

Clemas

CLEANING MACHINES

C110S 80B SCRUBBER DRYER OPERATOR MANUAL



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INTRODUCTION

AS SOON AS THE MACHINE ARRIVES PLEASE CHECK THAT EVERYTHING IS OK,PLEASE CHECK THAT THERE IS NOT ANY DAMAGE DUE TO TRANSPORT AND CHECK TO HAVE RECEIVED ALL THE SHOWING ON THE DOCUMENTS. IN CASE OF DAMAGES OR MISSING PARTS PLEASE ADVISE IMMEDIATELY THE MANUFACTURER.

INTRODUCTION

THIS KIND OF SCRUBBER MACHINE ALLOWS THE OPERATOR TO CLEAN ALL KIND OF FLOOR AND ALL KIND OF DIRTY ,GIVING THE BEST RESULT.

YOU CAN REACH BEST PERFORMANCES USING THE MACHINE IN A PROPER WAY AND TAKING CARE OF IT.

PLEASE READ CAREFULLY THIS MANUAL WITH ATTENTION.

USE THE MACHINE ONLY FOR CLEANING PURPOSE

KEEP THIS MANUAL FOR ALL NEEDS

GOODS TO BE RETURNED

In case of goods to be returned for warranty replacement, it is necessary to have a written acceptance from

FIORENTINI technical department before sending them.

All defective parts must be carefully packed in order to avoid further damages during transport. Goods must be shipped ex-warehouse and followed by :

- **serial number of the equipment where they were installed on;**
- **item code of the defective part;**
- **detailed description of the defect and of the conditions where it happened.**

In case of defective electric or electronic goods, please return them separately from other materials, in order to help us in dividing dangerous wastegoods and recycle the (RAEE) as DER 2002/96/CEE LOW.



TECHNICAL DESCRIPTION

DIMENSION CHARACTERISTICS	SMILE 70	SMILE 80	SMILE 75
LENGTH	1350 mm	1350 mm	1350 mm
WIDTH	780 mm	840 mm	870 mm
HEIGHT	1370 mm	1370 mm	1370 mm
N° BRUSHES	2	2	2
BRUSH SIZE(DIMENSION)	ø 340	ø 390	ø 170 – L.750
WORK WIDTH	700 mm	800 mm	750 mm
SQUEEGEE WIDTH	1000 mm	1070 mm	1070 mm
SOLUTION TANK IN POLYETHYLENE	110 l	110 l	110 l
RECOVERY TANK IN POLYETHYLENE	110 l	110 l	110 l
FRONT WHEEL DIAMETER	250 mm	250 mm	250 mm
REAR WHEEL DIAMETER	310 mm	310 mm	310 mm
TRACTION	Electric	Electric	Electric
WEIGHT WITHOUT BATTERY	300 kg	300 kg	300 kg
BATTERY COMPARTMENT SIZE (l x w x h)	490x590x310	490x590x310	490x590x310
ELECTRIC CHARACTERISTICS			
ENERGY SOURCE	n°6 batteries 6V	n°6 batteries 6V	n°6 batteries 6V
VOLTAGE	36 V	36 V	36 V
BRUSH MOTOR	1100W 32A 2200rpm	1100W 32A 2200rpm	2 Motors 750W 24A
TRACTION MOTOR	600w 21A 130rpm	600w 21A 130rpm	600w 21A 130rpm
SUCTION MOTOR	850W	850W	850W
FUNCTIONAL CHARACTERISTICS			
DRIVE	On board	On board	On board
STEERING WHEEL REVOLUTION	950 mm	950 mm	950 mm
BRUSH LIFT CONTROL	electric	electric	electric
EMERGENCY BRAKE	mechanical by pedal	mechanical by pedal	mechanical by pedal
PARKING BRAKE	mechanical by pedal	mechanical by pedal	mechanical by pedal
PERFORMANCES			
FORWARD RUNNING SPEED	0 ÷6 Km/h	0 ÷6 Km/h	0 ÷6 Km/h
REVERSE RUNNING SPEED	0 ÷4 Km/h	0 ÷4 Km/h	0 ÷4 Km/h
MAX.SLOPE	10 %	12 %	10 %
MAX.SLOPE FOR REVERSAL U	5% A 1 Km/h	5% A 1 Km/h	5% A 1 Km/h
HOUR SCRUBBING WORK m ² /h	4200 m ² /h	4800 m ² /h	4500 m ² /h
ECOLOGIC CHARACTERISTICS			
NOISE AT DRIVER'S EAR	68 decibel	68 decibel	68 decibel
VIBRATION ON OPERATOR SITE	Less than 2.5 m/s ²	Less than a 2.5 m/s ²	Less than a 2.5 m/s ²

GENERAL INFORMATION

MANUFACTURER RESPONSABILITIS

The manufacturer FIORENTINI is not responsible for any inconvenient, failures, accidents, etc. due to the non-acquaintance (or non-fulfillment) of the prescriptions contained in this manual. The same applies to change's execution, modifications, and/or to the installation of accessories not preliminarily authorized.

In particular, the firm FIORENTINI is not responsible for any damages caused by:

- Natural calamity
- Erroneous operations
- No maintenance

Furthermore ,the Manufacturer is not responsible for any intervention not performed by authorized people.

INTERVENTION REQUEST

Possible intervention requests should be done after an accurate analysis of the inconvenience and their causes. In any case ,when calling the technician, report what follow:

- Model of the machine
- Serial number (fig1)
- Faults detail
- Inspections done
- Any other information considered important for this purpose
- Address the requests to authorized customer service

Fig. 1



Ing. O. Fiorentini		MADE IN	CE
S.r.l. Piancaldoli (FI)		ITALY	
Mod. SMILE	S.N.	2002	
V 36	Hz.		
Kg 420	A 70	W 2650	

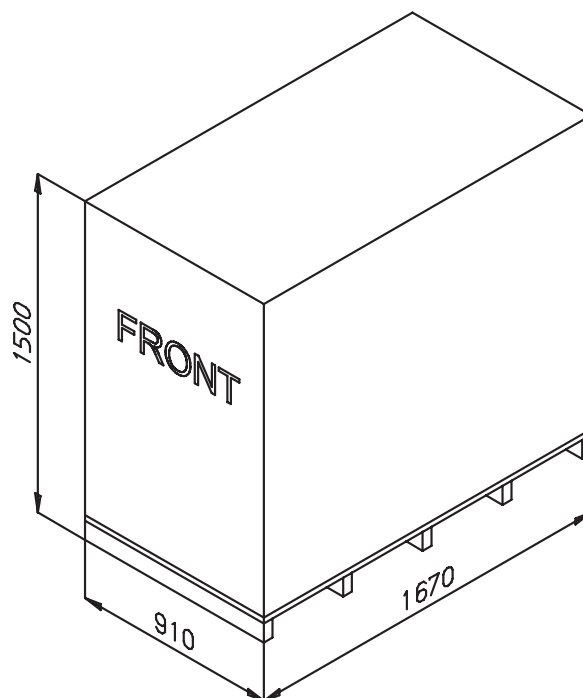
TRANSPORTATION

HANDLING OF PACKED MACHINE

The machine is supplied packed on pallet, closet in a box made of plywood or paper board .The weight and sizes are showed in the normal characteristics.

The barycentre position is indicated by black arrow on the box. The forks of the lift truck or the transpallet should be placed so that the black arrow indicated on the packing is about in the centre of the forks. The package should be handled with extreme caution ,this avoiding impacts or lifting it to remarkable heights without any reasons. it is forbidden to stack the packages one another.

Fig. 2



UNPACKED THE MACHINE

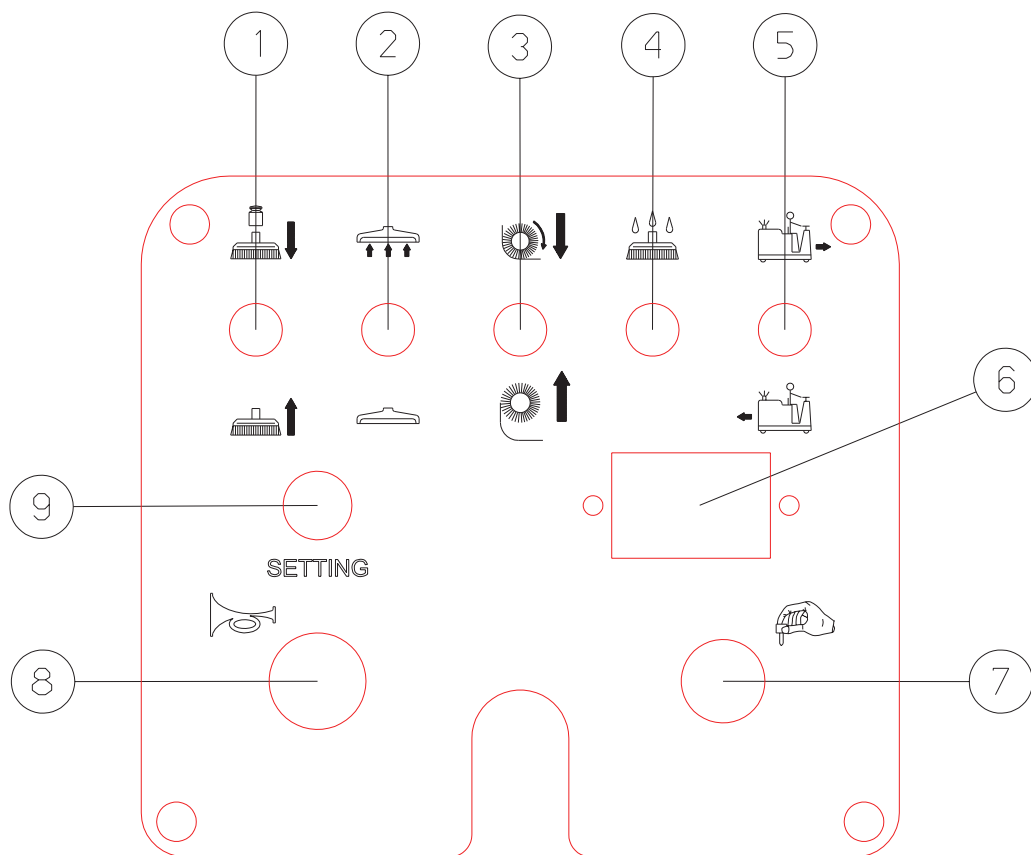
1. Cut the straps with proper cutting nippers
2. Remove the clips on the paper board to the pallet
3. In case of package made of plywood ,remove the clips on the sides and on the base of each panel as well
4. Remove the other clips fastening the machine by cutting them in the same way of external ones.
5. Brought the machine at round level

HANDLING OF UNPACKED MACHINE

1. Check the machine
2. If the machine must handled for a short transportation after being used ,please remove the brushes and the squeegee. For long transportation ,is recommended to pack the machine again in its original box



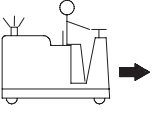
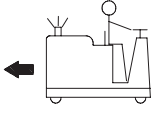
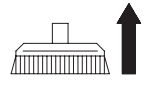
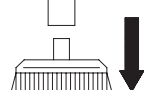
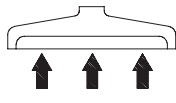
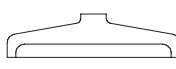
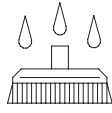
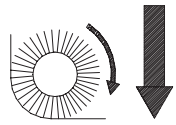
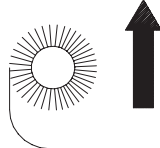
OPERATING CONTROLS

DASHBOARD CONTROLS



1	BRUSHES SWITCH
2	SUCTION SWITCH
3	PRE SWEEP ATTACHMENT SWITCH
4	ELETTROVALVE SOLUTION WATER SWITCH
5	DIRECTION SWITCH
6	BATTERY CHARGE INDICATOR
7	MAIN KEY SWITCH
8	CLAXSON
9	PARAMETERS CONNECTOR

DASHBOARD SYMBOLS

0	Closed (switch off)	1	Open (switch on)
	Main switch		Horn
	Forward running		Backward running
	Brush lifting		Brush lowering
	Vacuum by squeegee		squeegee
	Solenoid valve		
	Pre sweep attachment on		Pre sweep attachment off

USE OF THE MACHINE

SAFETY SYSTEM

The machine is equipped with safety system (emergency brake).

Current plug (fig. 3), The same is used to charge the batteries.. In emergency situation, remove this plug by its handle (fig. 4).

Before using the machine the operator must familiarize with this safety system, so if necessary the use will be known. Don't reconnect the plug before checking what happened ,if necessary a qualified technician has to inspect the machine.

Sensor: The machine is equipped with a sensor under the seat that ,without the operator sitting on, the machine doesn't switch on, besides if the operator leave the machine without switching off the main switch the machine stops itself and in order to restart is necessary: to seat on the machine, to switch off the main switch, wait some seconds and switch on the main switch.

Float: The recovery tank is equipped with a float that stops the machine in case the tank is filled too much; in this case to restart the machine is necessary to empty the recovery tank o (see pag11).

Not enough autonomy: The card that controls the scrubber machine, is equipped with a safety system that stops all the machine functions(only the traction works) when the batteries autonomy reach 20%.This system has been studied in order to protect the batteries life.



Fig. 3



Fig. 4

PARKING BRAKE

The machine is equipped with parking and service brake (fig. 5).

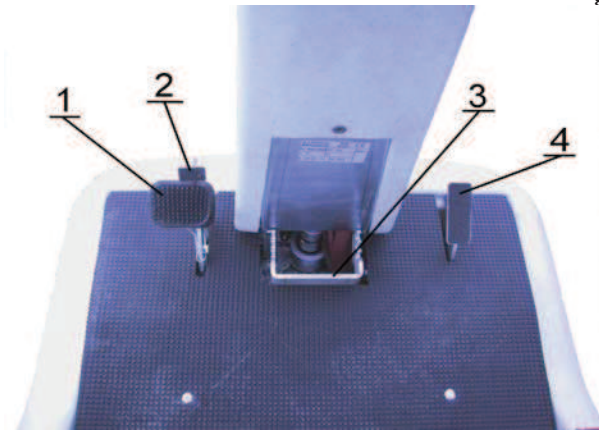
- The service brake is operated by the pedal placed on the operator's left side (1).
- The parking brake must be used by pushing completely till the end the service brake in order to stop it; to release it push the brake pedal(1) and the release pedal together (2) .

STEERING ADJUSTMENT

The machine is equipped with inclination steering adjustment (fig. 5).

- In order to adjust the inclination steering and have the best steering position push completely the adjustment pedal (3), choose the preferred inclination by moving the steering to operator's direction or push forwarder , release the steering adjustment pedal.

Fig. 5



- | |
|---|
| <ul style="list-style-type: none">1. brake pedal2. release parking brake pedal3. steering inclination adjustment4. accelerator pedal |
|---|

BATTERIES INSTALLATION

- Lift up the recovery tank in order to access to batteries box
- Install the batteries as per picture fig. 6-b
- Never add distilled water after recharging the batteries
- Clean the surfaces that are in contact with the connections

Fig. 6-a



Fig. 6-b



BATTERY CHARGER INSTALLATION

- Install the battery charger in a ventilated and dry place, far from heat sources and corrosive environments.
- Make sure that the voltages are correct. Protect the mains with a delayed switch or with a load fuse higher than the max. power consumption of the battery charger. Observe the polarity of the battery socket (black and red cables are identified by symbols +, -).

CHOOSING THE DETERGENT SOLUTION

For a good floor cleaning, it is important to choose the proper detergent solution. If necessary, ask the supplier or competent person for the proper solution. Keep in mind that a too strong chemical agent can compromise the long life of each machine. It is necessary to use a low-sudsing detergent solution, or an antifoaming additive, in order to avoid to damage the vacuum motor; if it is impossible to get these products, use some vinegar to avoid foam, put 50cc of it in the recovery tank before scrubbing.

STARTING AND PREPARING THE MACHINE

If the scrubber is connected to the battery charger (having finished the charge operation), remove the battery charger plug from the socket coming from the batteries. Then connect the batteries plug to the machine plug (see fig. 4); then proceed with water loading by lifting up the recovery tank and unscrew the solution tank cap.

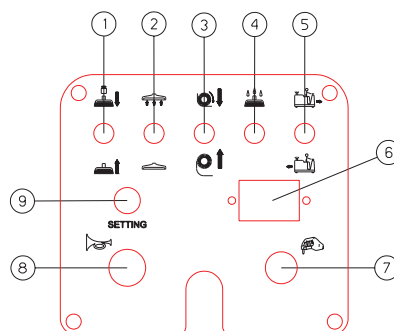
Now the machine can be used by switch on the main switch and with the operator seat on board. Now is possible to start scrubbing.

HOW TO USE THE MACHINE

The scrubbing operation is very delicate, as the operator's experience must be used to decide upon the brush type, the requirement of a possible double scrubbing operation, the right chemical choice and the right machine adjustments: if one of these items are inadequate, the scrubbing operation can give very poor results.

In order to start to scrub it is necessary to switch on the brush switch (1), the solenoid valve switch (4) and the suction switch (2); the scrubbing brushes and the suction motor will start to operate as soon as the operator pushes the accelerator pedal and after 5 seconds the operator will release the accelerator pedal both the brushes and vacuum motor stop.

As soon as the scrubbing operation is finished it is necessary, before the suction operation is finished, to switch off the solenoid valve. If the floor is very dirty or difficult to be cleaned, a double scrubbing operation is recommended. In this first step, the squeegee must be lifted up and the brushes must be in working position. Start the brushes and pass the machine over a surface of some tenth sq.mt. Let the detergent solution on the floor to dissolve the dirt, then pass the machine again. For this second machine passage, lower the brushes and bring the squeegee in contact with the floor.

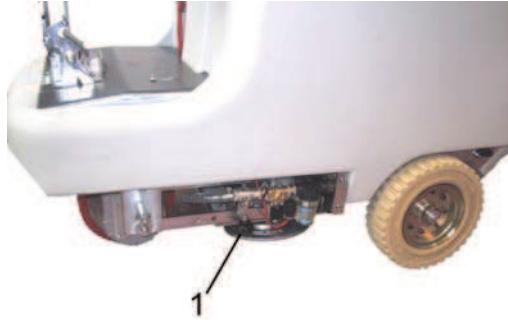


SOLUTION FLOW ADJUSTMENT

The quantity of solution flow that is requested can be adjusted by knob tap placed on the lower left side of the machine

Important: in the case is necessary to adjust the solution flow, be sure that to have removed the main switch from the dashboard in order to avoid any accident.

Fig. 7

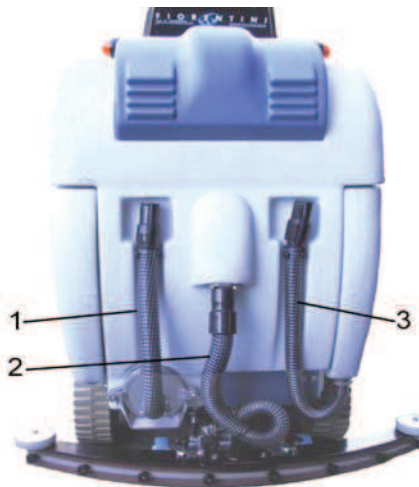


1. solution flow knob adjustment

WATER DISCHARGE

The scrubber machine is equipped with no.2 discharge water hoses (Fig. 8):

In order to discharge the water from the tanks is necessary to remove the clean or dirty water hose or both and open the rubber cup .



1. recovery tank hose
2. squeegee suction hose
3. solution tank hose

Fig. 8

SQUEEGEE ADJUSTMENT

The squeegee must be perfectly adjusted to get a perfect floor drying. The machine is equipped with parabolic-shaped squeegee, as shown in Fig9.

- Remove the main switch from dashboard .
- In order to ad just the squeegee inclination please use the knob (fig. 9-a). The correct pressure will be reached when the blade edge touch the floor with an inclination of 45° - 60° .
- In order to adjust the squeegee pressure is necessary to operate on squeegee wheels pins. Is necessary to unloose the screw placed on the pin end (fig. 9) and adjust the pin, whit the special tool (fig. 9-c), in order to reach the wished pressure, fix now the screw o (it is very important that the No.2 wheels have bee adjusted in the same way).

Fig. 9-a

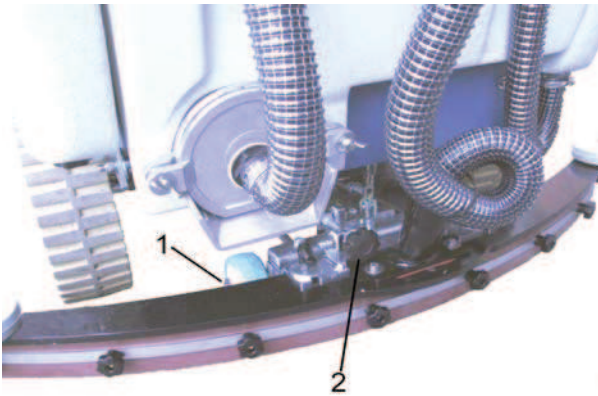


Fig. 9-b

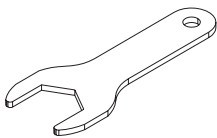
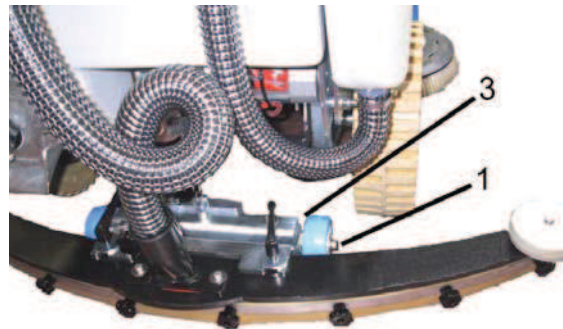


Fig. 9-c

- | | |
|---------|---|
| 1. | screw to fix squeegee pressure adjustment pin |
| 2. | squeegee inclination adjustment knob |
| 3. | area where the special tool must be put |
| fig.9-c | special tool |

BRUSH REPLACEMENT

In order to replace the brushes(Fig10) is necessary to proceed in the follow way:

- Extract the main key from the control dashboard in order to avoid any accident.
- -Remove the brush covering carter unloosing the knob (fig. 10-a) and rotating the carter towards external direction.
- For the machine equipped with frontal brushes is necessary to remove the brushes covering carter by pulling it towards the front side of the machine.
- Release the brushes by rotating them in the follow way:
 - Right brush in anti-clockwise direction.
 - Left brush in clockwise direction.
- After this operation please remember to put again the brushes covering carter and fix them through knobs.

Fig. 10-a



Fig. 10-b



- | |
|-------------------------------|
| 1. brush covering carter knob |
| 2. pintle brush |
| 3. brush |
| 4. brush cover |

SCRUBBING WIDTH ADJUSTMENT

The scrubber machine width can be adjusted , 70 cm. to 80 cm.

This operation can be done only if the different brushes ,brush covering cater and the squeegee.

Scrubbing width adjustment for Central brushes version:

- Extract the main key from the control dashboard in order to avoid any accident.
- Remove the brush covering cater as per explanation n(brush replacement).
- Modify the width of the two brush plates by operating on the adjustment lever placed on the lower side of the machine(Fig. 11); The lever must be lifted up lightly in order to unhooked itself from its standard position ,move and lower it from left to right position or in the other hand..
- Put the brushes of the wished size (brush Ø 340mm for 70 cm version., brush Ø 390 mm for 80 cm. version).
- Put the brush covering carter (the left brush covering carter remains the same for both versions, the right ones must be replaced).
- Replace the squeegee and put the one wished.

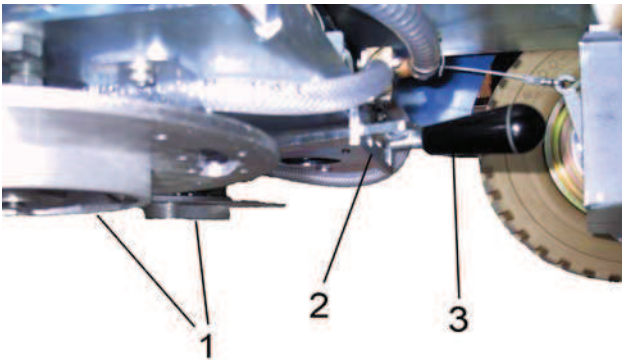


Fig. 11

- | | |
|----|---|
| 1. | brushes plate |
| 2. | bracket to fix the adjustment plate lever |
| 3. | adjustment lever |

Scrubbing width adjustment for front brushes version:

- Extract the main key from the control dashboard in order to avoid any accident.
- Remove the brush covering carter and the brushes as per above description(brush replacement).
- Modify the width of the two brush plate by operating on the adjustment lever placed on the front side of the machine (Fig. 12);The lever must be lifted up lightly in order to unhooked itself from its standard position ,move and lower it from left to right position or in the other hand.
- Put the brushes of wished size (brush Ø 340mm for 70 cm. version, brush Ø 390 for 80 cm version.)
- Put the brush covering carter.
- Replace the squeegee and put the one wished .

SAFETY, MAINTENANCE AND INSPECTION

GENERAL SAFETY RULES

Before using the machine, instruct all operators to read carefully the charter "SAFETY STANDARDS" "WARNING".

- The manufacturer can make any changes to the machine, for constructive or commercial reasons, without being obliged to change the instruction manual at the right time according to these modifications.
- The person responsible for the machine must adhere to CEE rules and to the local standards as well, regarding the working environment for operator's safety and health purposes.
- Before starting the machine, always perform the preliminary checks. The safety standards which involve any dangers, mentioned in the manual text, can be recognized by the symbol: CAUTION.
- Beyond the standard listed hereunder, the person responsible for the machine must comply with the rules provided by the law in force regarding personnel's safety and health in the working stations. Furthermore, the person responsible for the machine must instruct the operators on what follows:
 - Safety and accident prevention standards
 - Specific standards regarding the machines
 - Location on the machine of emergency pushbuttons or similar mechanism, for a prompt operation. The fixed or movable protections (carts) should always remain in their position, correctly fixed with perfect integrity during all procedures regarding the normal operation. If, for any reason, the carts are removed, their efficiency should be restored before restarting the machine.
 - Use the machine only under technically unexceptionable conditions and in compliance with its destination, by observing the safety and prevention standards according to the prescriptions contained in the instruction and maintenance handbook.
 - Remove (or let remove) immediately any failures which could compromise the safety.
 - The machine is designated to be used as a scrubber; any other different use doesn't not comply with its destination. The manufacturer/supplier takes no responsibility for any consequent damage.
- DANGER
It is absolutely forbidden to suck inflammable and or toxic liquids and powders
- DANGER
It is dangerous and absolutely forbidden to touch the lower part of the machine with the hands when some parts are moving. Should it be absolutely necessary, remove the main key from the control dashboard.
- CAUTION
On this rider on machine the rotating headlight should constantly operate and must be switched on when turning the key switch.

CAUTION

Keep in mind the following standards; failure to adhere to these rules can endanger the life of the operator or of other people. Always keep a sufficient distance from the sidewalk edges and from large differences in height of the floor where the machine can fall; never adopt a work technique that

can compromise the stability of the machine. Never pass through slopes in trasversal direction; when going through a downhill road, always adjust the speed to the environment conditions. Do not turn the machine at excessive speeds, particularly if the floor is not flat.

CAUTION: DANGER

Never operate the machine when stopped for special operations (setting up, maintenance, etc.). Before starting the work, check for any possible visible defects on the safety devices, and the correct operation of the emergency stop pushbutton or of the equivalent mechanism . Never operate the machine when the control panel indicates defective tools, warning lights, etc.

MAKE SURE THAT:

- No strangers are present near the machine
- No strange objects (appliances, cloths, etc.) are on the machine
- The machine does not emit strange noises after its starting; if so, stop it immediately and detect the cause.

All doors and protections are regularly closed.

Never let approach strangers near the machine. Use, maintenance and repair of the machine are allowed only to operators authorized by the person responsible of the machine, who knows the manual contents. These operators should be persons physically and intellectually fit for this work, not under alcohol or drug effects.

MAINTENANCE INSTRUCTIONS

During the scrubbing operation, the maintenance of the machine and the replacement of parts, it is necessary to extract the ignition key.

Instructions for battery:

- when charging the battery, let the battery cover open
- do not use free flames and do not smoke near batteries
- caution: liquid is corrosive
- do not cause sparks near the batteries
- battery gases are explosive
- do not cause any short-circuits
- do not invert polarities

GENERAL NOTE

For any maintenance, revision or repair, engage qualified personnel or call an authorized workshop. Use only original fuses with the prescribed current intensity. In case of a power failure, disconnect the machine or the plant immediately. The electric installation should be periodically inspected and checked. Any possible failure, such as detached connections and burnt cables should be immediately removed.

CAUTION

To clean the machine, use aggressive detergent solutions, acids, etc. only when necessary and with special care. Adhere to all instructions of the detergent manufacturer. Use protective clothes (overalls, gloves, protective glasses, etc., see CEE standards).

OPERATIONS ON THE ELECTRIC INSTALLATION

The operations on the electric installation can be performed only by QUALIFIED ELECTRICIANS, instructed in the electric characteristics of the machine and in accident prevention rules.

CHECKS

The machine must be inspected by a technician, who checks the safety conditions of the machine and any possible damages or defects visible from outside:

- before setting the machine at work
- after appropriate time intervals
- after any changes or repairs

- safety device control

SAFETY DEVICE CONTROL

All six month, check the efficiency of the safety devices, the inspection should be performed by qualified personnel of FIORENTINI s.r.l. or authorized by it. To grant the efficiency of the safety devices, the machine should be overhauled by a technician of FIORENTINI every 5 months.

ANNUAL CHECK

The responsible person should perform an annual check to determine if the machine complies with the technical safety standards. After this check, the responsible person should apply a test plate on the machine.

INFORMATION FOR USING THE MACHINE IN EXPLOSIVE ATMOSPHERE

The machine has not been designed to work in environments in which explosive gas, powders or steams can be generated.

DANGER

To drain the liquids used for floor scrubbing, follow the local standards concerning the elimination and purification.

INFORMATION CONCERNING THE MACHINE DEMOLITION<R>(CEE STANDARDS)

In case of machine demolition, it is important to subdivide the different types of materials composing the machine and deliver the batteries to operators authorized to their elimination.

BATTERY TECHNICAL CHARACTERISTICS

TENSION	V 6
CAPACITY	240 A/h
WEIGHT	40 Kg
SIZE (H.x W x.L)	240 x 180 h 280

BATTERY CAHRGER TECHNICAL CHARACTERISTICS

IN	V 230, Hz 50, A5
OUT	V 36, A 30

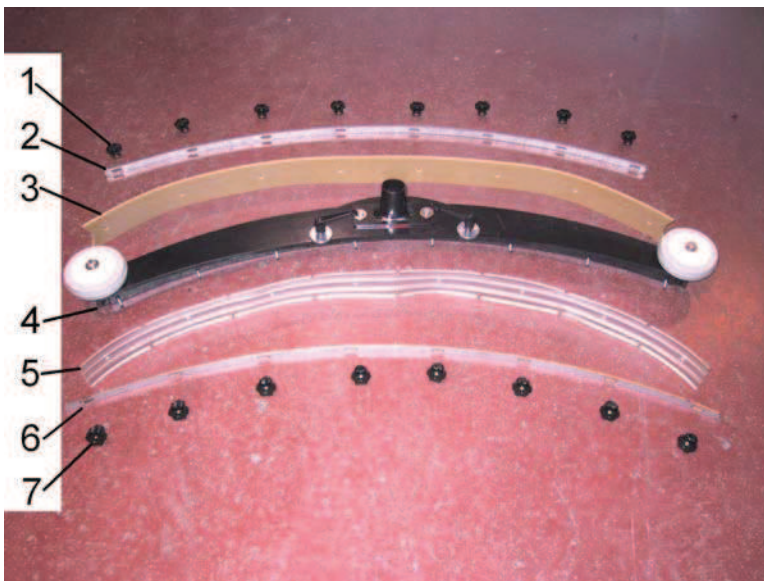
This kind of battery charter can charge all brand name of batteries.

SQUEEGEE BLADES REPLACEMENT

The squeegee blades(13) should be replaced when the contact edge becomes worn :the edge perfection is essential for a perfect drying. To replace the blade:

1. The squeegee must be disassembled from the machine and placed on the desk.
2. Now, remove the knobs (1) both on the front and rear part of the squeegee, the steel straps and remove worn rubber blades.
3. Change the blades and assemble again the squeegee. Adjust the squeegee.

Fig. 13



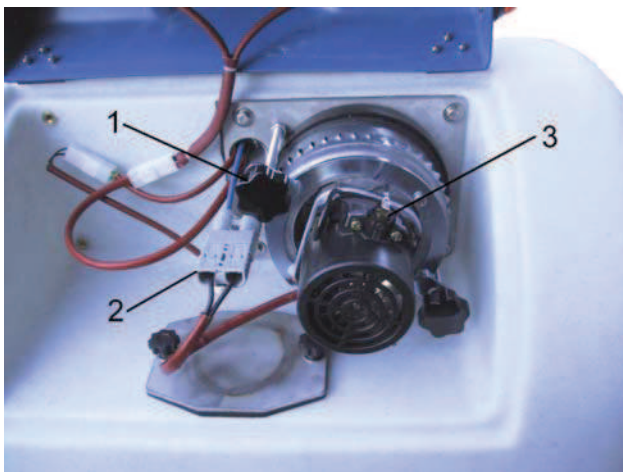
1. rear knobs
2. rear steel strap
3. front blade
4. squeegee body
5. rear blade
6. front steel strap
7. front knobs

VACUUM MOTOR MAINTENANCE

The vacuum motors must be checked and cleaned .The brushes should be checked all six months and replaced, if necessary.

1. After removing the key from the control dashboard ,remove the vacuum motor by loosening the knobs and by removing the connection plug (fig. 14)
2. Release the sponge filter under the motors that can be extracted ,cleaned and replaced.
3. Check the suction fan from the hole located in the front part of the vacuum motor.
4. To check the brushes, first of all remove the plastic cap, then unscrew the screws and remove the two plastic brushes supports.
5. Once checked and replaced(if necessary)the brushes can be easily remounted ,by reassembling all elements until the initial situation has been reached.

Fig. 14

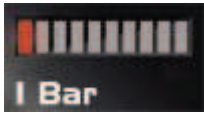


- | |
|-------------------|
| 1. motor knob |
| 2. connector plug |
| 3. carbon brush |

CAUTION

Each maintenance and repair operation not described under the “ordinary maintenance” should be performed by qualified personnel authorized by FIORENTINI SRL only.

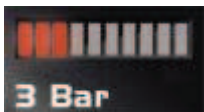
DIAGNOSTIC MESSAGES



Low Battery Voltage



Traction Motor Fault



Brush Motor Fault



1 flash **Brush Lift Actuator Fault**
 2 flash **Squeegee Actuator Fault**



Vacuum Motor Fault



Recovery Tank Full



1 flash **Throttle Fault**
 2 flash **Main Key Fault**
 3 flash



Control System Fault



1 flash **Flashing light Fault**
 2 flash **Reverse Speed Buzzer Fault**
 3 flash **Solenoid Valve Fault**
 4 flash **Electric Horn Fault**
 5 flash



High Battery Voltage