



SCRUBBER

USER MANUAL



Model: FANG 18C

VIPER CLEANING EQUIPMENT CO., LTD

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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 Viper 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. Viper will not be answerable for damages coming from the non-observance of this prohibition.

HOW TO KEEP THIS MANUAL

The User 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. CE-declaration is print in Quick Start Guide

IDENTIFICATION DATA

The machine model and serial number are marked on the plate(16)

The machine model year is written in the declaration of conformity and it is also indicated by the first two figures of the machine serial number.

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

MACHINE model.....
MACHINE serial number.....

OTHER REFERENCE MANUALS

- Service Manual (that can be consulted at Viper Service Centers)
- Spare Parts List (see www.viperclearing.eu)

SPARE PARTS AND MAINTENANCE

All necessary operating, maintenance and repair procedures must be performed out by qualified personnel or by Viper Service Centers. Only original spare parts and accessories must be used. Contact Viper for service or to order spare parts and accessories, specifying the machine model and serial number.

CHANGES AND IMPROVEMENTS

Viper 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 accessories must be approved and performed by Viper.

OPERATION CAPABILITIES

These scrubber-dryers are 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-dryers cannot be used for fitted carpet and carpet cleaning.

CONVENTIONS

Forward, backward, front, rear, left or right and up are intended with reference to the operator's position, that is to say in working position .

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

1. Machine;
2. squeegee assembly;
3. brush (and pad driver);
4. Technical documents: Scrubber-dryer User Manual & 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.

SYMBOLS



DANGER!

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



WARNING!

It indicates a potential risk of injury for people or damage to objects



CAUTION!

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



NOTE

It indicates the necessity to refer to the User Manual before performing any procedure.

GENERAL INSTRUCTIONS

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



DANGER!

- *Always disconnect the power supply cable when the machine is not in use, before performing maintenance procedures, before replacing the parts before opening any access panel.*
- *This machine must be used by properly trained and authorised personnel only. Children or disabled people cannot use this machine.*
- *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.*



WARNING!

- *The machine power supply cable is grounded and the relevant plug is grounded too. In case of machine malfunction or breakdown, grounding connection reduces the risk of electric shock.*
- *The power supply cable plug must be connected to an appropriate outlet, which is grounded according to law in force.*
- *This 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.*
- *Children should be supervised to ensure that they do not play with the appliance.*
- *if the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.*
- *Improper connection can cause electric shock. Consult a qualified technician to make sure that the outlet is properly grounded.*
- *Do not tamper with the power supply cable plug. If the power supply cable plug cannot be connected to the outlet, have new grounded outlet installed by a qualified technician, according to the law in force.*
- *Before connecting the power supply cable to the electrical mains, check that frequency and voltage, shown on the machine serial number plate, match the electrical mains voltage.*
- *Regularly check the power supply cable for damages, cracks, cuts, etc. If the power supply cable is damaged, replace it immediately.*
- *To avoid any risk, if the power supply cable is damaged, contact Viper Service Center or a qualified technician.*
- *Do not pull or carry the machine by the power supply cable and never use the power supply cable as a handle. Do not close a door on the power supply cable, or pull the power supply cable around sharp edges or corners. Do not run the machine on the power supply cable.*
- *Keep the power supply cable away from heated surfaces.*
- *To reduce the risk of fire, electric shock, or injury, do not leave the machine unattended when it is plugged in. Disconnect the machine from the electrical mains when not in use and before performing maintenance procedures.*
- *To avoid electric shock, do not expose the machine to rain or other bad weather conditions. Store the machine indoors, in a dry place.*
- *Do not allow to be used as a toy. Close attention is necessary when used near children.*
- *Use only as shown in this Manual. Use only Viper's recommended accessories.*
- *Take all necessary precautions to prevent hair, jewels and loose clothes from being caught by the machine moving parts.*
- *Do not leave the machine unattended without being sure that it cannot move independently.*
- *Do not use the machine on slopes with a gradient exceeding the specifications.*
- *Do not use the machine in particularly dusty areas.*

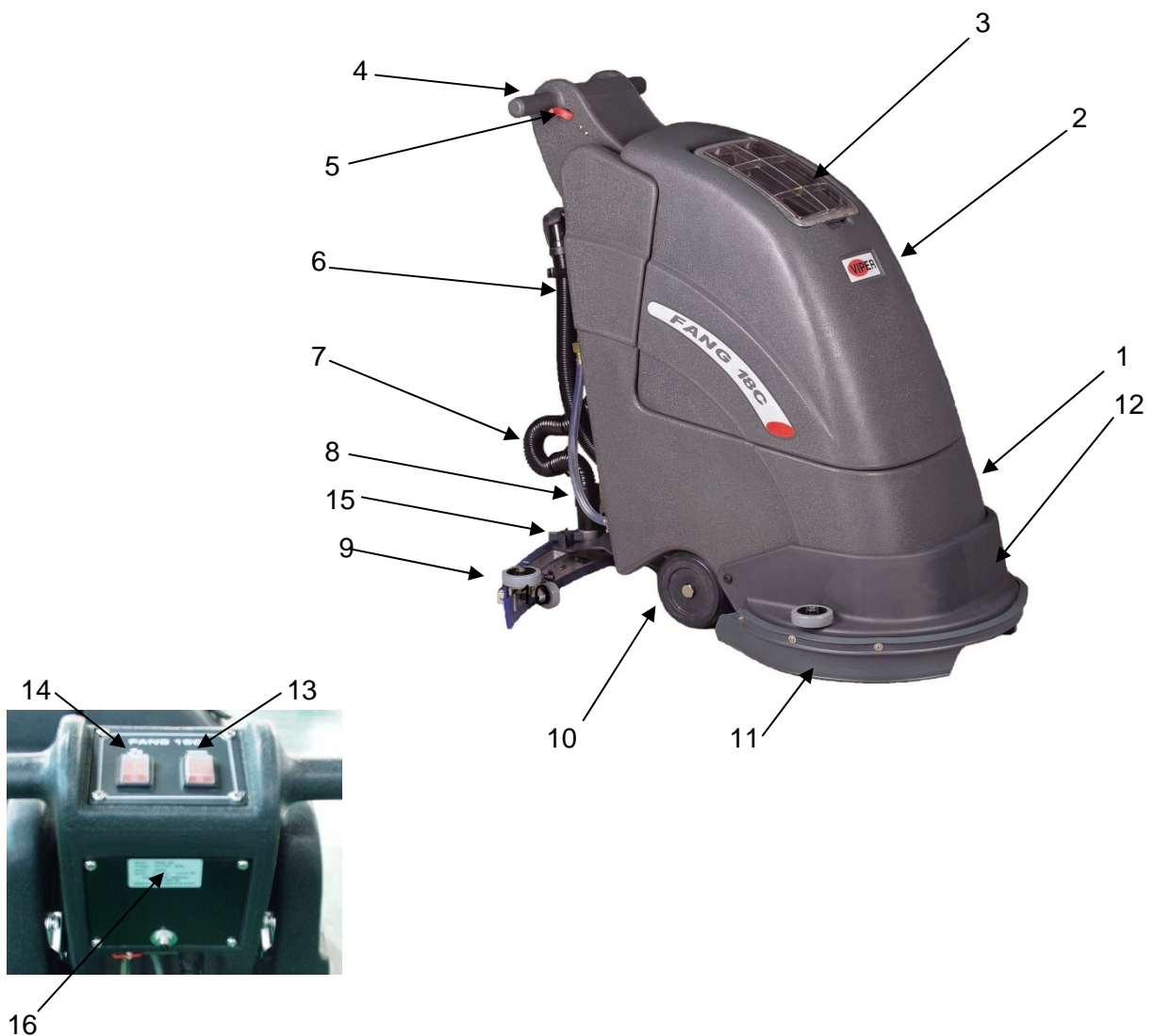


- *While using this machine, take care not to cause damage to people or objects.*
- *Do not bump into shelves or scaffoldings, especially where there is a risk of falling objects.*
- *Do not put any can containing fluids on the machine.*
- *The machine working temperature must be between 0°C and +40°C.*
- *The machine storage temperature must be between 0°C and +40°C.*
- *The humidity must be between 30% and 95%.*
- *Do not use the machine as a means of transport.*
- *Do not use the machine on slopes with a gradient exceeding the specifications.*
- *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.*
- *If the machine is used according to the instructions, the vibrations are not dangerous. The machine vibration level is less than 2.5 m/s² (98/37/EEC-EN 1033/1995).*
- *The Hand/arm vibration levels are well below 2,5 m/s² (measured according to ISO 5349), which is the limit for an 8 hour continuous working period.*
- *Full body vibrations (ride on machines, measured on the seat) have to be not more than 0,5 m/s² (measured according to ISO 2631-1), also the limit for 8 hour continuous operation.–*
- *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 and those specified in the User 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 the machine*
 - *does not work properly*
 - *is damaged*
 - *has water or foam leaks*
 - *has been left outdoors exposed to bad weather conditions*
 - *is wet or has been dropped into water**turn it off immediately and contact Viper Service Center or a qualified technician.*
- *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.*
- *Carefully read all the instructions before performing any maintenance/repair procedure.*
- *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 (electrical components, etc.), which are subject to standards that require disposal in special centres (see Scrapping chapter).*

MACHINE DESCRIPTION

MACHINE STRUCTURE

1. Solution Tank
2. Recovery Tank
3. Clear Cover
4. Control Box
5. Switch lever
6. Drain Hose
7. Vacuum Hose
8. Water Hose
9. Squeegee Assembly
10. Transport Wheels
11. Bumper
12. Skirt
13. Brush Motor Switch
14. Vacuum Motor Switch
15. Knob
16. Plate



ACCESSORIES/OPTIONS

In addition to the standard components, the machine can be equipped with the following accessories/options, according to the machine specific use:

1. Brush
2. Pad driver

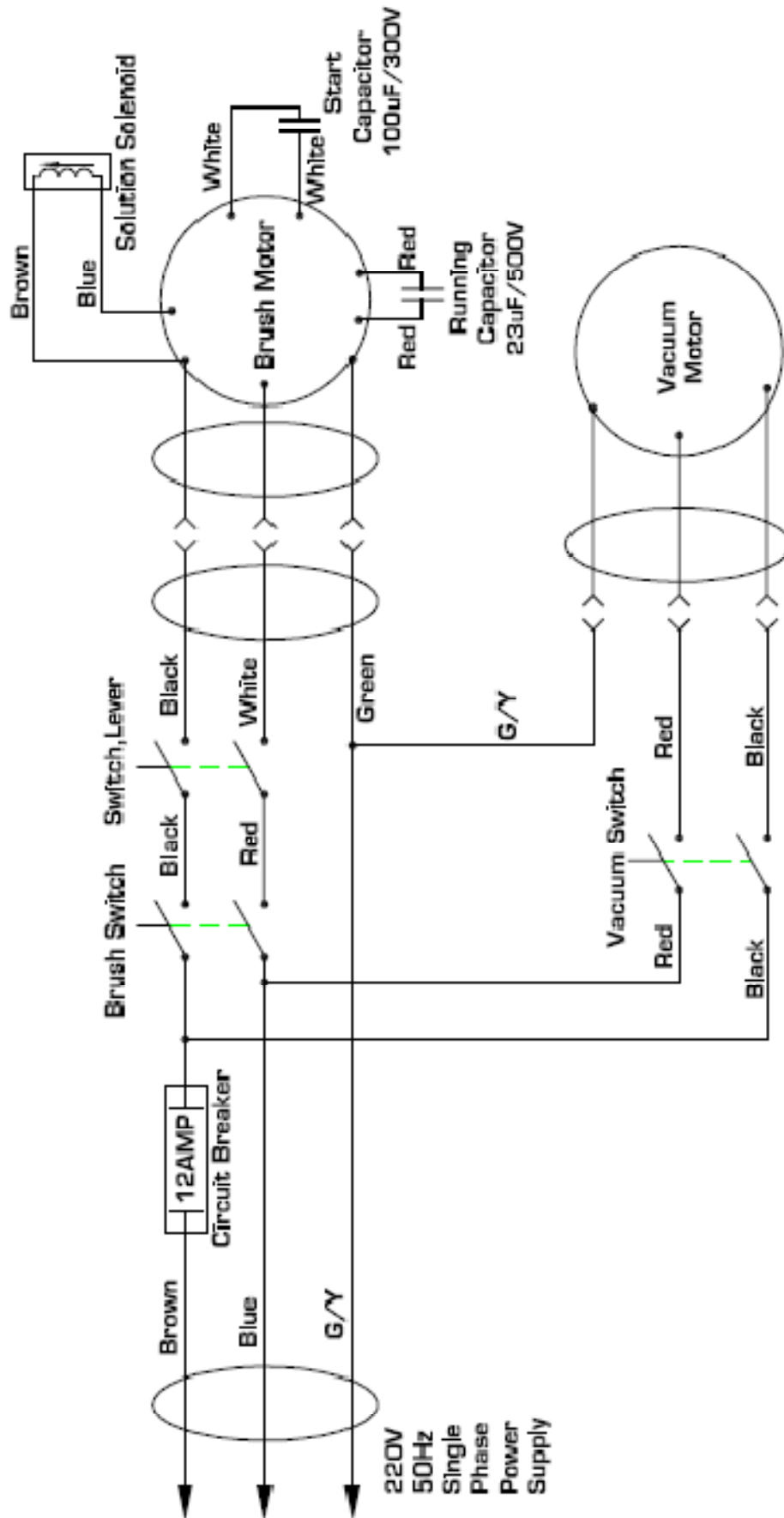
For further information concerning the optional accessories, contact an authorised Retailer.

TECHNICAL DATA

Model	FANG 18C
Solution Tank Capacity	30 liter
Recovery Tank	41 liter
Cleaning Path	45 cm (18")
Pad Pressure	30 kg
Squeegee Width	75 cm (28")
Coverage Rate (max)	1100 m ² /hr
Drive System	Pad assist
Brush Motor	750 W
Vacuum Motor	2-stage
Waterlift	158.1 cm
Power Cable	25 m
Amp.	8.8 Amp
Max Gradient	2%
Weight (machine only)	65.5 kg
Dimensions	
Length	110 cm
Width	54.5 cm
Height	97 cm

WIRING DIAGRAM FOR FANG 18C

Wiring Diagram



USE

SCRUBBER SETUP



NOTE

Read operators manual thoroughly prior to operating or servicing this machine!!!

a) PRE-OPERATION CHECKS

1. Sweep the outside of the machine.
2. Make sure the voltage of machine conform to local voltage. (220-240V)
3. Check that squeegee is properly installed.
4. Check that brush / pad is properly installed.
5. Bumper doesn't touch the floor directly. The gap between the bumper and the floor surface can be adjusted by adjusting sliding plate.
6. The forward speed of machine can be controlled by turning the butterfly nut. Turn the nut clockwise to speed up machine. Or turn the nut anticlockwise to slow down machine.
7. Make sure the working surface can support the machine weight, the gradient of the floor can't exceed the limit that machine allow.

b) INSTALLING PAD DRIVER OR BRUSH

1. Unplug machine.
2. Tilt the machine backwards, line up the drive pulley hub with the hole of brush or pad driver, make sure the three blocks are fitted into the three slots of drive pulley.
3. If a pad driver is being used, the appropriate pad should be attached to the pad driver first.
4. Plug power cord into a grounded outlet, switch on the brush motor and then pull the operating triggers gently to mount the pad driver or brush automatically.



c) INSTALLING THE SQUEEGEE

1. Loosen the two knobs on the squeegee and slide the squeegee into the slots at the rear of the squeegee bracket. (the wheels on the squeegee point to the back)
2. Tighten the knobs securely.

d) FILLING THE SOLUTION TANK

1. The fill port is located at the rear of machine.
2. Fill solution tank with water. (water temperature should not exceed 50°C) The clear tube in the back left of the machine has gallon markers to help determine the water level in the solution tank



WARNING!

Do not put any flammable materials into solution tank. This can cause an explosion or a fire. Only use recommended cleaning chemicals. Contact your janitorial supply distributor for recommendations on proper chemicals.

BASIC OPERATION



WARNING!

Do not operate machine unless you have read and understand this manual.

1. Adjust control housing to a comfortable operating height by squeezing together the two thumb levers directly underneath the housing.
2. Lower squeegee assembly to the floor.
3. Turn brush motor switch to "on" position.
4. Turn vacuum motor switch to "on" position.
5. Rotate the ball valve of solution tank to horizontal position. Solution will not begin to flow until the operating triggers are pulled.
6. To begin scrubbing, pull on one or both of the red operating triggers, when these triggers are pulled, the brush will begin to spin and the solution will begin to flow.
7. Begin scrubbing by moving the machine forward.
8. Adjust solution flow by adjusting the position of ball valve knob.

OPERATING HINTS

1. Occasionally look through the clear recovery tank lid to see if there is any foam build-up. If excessive foam is found, add defoamer to the recovery tank.
2. Occasionally view the clear tube at the back left of the machine to check the amount of cleaning solution that is left in the machine.
3. If the squeegee assembly leaves streaks on the floor, raise the squeegee off the floor and wipe the blades down with a damp cloth.
4. When the solution tank runs empty, turn off the brush switch and ball valve of solution tank. Keep the squeegee down and continue to vacuum until all the dirty water is picked up.



Warning!

Foam must not enter the float shut-off screen, or damage can occur to the vacuum motor. Foam will not activate the machines float shut-off device.



Warning!

Do not use your fingers to wipe or remove debris from the blades, as injury may occur.



Warning!

Do not keep the machine in the same position with the pad / brush spinning, or you could cause damage to the floor.

DRAINING TANKS

a) DRAINING SOLUTION TANK



NOTE

Any time scrubbing operation is completed, the solution tank should be drained and cleaned.

1. Pull down on the clear tube (back left of the machine) to remove it from the hose barb. This will allow the solution to flow freely into a bucket or floor drain.
2. Rinse the solution tank with clean water after every use. This will help prevent chemical buildup and clogging of the solution lines.
3. Once tank is rinsed, flushed and drained, reconnect the clear tube to the hose barb. Be sure the tube is pushed all the way up on the hose barb.

b) DRAINING RECOVERY TANK



WARNING!

If the recovery tank is not drained when the solution tank has been refilled, foam or water may enter the float shut-off mechanism and cause damage to the vacuum motor



NOTE

If you are storing the machine for any period of time, always leave the clear recovery tank lid off the tank so the tank can dry completely and smell fresh. Any time scrubbing is completed, or when refilling solution tank, the recovery tank should be drained and cleaned.

1. Remove the drain hose from the holder, and place the drain hose over the floor drain. Twist off the drain hose plug to begin the draining process.
2. Clean the recovery tank after every use. Use a fresh water hose to rinse out the recovery tank. Be careful not to spray water into the float shut-off mechanism.

MAINTENANCE

To keep the machine performing well for many years, please follow the following maintenance procedures.



WARNING!

Always confirm that the machine is unplugged prior to performing any maintenance or repairs!



WARNING!

***Repairs are to be completed by Authorized Service Centers only.
Any repairs completed by unauthorized persons will void the warranty.***

DAILY MAINTENANCE

1. Remove pad driver / brush and clean with approved cleaner.
2. Drain recovery and solution tanks completely and rinse out with clean water. Visually check the recovery tank for debris and clean out as necessary.
3. Raise squeegee assembly off floor and wipe it down with a damp towel. Be sure to store the squeegee in the up position.
4. Remove the float shut-off assembly and rinse it out with clean water.
5. Clean machine with an approved cleaner and a damp towel. Don't spray water to clean the outside of machine to avoid damage to motor and wiring.
6. Unplug vacuum motor from power source and hose cuff & remove the drain hose from the holder prior to removing the recovery tank when performing maintenance.

VACUUM MOTOR MAINTENANCE

1. Contact your local Viper Distributor for any motor maintenance.
2. Check the vacuum motor brushes every 250 hours, Replace the brushes when they are worn to a length of 10mm or less.

SQUEEGEE BLADE CHECK AND REPLACEMENT

1. Clean the squeegee (Fig. 4) as shown in the previous paragraph.
2. Check that the edge (M, Fig. 4) of the front blade (D) and the edge (N) of the rear blade (E) lay down on the same level, along their length; otherwise adjust their height according to the following procedure:
Open the Latch (A) to adjust the rear blade (E); then engage the Latch.
Loosen the Knob (G) and adjust the front blade (D); then tighten the Knob(G).
3. Check the front blade (D) and rear blade (E) for integrity, cuts and tears; if necessary replace them as shown below. Check that the front corner (N) of the rear blade is not worn; otherwise, overturn the blade to replace the worn corner with an integral one. If the other corners are worn too, replace the blade according to the following procedure:
Loosen the Knob (G), disengage the retainers (H), then replace/overturn the front blade (D).
Install the blade in the reverse order of removal.
Open the Latch(A) and remove the retaining strip (B), then replace the rear blade (E). Install the blade in the reverse order of removal.
After the blade replacement (or overturning), adjust the height as shown in the previous step.
4. Connect the vacuum hose (7) to the Squeegee(9).
5. Install the squeegee (9) and tighten the Knob(C).

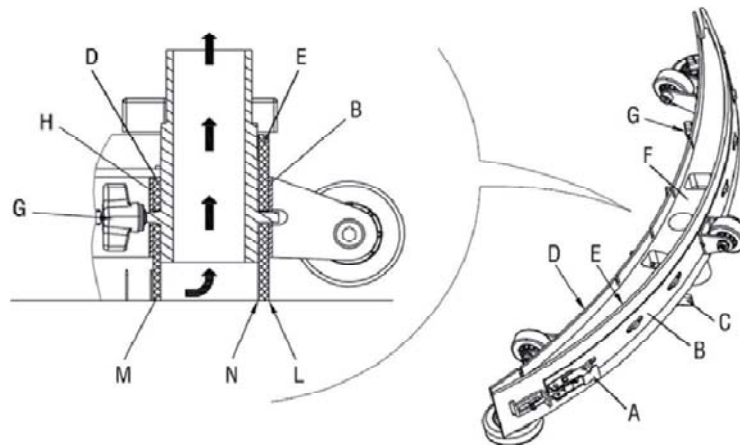


Fig. 4

BRUSH/PAD 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 from the machine, as shown in Use chapter.
2. Clean and wash the brush/pad with water and detergent.
3. Check the brush bristles for integrity and wear; if necessary, replace the brush.
4. Check the pad for wear; if necessary, replace the pad.

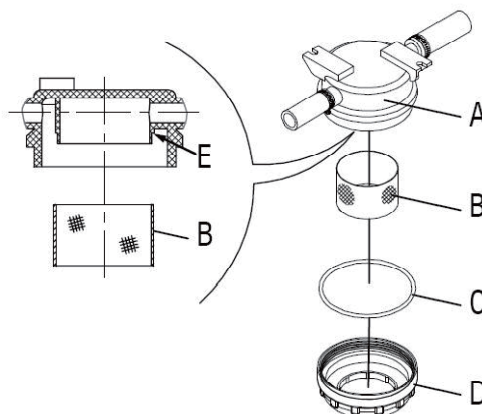
SOLUTION/CLEAN WATER FILTER CLEANING

1. Drive the machine on a level floor.
2. confirm the machine is unplugged
3. Remove the transparent cover(D),then remove the filter strainer(B).Clean and install them on the support(A).



NOTE

The filter strainer(B) must be correctly positioned on the housing(E) of the support(A).



TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
No Power	The wiring not connected correctly or bad wiring	Check the wiring or contact Viper Distributor
	Bad brush motor	Contact Viper Distributor
	Carbon brushes worn out	Contact Viper Distributor
Vacuum motor does not run	The wiring not connected correctly or bad wiring	Check the wiring or contact Viper Distributor
	Bad vacuum motor	Contact Viper Distributor
	Carbon brushes worn out	Contact Viper Distributor
Little or no solution flow	Bad ball valve	Contact Viper Distributor
	Bad solution valve	Contact Viper Distributor
	Ball valve position in need of adjustment	When ball valve is in horizontal position. The amount of solution flow is maximum.
Poor water pick up	Squeegee clogged	Clean debris off squeegee with damp towel
	Squeegee blades worn	Install new squeegee blades
	Squeegee not mounted correctly	Confirm that the squeegee assembly is securely fastened to the machine and not loose fitting
	Vacuum hoses have a hole or are loose	Check hose connections and make sure they are firm. Replace hose if damaged.
	Vacuum hose may be clogged	Check hose for debris and remove any clog.
	Drain hose stopper is loose	Tighten drain plug.
	Vacuum motor is loose	Tighten vacuum motor mounting screws. Do not over tighten or damage will occur.
	Recovery tank lid is loose	Confirm the clear recovery tank lid is securely in place.
	Recovery tank is full	Drain recovery tank
Float shut off is clogged	Remove float shut off from inside recovery tank and remove any debris	

STORAGE



WARNING!

If you are storing the machine in an area which can freeze, be sure both tanks and the solution plumbing are empty of all water and dry!

1. Always store the machine indoors.
2. Always store the machine in a dry area.
3. Always take off the pad driver / brush
4. Always store the machine with the squeegee assembly raised off the floor.
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.
6. Drain the recovery tank and remove the clear on the top of the recovery tank so that it can "breathe" during storage.
7. Drain the solution tank of all fluid.

scrapping



Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.

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