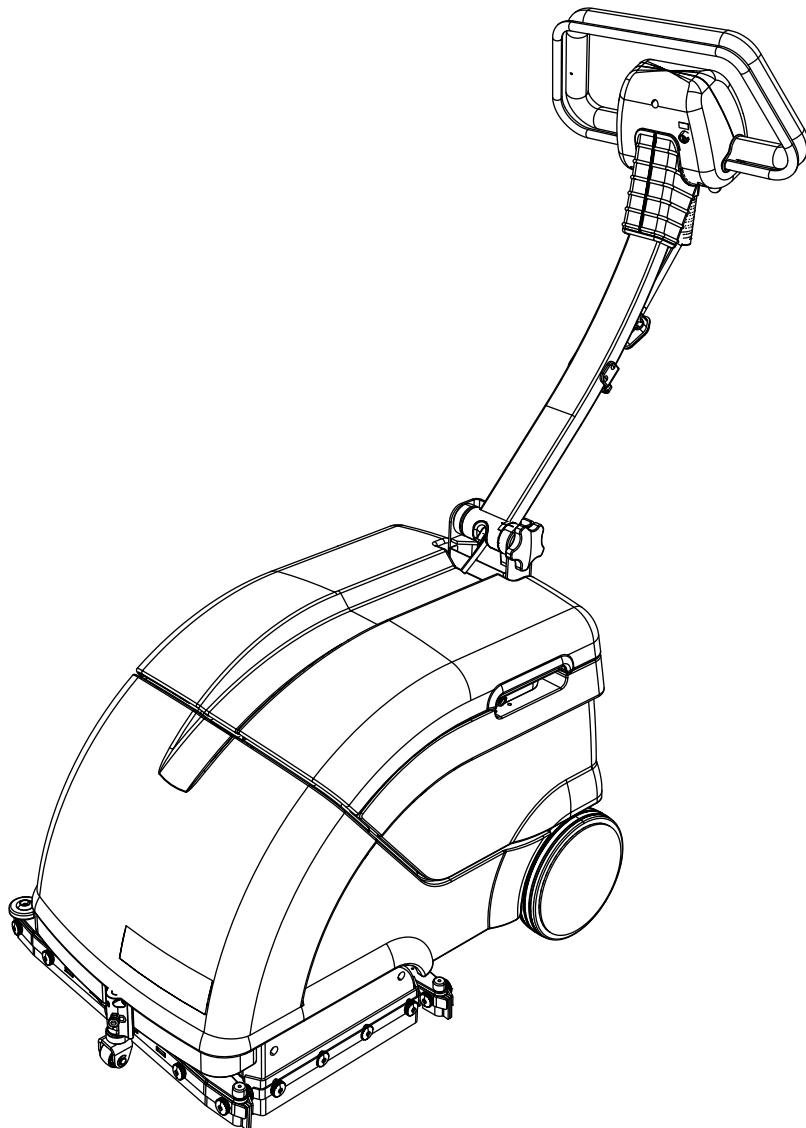


# RootsScrub E 350

Walk Behind Floor Scrubber Drier



## Instruction Manual & Illustrated Parts List



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Please be advised explicitly that we cannot accept any legal claims out of the contents of this manual. If repair work has to be performed, make sure that only genuine spare parts are used since genuine spare parts only may guarantee continuous and dependable operation of your machine.

Roots Multiclean Ltd.  
RKG Industrial Estate,  
Coimbatore - 641 006, India.

## Preface

Dear Customer,

We are pleased with your having chosen the **RootsScrub E350** machine for your floor cleaning requirements. Backed by our industry expertise that spans across decades, we assure you that the machine comes with our Roots promise of quality, efficiency and performance.

We advise you to carefully read through the instructions prior to the operation of the machine. This manual contains detailed instructions for the proper operation of the machine, along with important information regarding its handling, care, maintenance and service needs.

We are sure that you will find the machine and its performance to your utmost satisfaction. Once again, we thank you for choosing Roots Multiclean as a trusted partner for your cleaning requirements and solutions.

## Usage and Handling

Use of the product beyond the specified scope of functioning is deemed improper and the manufacturer cannot be held liable for any damages which may arise due to this.

This machine may be used only by persons who are trained or are familiar with the machine and are aware of the possible hazards involved. The appropriate Accident Prevention Regulations as well as applicable general regulations pertaining to Safety and Health at the work place must be adhered to by the user.

Modifications made to machine without the manufacturer's consent will relieve the manufacturer of responsibility and any possible liability for consequential damage.

## Notes on Domestic Warranty

Please refer to the **Limited Warranty card supplied along with the machine** for additional information. This Warranty Policy is applicable only for the product sold within India. If the product requires repair or maintenance work to be performed, please ensure that you get the machine serviced from an authorised service centre or dealer of RMCL to ensure that the warranty is not void.

## Acceptance of the Machine

On arrival of the machine at the shipping address, please check for any damage that may have occurred as a result of transit. In the event of any such damage, the purchaser is bound by responsibility to send a claim letter to the concerned branch/dealer with a copy of the invoice. The letter should be sent within 24 hours of receipt of the machine.

## The Manual

All information contained is without obligation. RMCL particularly reserves the right to modify any equipment, technical specifications, colours, shapes, materials and the like so as to adapt them to local conditions all without previous announcement and without giving reasons. RMCL may stop manufacturing certain models without previous notice.

The Owner's Manual corresponds to the latest information available for this machine at the time it was printed. Minor deviations resulting from enhancements of the design cannot be entirely represented.

The Owner's Manual is an integral part of the machine and must not be misplaced.

Roots reserves the right to change the product or contents of this manual without prior information.

For Battery, Motors, Engines and other OEM components related kindly refer to their manufacturers manual supplied along with the machine for instructions regarding usage, maintenance and service.

Please note down the serial number of your machine below:





Serial number:

Date of commissioning:

Description	Units	Values
Scrubbing width	mm	350
Effective suction width	mm	450
Theoretical area coverage	m <sup>2</sup> /h	1400
Working speed, up to	km/h	4
Airflow rate	L/sec	38
Vacuum pressure	mm of H <sub>2</sub> O	1563
Power supply	V/Hz	230 / 50
Total power	W	1340
Brush motor	W	600
Vacuum motor power	W	850
No. of brushes	No.	2
Diameter of brush	mm	100
Brush speed	rpm	650
Brush load	kg	19
Fresh water tank	L	10
Dirty water tank	L	11
Dimensions (L x W x H)	mm	700 x 470 x 540
Total weight empty	kg	43
Total weight ready to operate	kg	53

## Safety & Warning Symbols

All paragraphs in this manual referring to you personal safety, the safety of your machine and the environment protection are attributed one of the following warning symbols.

Symbol (Hazardous for)	Description
Safety Provisions (persons and goods) 	Safety provisions in dangerous situation caused by misuse inaccurate adherence of instruction or prescribed work routine.
Caution (the machine) 	Important information on handling the machine in order to maintain operability.
Ecological hazard (the environment) 	Due to use of substances representing an inherent danger to health of environment.
Read Manual 	Prior to first operation, read the manual carefully and strictly comply with the instructions contained.

## General Guidelines

- In addition to the information contained in this manual, generally applicable legal provisions for Safety and Prevention of accidents must be adhered to.
- Please go through the manual and the instructions contained herein carefully, even if you possess prior experience in operating similar ground cleaning equipment.
- Schedule some time for the careful and thorough perusal of the manual contents.
- The responsibility of all persons in the working area fall upon the operator of the machine.
- No persons, children included, should be allowed within the zone of danger.
- The warning and instruction plates attached to the machine carry important advice on safe operation of the machine.
- Lost or illegible stickers must be replaced at the earliest.
- Prior to operation of the machine, the operator must ensure that the machine and its working implements are in proper and safe operating condition.
- Machines with identified and known defects must not be used.

- It is important that operators and all persons likely to use the machine familiarize themselves with all accessories and controls, as well as their functions, before commencing operation.
- Adherence to the above general instructions will help avoid the operator from having to read the manual while operating the machine.

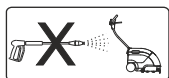
## Safety during machine operation

- The machine is applicable for **WET** scrubbing only.
- Ground cleaning machines may be run by qualified personnel only.
- The machine may be used for cleaning such surfaces approved by the owner or this authorized representatives.
- The machine is only suitable for use on the types of surfaces specified in the owner's manual.
- Protect the machine from frost or extremely low temperatures.
- Never vacuum up explosive liquids, combustible/explosive dusts as well as acids and solvents! This includes diesel, petrol, kerosene, paints, paint thinners, heating oil, etc which can generate explosive fumes on contact with the suction air. Acetone, undiluted acids and aggressive solvents must not vacuumed as may cause damage to the machine components and brooms.
- Do not scrub/vacuum burning or glowing debris.
- Do not scrub/vacuum in flooded and slushy areas.
- This machine must not be operated by persons (including children) with limited physical ability, sensoric/mental capabilities or lack of experience, unless such persons are supervised by the person in charge.
- Children should be prevented from playing with the machine.
- The operator must use the machine properly. The operator must consider the local conditions and must pay attention to third parties especially children when operating the machine.
- Never leave the machine unattended when the motor is running.
- The operator must leave the machine only after the motor has come to a complete standstill.
- Prior to starting work, the operator has to check the machine's safety devices are working properly.
- The operator must wear tight fitting clothes only. The operator should wear safety shoes only when operating or while carrying out maintenance work.
- Loose fitting clothes or shoes must not be worn by the operator or any maintenance personnel who are intended to work on/with the machine.

- Check the immediate surrounding prior to starting. Ensure sufficient visibility!
- The operator must always use safety gloves, safety helmet, shoes while operating/maintaining the machine.
- On inclined/tilted surfaces, the tilt angle and the driving direction should not exceed the values given in this manual.
- Do not place any tools or metallic objects on top the battery. Risk of short circuit and deflagration!
- Smoking or naked flames are strictly prohibited.
- Always allow the machine sufficient time to cool before carrying out any repair or maintenance work.
- Ensure that there is adequate ventilation for diverting the exhaust gases/dust when operating the machine in a closed area.
- Do not place hand or any object while the brushes are running.
- Suitable tools must be used for cleaning and maintenance work.
- Do not carry out any welding, drilling, sawing or grinding work on the frame sections. Damaged parts may only be changed at an authorized service center.
- It is not permitted to use aggressive and corrosive cleaning agents.
- Used batteries with the recycling symbol must not be disposed of in household waste.
- Maintenance work may be carried out by authorised dealer only.
- Always use appropriate tool and equipments while working on the machine.
- The cable must not chafe against anything. In the case of defective insulation, do not use the on-board charger.
- Do not use harsh chemicals to clean the machine.



This machine is not suitable for evacuation of dusts, which are explosive or dangerous to health.



Do not clean the machine by means of vapour jet or high pressure cleaning equipment.

- Before operating the machine kindly use these safety devices:

- a) Shoes
- b) Gloves

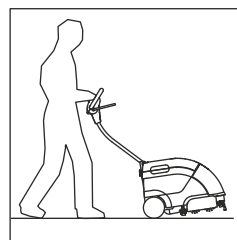


- Do not smoke near machine.
- Do not expose machine to naked flames or burning debris.

## Handling of line cords

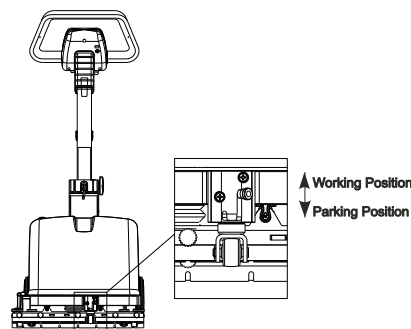
- Make sure that the line cords are not damaged by running over, squeezing, dragging, etc.
- The line cords must be checked regularly with regard to damage and aging.
- The machine must not be used unless the line cords are in proper condition.
- Use only original extension cables, with maximum admissible length of 25 m.
- When using or replacing line cords, it is necessary to adhere to as specified by the manufacturer.
- When replacing coupler plugs of line cords or connecting leads, splash-proof protection and mechanical strength must be guaranteed.

## Transport



For easy transportation of machine, it is recommended to lift up the brush head and squeegee as represented, prior to transportation of the machine.

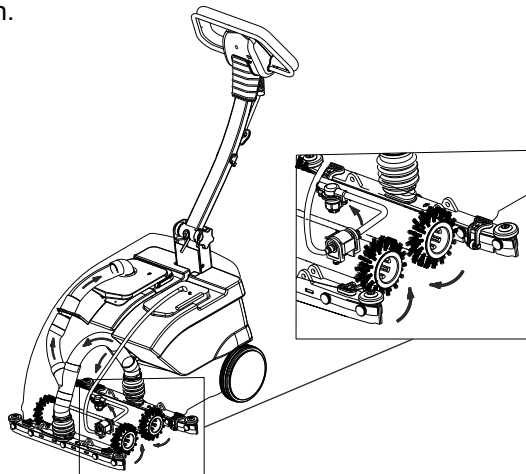
## Park Position



If not operated, the machine has to be stored in its park position. This position is attained by using the support roller located at the front of the machine as represented. Actuate the support by a lever located above the support roller (see Fig.) And the brush head of the machine is lightly lifted. This is to preclude deformation of the brushes.

## Principle of Operation

A squeegee and suitable brushes or pads are required for wet cleaning of hard floorings. The rotating brush scrubs the floor thoroughly, removing dirt through suds, thereby cleaning the floor. The soiled water is drawn during the same cycle through the squeegee. Thus, the floor can be walked on immediately after it is dry and clean.



## Useful Tips:

- Prior to wet cleaning, it is necessary to clean the floor.
- This way, not only is the cleaning efficiency improved, but wear of the brush is also substantially reduced.
- If floors are particularly dirty or if wax has to be removed (basic cleaning); the floor must be treated twice.
- During the first cycle, the floor is scrubbed with the cleaning agent selected according to the degree of dirt encountered, the squeegee remaining lifted.
- Allow the cleaning agent to act on the floor for approx. 5 or 10 minutes, complying with the manufacturer's instructions.
- Scrub the floor once again while the squeegee is lowered.
- Too much foam indicates excessive dosage or improper suitability of detergent for the existing kind of dirt.
- Detergent particles contained in the soiled water that are not used will cause formation of foam.
- Instructions for dosage are given on the detergent tank and must ideally adhere to manufacturer's recommendations.
- The ideal type of detergent and the perfect dosage applicable to it will come through sustained use of the machine.



Comply with instructions for correct dosage of detergent. Correct dosage will help optimize costs and also minimize impact on the environment. Too much foam can affect the performance of the machine.

## Unpacking:

- The machine is packed in a cardboard box.
- The floor consists of a wooden platform where the machine is fixed through hooks.
- Open the box from its bottom side and remove it by pulling upwards. Then unscrew the hooks from the pallet and take the machine.

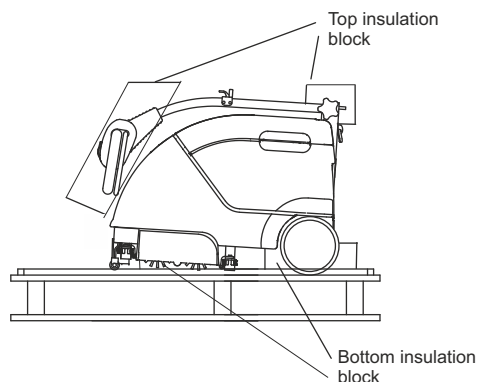
**Owner's personnel are not allowed to unpack the machine.**

## Before Operation:

1. Upon delivery, the machine has been secured by insulations blocks and hooks at the bottom to preclude unwanted movement of the machine. After taking the machine from the pallet
- Open the cardboard box at the top side and pull upwards to remove it.
- Remove the hook by loosening the screws.
- Lift the brush head to up position by using pedal.
- Take the machine off the box and avoid any damage to the machine.
- Remove the nut from the plank in order to remove the brush from the pallet.

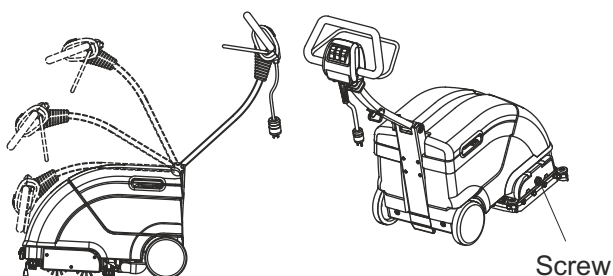


Qualified personnel only are admitted to open the machine; Any work such as e.g. maintenance or repair actions at the electric components have to be executed with adequate tools only and by qualified personnel only.



2. After taking the machine to its park position, set the operating handle into its working position by releasing the button at the side. After the handle has been set into service position, engage the button again to preclude the handle from displacing. After operation, the handle can be folded back again as described above. In this folded position the handle is protected against the damages and requires less storing space.





3. Open the lateral brush head cover by loosening the screw. Then insert the enclosed brushes into the housing. The machine has been equipped with screws to facilitate removal and fastening of the brushes.

4. After folding of the lid, filling of the fresh water tank is possible. Before filling with fresh water, take the support roller out of its parking position.



**Make sure that all covers and flaps have been fitted before starting operation.**

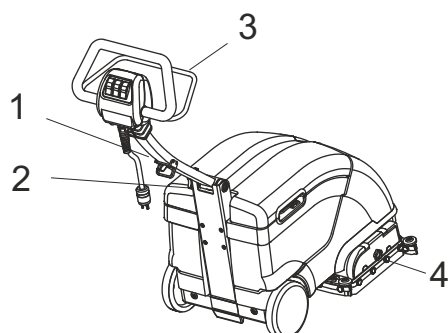


**A damaged mains cable has to be replaced by specific cable available at the manufacturer or an Authorized service center.**

## Handling Mains Cable Assembly

Make sure that the mains cables are not damaged by passing over them by pinching, pulling or other impacts. Check the mains cables for ageing and damages at regular intervals. Replace them by the type H05VVF3Gx1.5 as specified by the manufacturer. When replacing the coupling plug of the mains cable or when connecting lines respect the splash water protection and the tensile strength of the components.

## Operating & Indicator Elements:

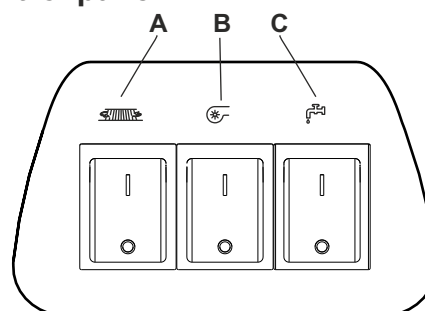


1. Adjustable handle
2. Button for Handle
3. Squeegee Governor (forward, reverse)
4. Screw for brush removal

## Controls

- Brush motor
- Suction motor
- Water pump switches

## Control panel



### A. Brush motor switch ON / OFF

- Function in ON if switch "A" is in position "I"



### B. Suction motor switch ON / OFF

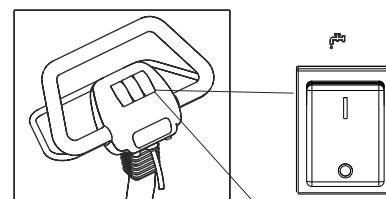
- Function in ON if switch "B" is in position "I"



### C Water pump switch ON / OFF

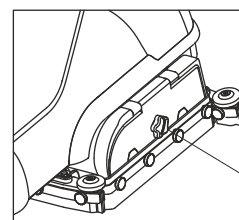
- In "I" position of the switch, water is steadily pumped to the floor.
- In "0" position of the switch, no water is pumped.

## 2. Detergent infeed



Pump Switch

- The machine allows mixing of cleaning lye and fresh water in the tank. The amount of detergent required for cleaning can be regulated by the pump switch. If the switch is set to the position "I" the cleaning lye is continuously supplied. If the solution is required by intervals only, press the switch and hold in position "I". This function helps to save detergent.

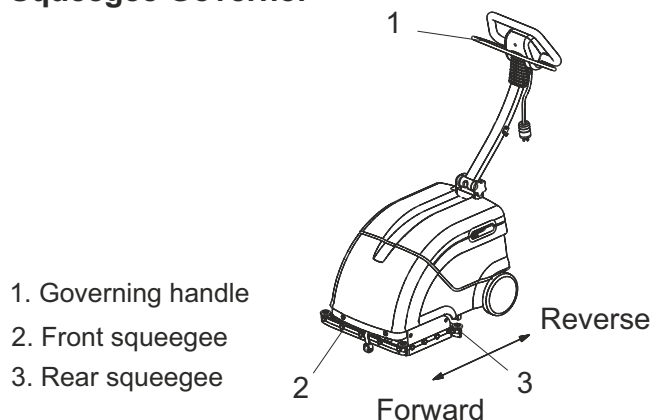


Knob

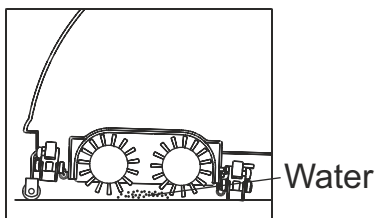
Disconnect the mains plug before mounting or dismantling the brush. Loosen the knob for fitting the brush before use of the machine and afterwards for removal of the brush. Change the brush position after each use in order to preclude one-side wearing.

- Loosen the knob before dismantling the brush from the machine.
- Dismount the brush from the machine after every use. Take the machine into the park position before dismantling.

## Squeegee Governor



- The front or the rear squeegee of the machine is lowered and has contact with the floor. The operator may change squeegee position according to the direction of travel of the machine.



- If the machine is in its working position and pushed forward, the rear squeegee has contact with the floor while the front squeegee is lifted.

## End of operation

Due to the counter-rotation of the brushes, some water remains between the brushes at the end of operation. Proceed thus as follows at the end of operation

- Take the machine into park position
- Turn suction motor on
- Move the machine a little bit forward

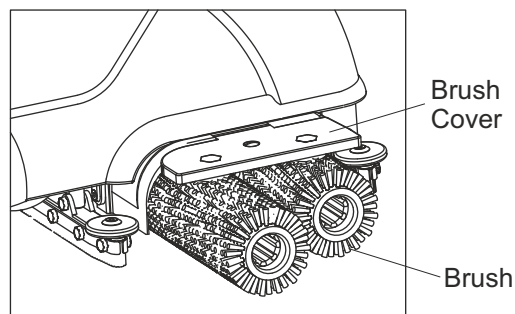
During this movement, the rear squeegee takes in the water.

## Mount / Dismount brushes

According to the type and degree of soiling, the machine can be equipped with brushes from the accessories.

### Mount Brush

- Use the support roller located at the handle side of the machine to set the machine into its park position.
- Remove screw of the brush cover.
- Fasten supplied brushes at the drive rollers at the inside of the opposite cover.
- Close brush cover such that the guiding rollers and the brushes safely catch.



**When mounting, check the safe catching of rollers and brushes.**



**Before cleaning or maintaining the machine as well as before replacing parts of it, turn the machine off and disconnect the plug.**

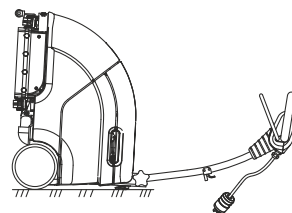
### Dismount Brushes

- Use the support roller located at the handle side of the machine to set the machine into its park position.
- Loosen screw.
- Open brush cover and remove brushes. Re-close cover and tighten screw.

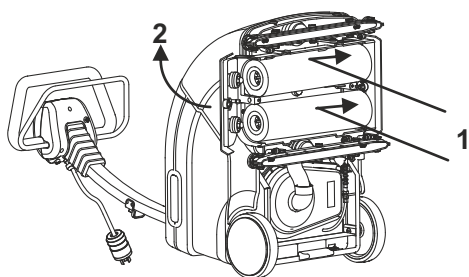


**When inserting the brushes for the next operation, make sure to change position of the brush such that one-sided brush wearing is precluded.**

### Brush maintenance



- Remove fresh and soiled water tanks.
- Use the support roller located at the handle side of the machine to set the machine into its park position.
- Use the adjustment screw to set the operating handle of the machine into vertical position, and then tilt the machine down as represented.



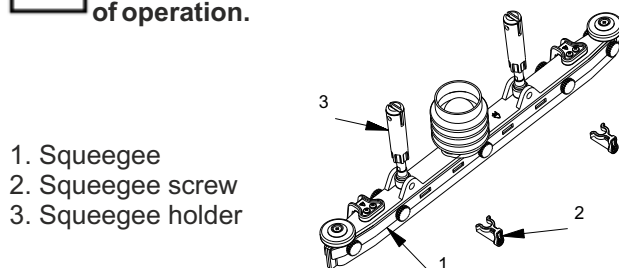
- Loosen screw and fix the brushes manually as represented in direction 1.
- Open brush cover in direction 2.
- Remove brushes.
- Clean brush compartment.
- Insert brushes, close brush cover and secure with screw.
- Set machine in upright position.
- Use adjustment screw to set the operating handle into working position.
- Set front support roller into working position.
- Re-insert fresh and soiled water tanks.

## Squeegee

The machine has been equipped with a squeegee of 450 mm working width. The squeegees can be lifted-out alternately.



**Check the squeegee for collected foreign particles and for proper condition before start of operation.**



1. Squeegee
2. Squeegee screw
3. Squeegee holder

## Mount Squeegee (Initial Fitting)

- Lift squeegee and hold it to the squeegee holders (3).
- Mount squeegee (1) to the squeegee holder by means of screws (2) as represented.
- Check the smooth running of the bottom sleeve at the squeegee holders for perfect hinging.

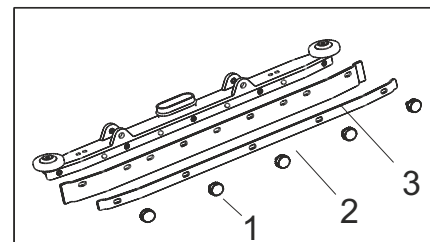
## Dismount Squeegee

- Lift brush head of the machine in order to access the squeegee screws.
- Remove both screws (2) as represented.
- Pull squeegee to the bottom to remove it from the machine.

## Change Sealing Strips

- No tools are required for dismantling the sealing strips. Proceed as follows
- Dismount squeegee (refer to paragraph "Dismount squeegee").

- Unscrew knurled screw (1).
- Remove support strip.
- Proceed to mounting of new sealing strip in reverse.
- Tighten the knurled screws (by hand) and from the center towards the outsides (slotted sealing strips point to the front, plain ones to the back).



1. Knurled screw
2. Support strip
3. Sealing strip



**The rear sealing strip can be turned round if worn at the front edge.**

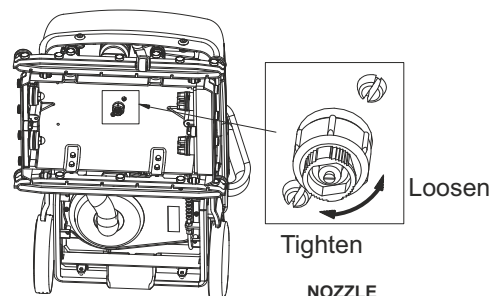
## Clean nozzle

The nozzle clogs after some hours of operation. It thus required to clean the nozzle at daily intervals before start of operation.

**Proceed as follows for cleaning the nozzle:**

### 1. Remove nozzle

- Dismount brushes from the machine (see "Dismount/Mount Brushes").
- Lift machine and lay down on its back as represented.
- Turn the nozzle to the left.

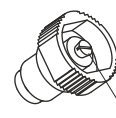


### 2. Clean nozzle

- Clean nozzle by compressed air or water.

### 3. Mount nozzle

- After cleaning, insert nozzle by screwing clockwise make sure that the nozzle slot is as the mounting direction of the brushes upright machine.



Nozzle Slot



## Filling of water

- Fill fresh water and detergent as described below before start of operation.
- Open tank lid and fold back.
- Fill fresh water tank with water (50°C max.) And detergent in relation to the dirt encountered and according to the specifications by the manufacturer.
- Filling quantity : 10 litres max.



**Use detergents suitable for automatic machines (low foaming) in order to preclude Damages at the suction turbine. We recommend Roots detergents for cleaning and care, which are perfectly adopted to the machine. These products fulfil the requirements of the Detergents Act.**

## Operation

- Use the button to take the support into working position.
- Turn switch "A" ON to make the brush rotate.
- Turn switch "C" ON to open supply of fresh water with or without detergent.
- Turn switch "B" ON to start suction turbine running.

Turn all switches OFF after operation and remove the brushes from the machine. Mount the brushes in inverse order of dismantling before next operation. This measure extends service life of the brushes.



**Start operation of the machine by pushing forward immediately after switching on. This Measure extends service life of the brush motor. When pushing in reverse direction lift the rear squeegee with the squeegee governor. Make sure that during the operation of the machine the mains cable always lies behind the operator.**



**Turn the brush drive off before passing over dormers of a height of 10mm and more.**



**Danger** when passing over the mains cable with rotating brushes. Start cleaning in the socket area and clean by stripes. If the surface is not obstructed, start at borders and forward counter-clockwise. Clean the remaining surface by stripes and starting in the socket area. Divide partly obstructed surfaces into areas in the reach of the mains cable. Within shortest time, the operator will know to avoid unnecessary hindrance caused by the mains cable.

### At the end of cleaning:

- Turn machine off and set it to its park position.
- Empty and rinse soiled water tank (see paragraph "Dirty and Fresh Water Tanks")
- Clean sealing strips of the squeegee.
- Check the sieve at the inlet opening of the fresh water tank and clean if required in order to maintain suction performance.



**Do not clean the machine by means of a water jet or high-pressure cleaning equipment to avoid endangering your safety and the operability of the machine.**

## Dirty and Fresh Water Tanks

The machine is equipped with a dirty and a fresh water tank (lye tank). The filling amounts to 10 litres. Do not fill beyond the maximum mark and do not exceed a water temperature of 50°C

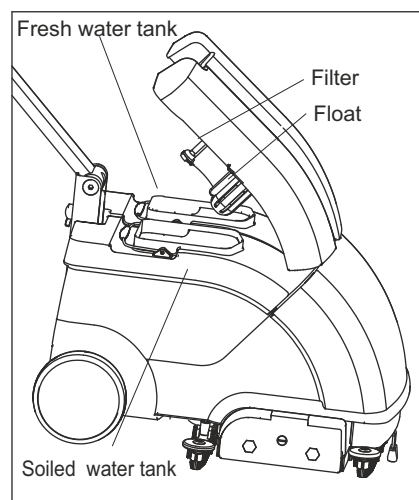
A suction hose delivers the dirty water into the dirty water tank.



**Do not take in larger amounts of secondary water (water pools). To avoid settling of residues empty and rinse the soiled and fresh water tanks after work on principle.**

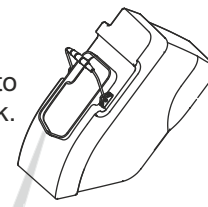


**Comply with the legal provisions for disposal of dirty water. Check and clean the suction filter in the tank lid for soiling in regular intervals.**



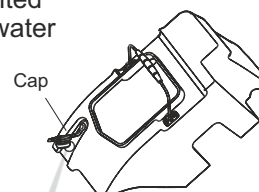
## Clean dirty and fresh water tanks

- Slowly tilt the tank as represented to drain water before cleaning the tank.



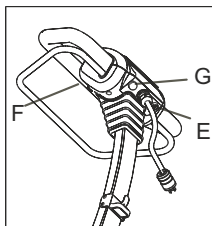
## Empty Soiled water tank

- Hold the tank as represented
- Open the tank and drain water
- Close cap



## Electrical System

- E. Suction motor fuse
- F. Pump fuse
- G. Brush motor circuit breaker



- The electric system of the machine operates at a mains voltage of 230V / 50Hz. After opening the machine top, the brush motor and the suction turbine are well accessible
- A T6.3A fuse (E) protects the suction turbine and has to be replaced by the same type if blown (T stands for slow-blow).
- The suction turbine is low-maintenance type; its carbon brushes only have to be checked after every 200 hours of operation.
- The brush motor is protected by a circuit breaker (G) which can be manually reset. In case of tripped cut-out, detect the cause and remedy before re-starting the machine.
- The pump is protected by a T0.5A fuse (F). Replace by the same type of fuse.
- Reset the cut-out by pushing down the transparent dome of the fuse box. After tripping, wait for approx. 30 seconds before resetting.



**In case of repeated fuse blowing detect the cause. We recommend having all work at the electric System done by qualified personnel only.**



**Before starting work at the electric system, disconnect the mains plug. After work at the electric system is finished, proceed to a safety test.**

## Maintenance work

Compliance with our recommendations concerning maintenance work will give you the certitude always having a machine at your disposal, which is ready to work and in good operating condition.

It is better to take precautions than to repair damages - and less expensive! Please contact your local contract dealer; the people there will be glad to perform that work for you. There well trained personnel and genuine spare parts are at your disposal. In case of any inquiries or orders for spare parts, please always quote the machine's serial number indicated on the nameplate. The nameplate is located at the rear side of the machine.



**Turn the machine off and disconnect the mains plug before cleaning or maintaining the machine.**

For safety reasons, secure the lifted tank lid against inadvertently closing or lowering during all cleaning or maintenance work in or at the tank. Operate the machine only with all safety devices being fitted and in protective position. Do not proceed to cleaning by hand but use appropriate tools or auxiliary means. Maintenance or repair work has to be done using appropriate tools and by qualified personnel only. For safety reasons use genuine spare parts.



**Before proceeding to the maintenance and/or inspection or repair works mentioned in following, execute a functional check of all operating elements and units in order to detect eventual failures. After repair work has finished, operate the machine after having performed a safety check only.**

Maintenance Work	Daily	service hours every		
		50	100	200
Check connections, extension cable and plug for good condition, replace defective	●			
Empty and clean (rinse) soiled water tank.	●			
Check sealing strips at the squeegee for condition.	●			
Check squeegee for collected foreign matters and clean if required.	●			
Check the float for function.	●			
Check filter sieve of the fresh water tank and clean if required.	●			
Check squeegee sealing strips for wearing and replace if required.		●	●	●
Check the brush for tight fit and wearing and replace if required. Clean brush	●	●	●	●
Check the tank lid gasket and replace if required.			●	●
Check fresh water infeed to the brushes.		●	●	●
Check suction motor from carbon dust and check carbon brushes for smooth operation and wearing. Replace carbon brushes if required				●
Clean nozzle	●			



**Disconnect the mains plug before executing maintenance or repair work. After these works have finished, proceed to a safety check.**







**Roots Multiclean Ltd.**

R.K.G. Industrial Estate, Ganapathy,  
Coimbatore - 641 006, India.

Phone: +91 (422) 4330 330

E-mail: [rmclsales@rootsemail.com](mailto:rmclsales@rootsemail.com)

Web: [rootsmulticlean.in](http://rootsmulticlean.in)

**Toll Free: 1800 41 99 77 9**