet. Do not place objects having magnetic bands (such as credit cards, electronic keys, phone cards) near the key. The built-in magnet can damage or erase the data stored on the magnetic bands.*
- *Before using the battery charger, ensure that frequency and voltage values, indicated on the machine serial number plate, match the electrical mains voltage.*
- *Do not pull or carry the machine by the battery charger cable and never use the battery charger cable as a handle. Do not close a door on the battery charger cable, or pull the battery charger cable around sharp edges or corners. Do not run the machine on the battery charger cable.*
- *Keep the battery charger cable away from heated surfaces.*
- *Do not charge the batteries if the battery charger cable or the plug are damaged.*
- *To reduce the risk of fire, electric shock, or injury, do not leave the machine unattended when it is plugged in. Before performing any maintenance procedure, disconnect the battery charger cable from the electrical mains.*
- *Do not smoke while charging the batteries.*
- *To avoid any unauthorized use of the machine, remove the ignition key.*
- *Do not leave the machine unattended without being sure that it cannot move independently.*



WARNING!

- *Always protect the machine against the sun, rain and bad weather, both under operation and inactivity condition. Store the machine indoors, in a dry place: This machine must be used in dry conditions, it must not be used or kept outdoors in wet conditions.*
- *Before using the machine, close all doors and/or covers as shown in the Instructions for use Manual.*
- *This machine 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 machine by a person responsible for their safety. Children should be supervised to ensure that they do not play with the machine.*
- *Close attention is necessary when used near children. Use only as shown in this Manual. Use only Nilfisk's recommended accessories.*
- *Check the machine carefully before each use, always check that all the components have been properly assembled before use. If the machine is not perfectly assembled it can cause damages to people and properties.*
- *Take all necessary precautions to prevent hair, jewels and loose clothes from being caught by the machine moving parts.*
- *Do not use the machine on incline.*
- *Do not tilt the machine more than the angle indicated on the machine itself, in order to prevent instability.*
- *Do not use the machine in particularly dusty areas.*
- *Use the machine only where a proper lighting is provided.*
- *While using this machine, take care not to cause damage to people or objects.*
- *Do not bump into shelves or scaffoldings, especially where there is a risk of falling objects.*
- *Do not lean liquid containers on the machine, use the relevant can holder.*
- *The machine working temperature must be between 0 °C and +40 °C.*
- *The machine storage temperature must be between 0 °C and +40 °C.*
- *The humidity must be between 30 % and 95 %.*
- *When using floor cleaning detergents, follow the instructions on the labels of the detergent bottles.*
- *To handle floor cleaning detergents, wear suitable gloves and protections.*
- *Do not use the machine as a means of transport.*
- *Do not allow the brush/pad to operate while the machine is stationary to avoid damaging the floor.*
- *In case of fire, use a powder fire extinguisher, not a water one.*
- *Do not tamper with the machine safety guards and follow the ordinary maintenance instructions scrupulously.*
- *Do not allow any object to enter into the openings. Do not use the machine if the openings are clogged. Always keep the openings free from dust, hairs and any other foreign material which could reduce the air flow.*
- *Do not remove or modify the plates affixed to the machine.*
- *When the machine is to be pushed for service reasons (missing or discharged batteries, etc.), the speed must not exceed 4 km/h.*
- *This machine cannot be used on roads or public streets.*
- *Pay attention during machine transportation when temperature is below freezing point. The water in the recovery tank or in the hoses could freeze and seriously damage the machine.*
- *Use brushes and pads supplied with the machine or those specified in the Instructions for use Manual. Using other brushes or pads could reduce safety.*
- *In case of machine malfunctions, ensure that these are not due to lack of maintenance. If necessary, request assistance from the authorised personnel or from an authorised Service Center.*
- *If parts must be replaced, require ORIGINAL spare parts from an Authorised Dealer or Retailer.*
- *To ensure machine proper and safe operation, the scheduled maintenance shown in the relevant chapter of this Manual, must be performed by the authorised personnel or by an authorised Service Center.*
- *Do not wash the machine with direct or pressurised water jets, or with corrosive substances.*
- *The machine must be disposed of properly, because of the presence of toxic-harmful materials (batteries, etc.), which are subject to standards that require disposal in special centres (see Scrapping chapter).*

MACHINE SET UP&INSTALLATION

UNCRATING MACHINE

Be sure and check packing carton for any damage. Immediately report any damage to carrier.

Check contents of package to ensure that the following items are included:

1. Machine
2. Batteries(x2)
3. Squeegee assembly
4. Scrubber-dryer User Manual
5. Electric Battery Charger Manual (if equipped)
6. connecting wire for battery and charger (if equipped)
7. brush or pad driver (if equipped)

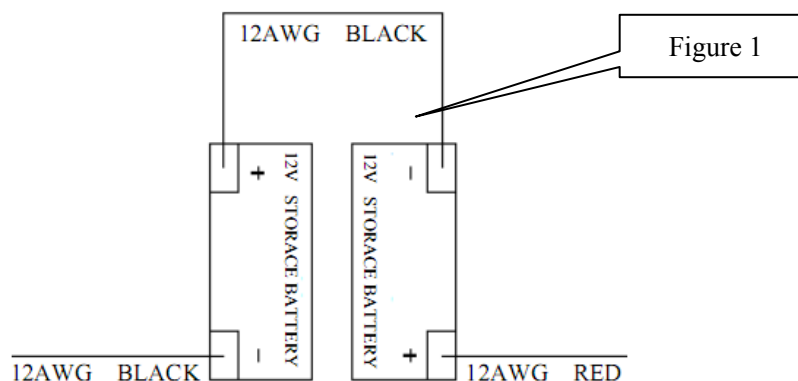
BATTERY DISASSMBLY AND INSTALLATION

1. Switch off the main switch (47).
2. Remove the recovery tank (2) as shown in the relevant paragraph.
3. Unscrew the bolt from batteries (16), then remove or change.
4. Install the batteries on the machine according to the diagram below.
5. Install the recovery tank.



WARNING

Do not connect + to +, or - to -, when disassembly or install the batteries. It is very dangerous.



Battery charging

Charge the batteries (see the procedure in Maintenance chapter).

MACHINE SET UP

Pre-operation checks

1. Sweep or dust mop the surface to be cleaned.
2. Check that squeegee is properly installed.
3. Lower the squeegee (33) with the lever (26).
4. Check battery are fully charged.(see BATTERY CHARGIN)
5. Check that brush/pad is properly installed.

Brush/Pad driver installation and disassembly

USER MANUAL



NOTE

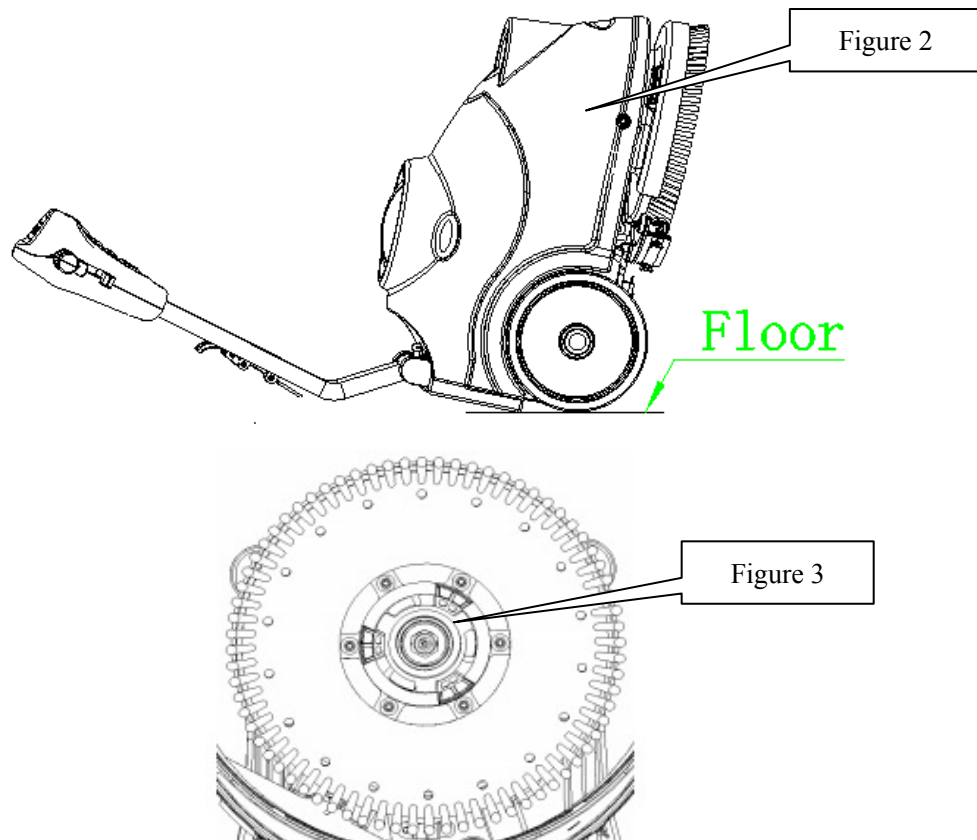
*Only install manually. If auto-installation, it will wear brush hub.
Make sure that the tanks are empty before disassembling the brush.*

1. Turn off the machine.
2. Lay down the machine in this position as indicated in the figure2, Pull up the lift lever (26) to raise the squeegee up (33).
3. Mount the brush or pad driver onto the drive wheel hub and then rotate counterclockwise until it locks, as indicated in the figure 3.
4. To remove the brush/pad, rotate the brush/pad clockwise until it is released from drive wheel hub.



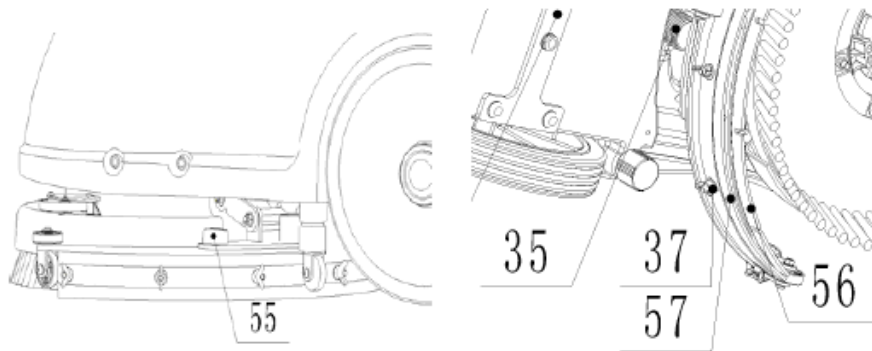
WARNING

Do not turn on the machine in this position as below. The brush/pad could disengage and cause injury.



Squeegee installation

1. Turn off the machine (47).
2. Pull down the squeegee lift lever (26) to put down the squeegee on the “working” position.
3. Lay down the machine in this position as indicated in the figure2.
4. Loosen the two knobs (55) on the squeegee and slide the squeegee into the slots of squeegee brackets
Tighten the knobs securely (unscrew the knobs, if disassembly).
5. To replace the front/rear squeegee (56/57), unscrew the thumb nut (37).



Solution tank filling



NOTE

The machine can be filled with a pipe or bucket. Do not remove the Solution filter (21) while filling.

1. Fill water into solution tank (3) from the inlet (20) through pipe or bucket
2. Do not fill the solution tank completely, leave a few centimeters from the edge.
3. The water temperature must not exceed 40°C.



CAUTION!

Use only low-foam and non-flammable detergents, intended for automatic scrubber applications

Solution tank draining



NOTE

Solution tank should be drained and cleaned after each scrubber operation is completed.

1. Unscrew the drain cap (22) on the bottom of solution tank. The solution/water will flow freely into a bucket or floor drain.
2. Rinse the solution tank with clean water after every use. This will help prevent chemical build up and clogging of the solution lines
3. Screw up the drain cap (22).

Recovery tank draining



NOTE

Recovery tank should be drained and cleaned after each scrubber operation is completed.

1. Turn the latch (17) off the recovery tank, take off the recovery tank from machine by grasping two grooves of tank. Open the lid (1) and overturn the recovery tank to drain the dirty water into a container, or unscrew the drain cap (22) to let water pipe out to a bucket.
2. Clean and Rinse the recovery tank with clean water after every use.
3. Re-place the recovery tank on the machine and turn the latch (17) to lock the tank..

MACHINE OPERATION




1. Set the handle to a comfortable height by pressing level (25).
2. Lower the squeegee (33) onto the floor by pulling down the lift mechanism (26).

USER MANUAL

3. Turn on the main switch (47).
4. Turn on the brush motor switch (48) and the solution switch (50), the indicate light will be on.
5. Turn on the vacuum motor switch (49), the indicate light will be on.
6. If necessary, adjust the water flow by turn the ball valve (31) manually
7. Pull one or both operating triggers (24), and then brush will start to spin, solution will begin to flow.
Move the machine and start cleaning,

NOTE

If the battery indicator light (51) is green, the machine can be used. If it is yellow or red, the batteries must be charged.

	CAUTION! <i>Before lifting the brush, turn it off by pressing the switch (47).</i>
	CAUTION! <i>When cleaning excessively aggressive floors or others this could cause the machine do not work, brush motor and vacuum indicators on the Control panel(46) flashing simultaneously. It means the machine being overloaded. Please turn off all the switches on the Control panel (46).</i>
	CAUTION! <i>Do not use the machine with discharged batteries to avoid damaging the batteries and reducing the battery life.</i>

AFTER USING THE MACHINE

After scrubbing, please proceed with below actions before leaving the machine:

1. Remove the brush/pad-holder.
2. Empty the tanks as shown in the previous parsagraph.
3. Perform the daily maintenance procedures (see the maintenance chapter)
4. Store the machine in a clean and dry place, with the brush/pad-holder and the squeegee
5. If storing in an area which may reach freezing temperatures, be sure to drain all fluids from the machine prior to storage. any damage caused by freezing temperatures will not be covered by the warranty.


MACHINE NOT BEING USED FOR LONG PERIODS

If the machine is not going to be used for more than 30days, please proceed with below actions:

1. Perform the procedures shown in ‘After Using the Machine paragraph’.
2. Disconnect the battery connector.

MAINTENANCE

The lifespan of the machine and its maximum operating safety are ensured by correct and regular maintenance. The following chart provides the scheduled maintenance. The intervals shown may vary according to particular working conditions, which will be defined by the person in charge of the maintenance.

	WARNING <i>Maintenance procedures must be performed with the machine switched off and the batteries/battery charger cable disconnected. Moreover, carefully read the instruction in the Safety chapter.</i>
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All scheduled or extraordinary maintenance procedures must be performed by qualified personnel, or by

an authorized Service Center.

This Manual describes only the easier and most common maintenance procedures.

For other maintenance procedures shown in the Scheduled Maintenance Table, refer to the Service Manual that can be consulted at any Service Center.






SCHEDULED MAINTENANCE TABLE

Procedure	Daily, after using the machine	Weekly	Every six mouths	yearly
Battery charging				
Squeegee cleaning				
Brush cleaning				
Tank and vacuum grid with float cleaning, the cover gasket check				
Squeegee blade check and replacement				
Solution filter cleaning				
Out-water pipe filter cleaning				
Screw and nut tightening check			(1)	
rotary parts getting lubricant			(1)	
Brush/Pad-holder motor carbon brush check or replacement				(2)
Vacuum system motor carbon brush check or replacement				(2)

(1) And after the first 8 working hours.

(2) This maintenance procedure must be performed by an authorized viper Service Center.

BATTERY CHARGING

	<p>NOTE</p> <p><i>Charge the batteries when the yellow or red indicator (51), or at the end of every working cycle.</i></p>
	<p>CAUTION!</p> <p><i>Keeping the batteries charged make their life last longer.</i></p>
	<p>CAUTION!</p> <p><i>If the machine is not equipped with on-board battery charger, choose an external battery charger suitable for the type of batteries installed.</i></p>
	<p>WARNING!</p> <p><i>Please use viper approved charger to charge the battery</i></p>
	<p>WARNING!</p> <p><i>Pay careful attention when charging WET batteries as there may be battery fluid leakages. The battery fluid is corrosive. If it comes in contact with skin or eyes, rinse thoroughly with water and consult a physician.</i></p>

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1. Place charger and machine in a well ventilated area.
2. Turn machine off (47).
3. Take away the recovery tank (2), Exposing battery compartment.
4. Plug the charging cable to the grounded wall outlet (100v~240v)..
Connect the charging cable to the machine socket.
5. The charging indicator light (30) turn on means It is in charging, green light means battery charging is completed.
6. Upon the completion of charging, first unplug the charging cable from the wall outlet and then disconnect from machine.
7. Replace the recovery tank.



NOTE

For further information about the operation of the battery charger (29), see the relevant paragraph.

SQUEEGEE CLEANING



NOTE

The squeegee must be clean and its blades must be in good condition in order to getting a good drying performance.



CAUTION!

It is advisable to wear protective gloves when cleaning the squeegee because there may be sharp debris.

SQUEEGEE BLADE CHECK AND REPLACEMENT

1. Take off the squeegee as shown in the previous paragraph.
2. Check to see if the edge of the front/rear blades are cracked or split, if necessary replace them with new.
3. Unscrew six the thumb nut (37) to get off the blades.
4. Check the front/rear blades for integrity, cut and tears. If they are not adequate, overturn or replace them.
5. Install the squeegee in the reverse order of removal.

BRUSH /PAD DRIVER CLEANING



CAUTION!

It is advisable to wear protective gloves when cleaning the brush/pad because there may be sharp debris.

1. Remove the brush/pad as shown in the previous paragraph.
2. Clean and wash the brush/pad with water and detergent.
3. Check the brush bristles for integrity and wearing status; if necessary, replace the brush.
4. Check the pad for wearing status; if necessary, replace the pad driver.

TANK/VACUUM GRID WITH FLOAT CLEANING AND COVER GASKET CHECK



CAUTION!

It is advisable to wear protective gloves when cleaning the tank and vacuum/suction assembly because there may be sharp debris.

1. Move the machine to the appointed disposal area.
2. Turn off the main switch (47).
3. Take off the recovery tank (2), clean and rinse both solution/recovery tank, and drain out.
4. Take off all vacuum kits, gasket, filter, clean and re-install.
5. Check the recovery tank lids gasket ring and the vacuum rubber connector (18) between two tanks are integrity or not..



NOTE

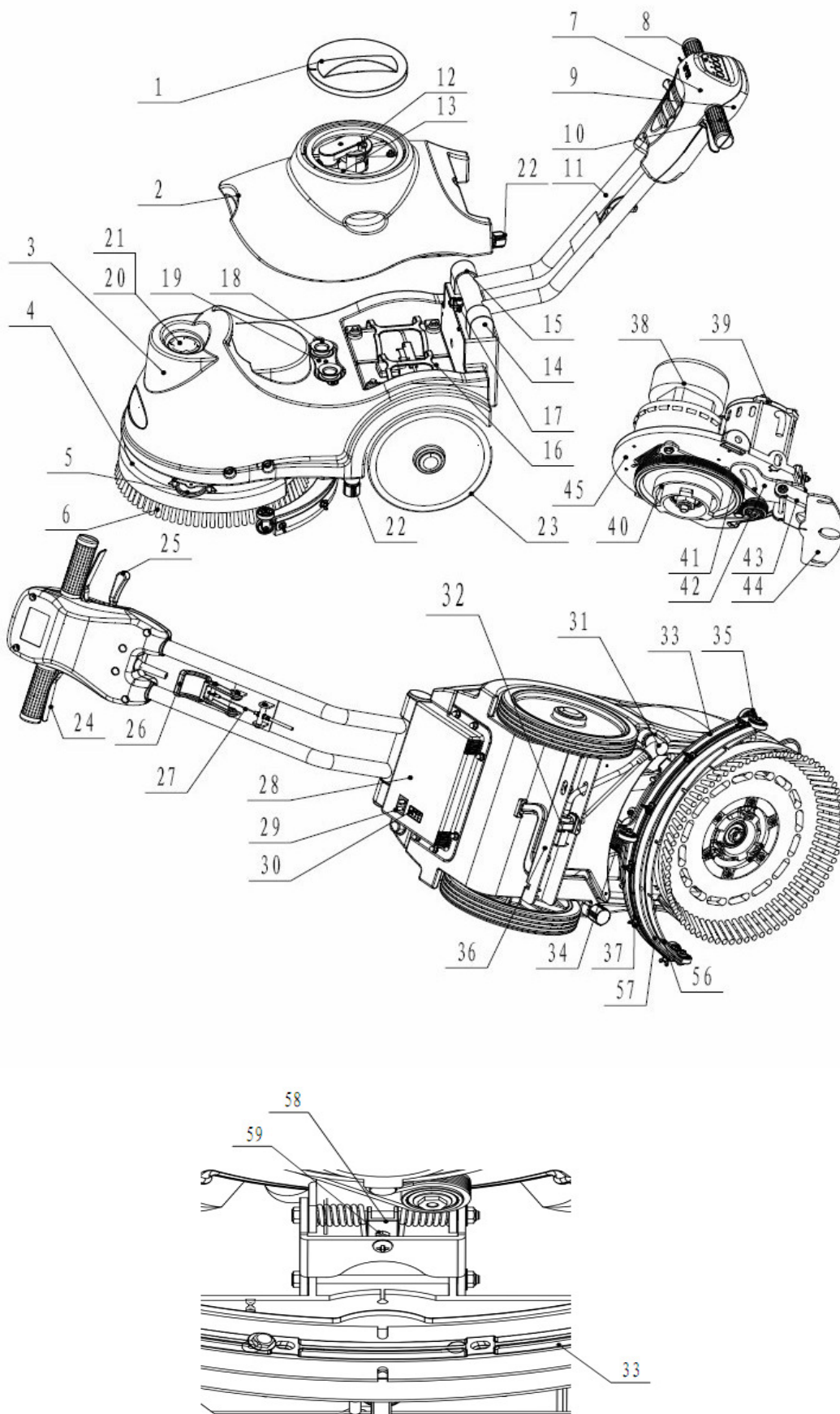
The gasket ring of recovery tank and the rubber connector between two tanks create vacuum in the tank. If necessary, replace them.

MACHINE STRUCTURE

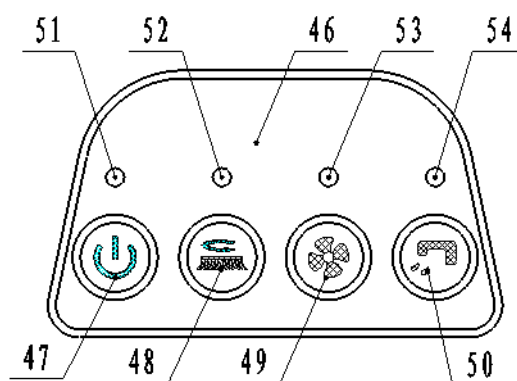
1. Recovery tank lid
2. Recovery tank
3. Solution tank
4. Brush cover
5. Protective rollers
6. Brush
7. Front handle shell
8. Control panel
9. Rear handle shell
10. Handle rubber
11. Handle iron pipe
12. Squeegee vacuum assembly
13. Squeegee suction assembly
14. Left positioning
15. Right positioning
16. Batteries
17. Latch
18. Rubber sealing
19. Limit hose joint
20. Inlet
21. Solution filter
22. Solution tank drain
23. Wheels on fixed axle
24. Handle left and right
25. Handle rotate lever
26. Squeegee lift lever
27. Squeegee string
28. Box circuit
29. Charger
30. Battery charge indicator
31. Solution flow control lever
32. Electromagnetic valve data
33. Squeegee

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- 34. Squeegee hose
- 35. Squeegee wheels
- 36. Axle
- 37. Thumb nut
- 38. Vacuum system motor
- 39. Brush motor
- 40. Drive belt
- 41. Belt
- 42. Squeegee rotation plate
- 43. Squeegee lift plate
- 44. Squeegee fixing plate
- 45. Motor fixing plate



Control panel



- 46. Control panel
- 47. Main switch
- 48. Brush motor switch
- 49. Vacuum motor switch
- 50. Suction Electromagnetic valve data switch
- 51. Electric quantity indicator
- 52. Brush motor indicator
- 53. Vacuum motor indicator
- 54. Suction Electromagnetic valve data indicator

TECHINICAL DATA

Machine length*width*height	770x500x550MM
Solution tank capacity	15L
Recovery tank capacity	15L
Wheel diameter	254MM
Brush motor data	24V 250W
Vacuum motor data	24V 300W
Electromagnetic valve data	24V
Maximum gradient	2%
Sound lever	68 dBA
Batteries data	(2X12V) 24V 35Ah/20h
Power cable length	/
Batteries spec	196 x 130 x 175mm
Working capacity, up to	1000mm H ₂ O
Cleaning productivity	750m ² /hour
Squeegee width	490mm
Brush diameter	380mm
Brush rpm	150rpm
Charger	Input 100-240 Vac, 50-60HZ Output 24Vdc, 5A
Operating Weight	60kg
Gross Weight	65kg
Carton spec	780x145x590MM

TROUBLESHOOTING

Trouble	Possible Cause	Remedy
The machine does not work, indicator light (51) do not turns on	The battery connector is disconnected	Connect
	The batteries are completely discharged	Charge the batteries
	The power line disconnected from the power	Connect
The machine does not work, indicator light(51) display red	The batteries are discharged	Charge the batteries
Brush motor does not work, brush indicator light (52) do not turns on	The PCB or key board is faulty	Change the PCB or key board
Brush motor does not work, brush indicator lights (52) flash	The deck motor is overloaded	Use less aggressive brushes suitable for the floor to be cleaned
	There are foreign materials(tangled threads,etc)preventing the brush from rotating	Clean the brush hub
Vacuum system motor does not work, vacuum motor indicator light (53) do not turns on	The PCB or key board is faulty	Change the PCB or key board
Vacuum system motor does not work, brush indicator lights (53) flash	The vacuum system motor is overloaded	Check the vacuum system motor
The suction power is insufficient	The recovery tank is full.	Empty the recovery tank.
	The hose is disconnected from the squeegee	connect
	Vacuum assembly is clogged	Clean or check
	The squeegee is dirty, or the squeegee blades are worn or damaged	Clean and check the squeegee
	The recovery tank do not limited	Lock the latch(17)
	The tank cover is not properly closed, or the gasket is damaged	Close the cover properly or replace the gasket
	Squeegee adjustment piece (58) not set at an appropriate position	Adjust the screw nut (59) to the appropriate position
The solution flow is insufficient.	The solution is empty	Fill the tank
	Solution flow control valve(31) is block up	Clean the valve
	The solution is dirty	Empty the solution, clean the tank and refill with clean solution
The squeegee leaves marks on the floor.	There is debris under the squeegee blades	Remove the debris
	The squeegee blades are worn, chipped or torn	Replace the blades

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