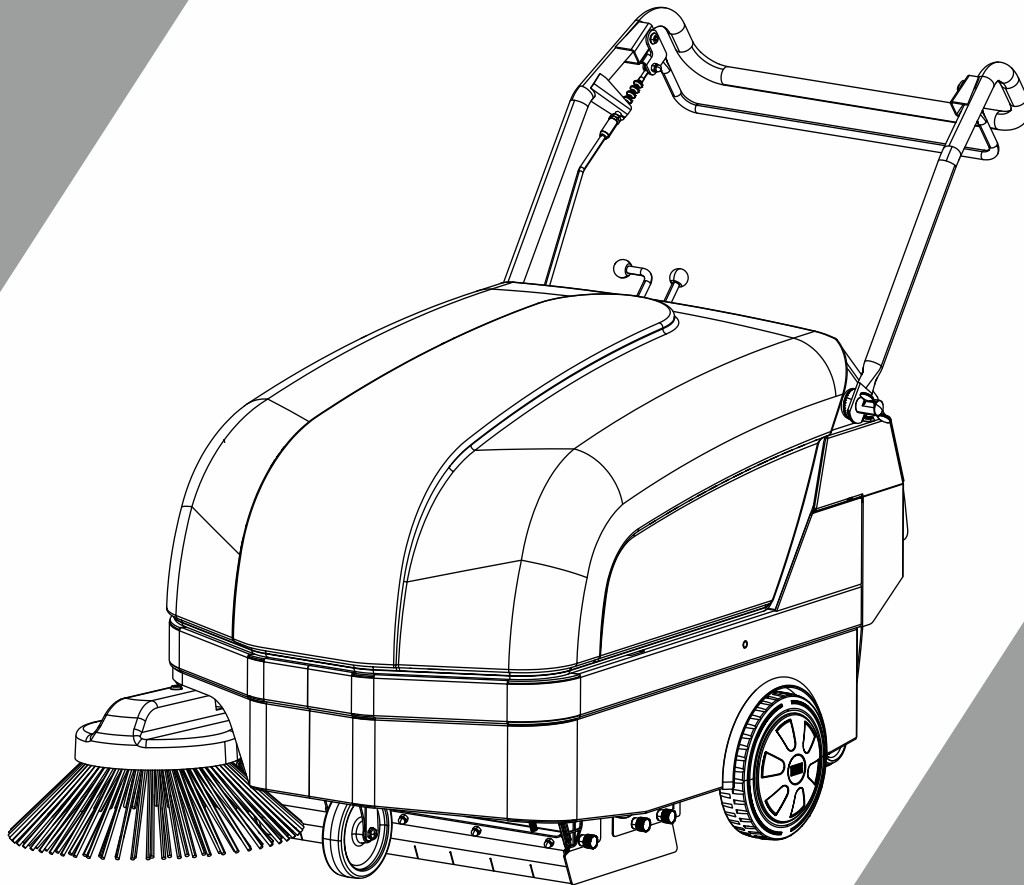
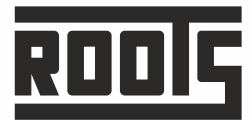


RootsSweep B70

*Walk Behind Floor & Carpet Sweeper
Battery*



24V

Operator's Manual

Read this manual completely and understand the instructions before operating the machine.
"English Version"

<u>Description</u>	<u>Page No.</u>
Technical Specification	3
Introduction	4
General safety instructions	5
First operation	7
Machine operation	8
Battery instructions	15
Maintenance & service	18
Do's & Don't's	19
Spare parts list	20

TECHNICAL SPECIFICATION

Description	Units	Values
Sweeping Width (without side broom)	mm	500
Sweeping Width (with side broom)	mm	700
Theoretical area coverage with one side broom	m ² /h	3525
Filter Area	m ²	1.6
Total Power	W	550
Dirt Hopper capacity	L	35
Working Speed	km/h	5
Battery Capacity @ C20	V/Ah	24/65
Dimensions (L x W x H)	mm	1300 x 810 x 680
Weight, ready to operate	kg	135

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

Preface

Dear Customer,

Thank you for choosing to become the proud owner of **RootsSweep B 70**. Having been in the market for close to four decades now, we are sure that you will be happy about your decision. We also assure you that our services and attention will always be available, should you need them!

Before the first operation of your machine, please read these instructions carefully. This manual will provide you with detailed instructions on the operation of the product and also give you valuable information on operation, service and maintenance.

This machine is an ideal machine to clean floors in large and medium spaces like Offices, Hospitals, Restaurants, Shopping Complexes and other such commercial applications.

Proper Use

Use of the product beyond the specified range is deemed improper and the manufacturer cannot be held liable for consequential damages.

The terms of proper use also includes compliance with the manufacturer's instructions on the operation, maintenance and repair of the product.

This machine may be used, serviced and repaired only by persons who are familiar with the machine and are aware of possible hazards involved. The appropriate Accident Prevention Regulations as well as applicable general regulations about safety and health at work must be complied with.

Modifications made to machine in the absence of the manufacturer's consent will relieve the manufacturer from possible liability for consequential damage.

Notes on Warranty





Refer Limited Warranty card supplied with the machine.

Acceptance of the machine

As soon as the machine arrives, Please check for any transport damage. In the event of any damage, it is the purchaser's responsibility to send a claim letter to the particular RMCL Branch / Dealer with a copy of invoice. The letter should be sent within 24 hours after the goods were delivered.

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.

Safety Instructions

- Apart from information contained in this manual generally applicable legal provisions for safety and prevention of accidents must be adhered to.
- Do not put this manual aside without having read it, even if you have already operated similar ground cleaning equipment before.
- Allow yourself the time to do so in order to save time at a later time.
- The operator is responsible for all persons including children in the working area.
- No person must be allowed to stay in the zone of danger.
- The warning and instruction plates attached to machine give important advice on safe operation.
- Replace lost or illegible stickers.
- Before starting to work, the operator has to check that the machine and its working implements are in proper and safe operating condition.
- Machines with known defects must not be used.

- It is important for operators and all persons likely to use the product, to familiarize themselves with all accessories and controls, as well as their functions, before starting operations.
- Abiding by the above general instructions can help you avoid having to read this book while trying to run the machine.

Safety during machine operation

- 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 representative.
- Turn off the machine before any passage over dormers.
- When the machine is in vacuum sweeping mode, it must not be driven through puddles of water.
- Only start the machine when the hood is closed and the lever of the shaking device has been pushed in.
- Accelerate the machine immediately after switching on the rotary broom, otherwise imprints of the broom could be produced on the floor.
- Never leave the machine unattended as long as the motor is running.
- Suitable tools must be used for cleaning and maintenance work.
- When working with the hood raised, it must be opened up fully to prevent it from accidentally dropping or slamming shut.
- When working on the electrical system, always disconnect the battery cable.
- Battery may only be handled and changed by properly skilled maintenance personnel.
- Pay attention that the insulation of the charger cable is not damaged and cannot be damaged during the charging process.
- The cable must not chafe against anything. In the case of defective insulation, do not use the on-board charger.
- It is not permitted to use aggressive and corrosive cleaning agents.
- Allow the machine to dry properly after being cleaned, e.g. over the weekend.
- 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.
- To prevent creeping currents, always keep the batteries clean and dry, protect from soiling such as by metal dust.

- Never lay any metallic objects or tools on batteries. Risk of short circuit and deflagration!
- When charging the batteries, there must be sufficient ventilation in the charging area. Otherwise, there is a risk of explosion!
- Batteries must not be connected or disconnected when conducting electricity.
- Wash your hands thoroughly after working on batteries.
- The shaking device for cleaning the panel air filter may only be actuated when the dirt hoppers are in the machine and have been raised.
- It is forbidden to eat, drink and smoke in battery charging rooms.
- Never operate the machine without the hood being closed (safety equipment)!
- Do not open the hood when the motor is running!
- Sufficient factual knowledge is required in order to use substances which could represent a risk to health and the environment, e.g oil and lubricants.
- Used batteries with the recycling symbol must not be disposed of in household waste, refer to section "Disposing of Batteries".



Turn the motors off to protect the machine against unintended movements, before leaving it unattended. Use only genuine spare brooms as specified by the manufacturer. Use of other than the indicated broom types may affect safety.



Never collect explosive fluids, undiluted acids and solvents. This includes e.g. gasoline, paint thinners or fuel oil, which, when combined with air, may form explosive vapors or mixtures. Acetone, undiluted acids and solvents can be aggressive to the material used for the machine components.



The machine may be used only on indoor hard floorings and for operation on level grounds with a maximum inclination of up to 2 %.



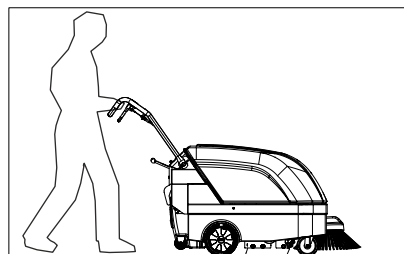
- Do not clean the machine by means of vapour jet or high pressure cleaning equipment. Do not allow water to penetrate the electrical parts.

- The machine is splash-water proof (IPX3).
- Use of the machine in areas prone to explosion hazards is strictly forbidden.



- This machine is not intended for use on public roads and places. Only qualified personnel must perform maintenance and repair work.
- Turn the machine off and disconnect the mains plug before cleaning and maintaining the machine, when replacing parts or when changing over to another function.

Transport



When transporting the machine make sure the dirt hopper is secured and empty, the side broom lifted up.



When loading the machine and transporting it to its area of deployment, the side broom must be raised.



The machine must be properly secured. It must not slip or tip during transportation! Risk of injury!

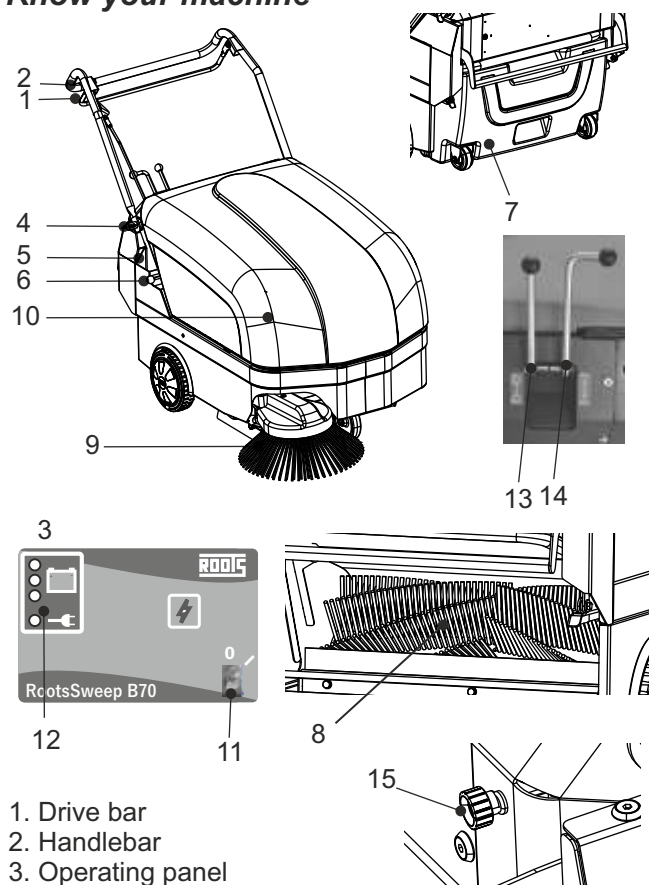
- When transporting on a vehicle or trailer, the machine must be secured against rolling away: Lash down the machine securely at the front and rear.
- Secure the machine at the front with a strap which must be fed through the two openings near the front wheel.
- At the rear, thread a strap around the bottom ends of the handlebar and fix the strap to the transporter.

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

Unpacking & Handling

- Remove the packaging, open the fastening straps and take the machine from the pallet. For reasons of packaging, the handlebar of the machine is pivoted forwards. First of all, pivot the handlebar to its operating position.

Know your machine



1. Drive bar
2. Handlebar
3. Operating panel
4. Wing bolt for handlebar
5. Charger cable
6. Shaking device lever
7. Dirt hopper
8. Main Broom
9. Side Broom
10. Hood
11. Key switch
12. Battery status indicator
13. Main broom apron lift lever
14. Side broom raise/lower lever
15. By-pass flap knob

Charger cable

The charger cable of the machine is located in the recess which also contains the shaking device lever.

Shaking device lever

B 70

To clean the panel air filter, pull the shaking device lever out then push back again; repeat this several times.

B 70 Carpet Sweep

To clean the panel air filter in carpet sweeper machine, tilt and pull the shaking device lever out then tilt and push back again; repeat this several times.

Installation & Before Operation

Pivoting the handlebar to its operating position

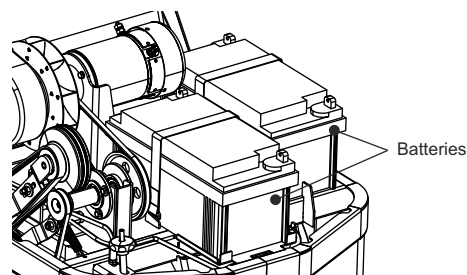
- Loosen the wing bolts on the right and left sides of the handlebar a few revolutions until the handlebar can be straightened up.
- Pivot the handlebar towards the rear and set it to a height convenient for the user.
- Tighten the wing bolts on the right and left sides of the handlebar.

Connecting the battery

- Before starting up for the first time, connect the positive cable of the device as illustrated to the positive pole of the battery in the device.

Initial battery charge

- Before starting up the machine for the first time, the batteries used must be fully charged by completing the initial battery charge. The machine assumes no liability for damage to the battery resulting from failing to carry out the initial battery charge properly.



! Risk of explosion! When charging the battery, there must be sufficient ventilation in the charging area.

Drive Bar

The drive bar serves to activate and deactivate the wheel drive. The drive bar must be pulled up towards the handlebar with the fingers so that the wheel drive operates and the machine moves forward. If the drive bar is released, the machine stops (safety circuit).

Handlebar

The machine is guide/steered via the handlebar. The two wing bolts serve to adjust the handlebar to an optimal position for the user.

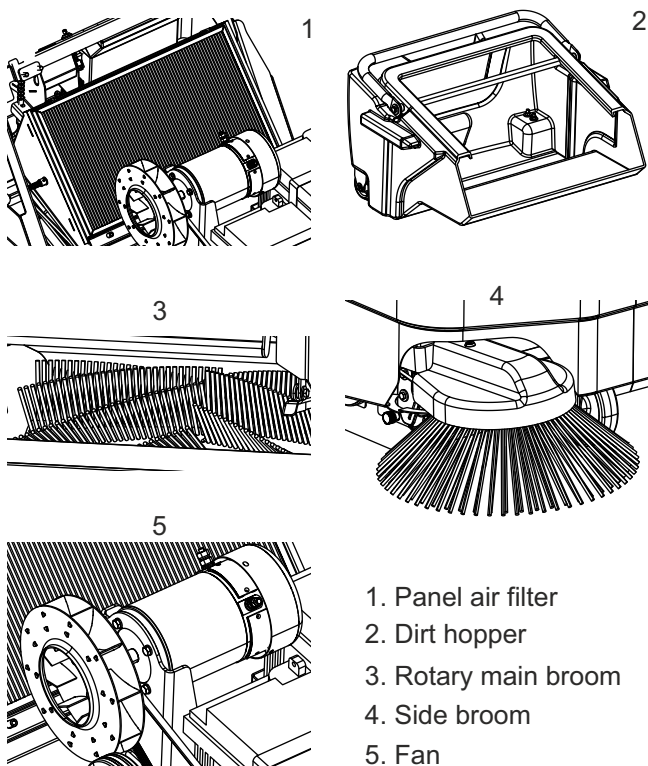
Before starting up

- Check the charge status of the battery and recharge, if necessary.
- Check the fill level of the dirt hopper and empty them, if necessary.
- Check the levels of wear on the rotary broom and side broom.
- Check the ergonomic position of the handlebar and readjust it, if necessary.

This machine is applicable for dry sweeping only.

Machine Operation

The machine is a manually operated machine with a drive for the dry cleaning of hard floors and hard carpets. The side broom, located on the right-hand side of the machine, sweeps the dirt away from corners and edges into the path of the main rotary broom. The rotary broom sweeps the dirt into the dirt hopper using the overhead throw method. The particulate matter is forced against the panel air filter by the suction turbine and filtered out there. Only dust-free air is fed back into the ambient air.



To charge the battery, the machine is equipped with a corresponding, fully automatic onboard charger. To protect the battery against total discharge, the machine is provided with a total - discharge signal transducer

(TSG) which indicates the battery status during the charging process and discharging.

Note: The machine should be used only to clean carpets not more than 5 to 6 mm in thickness.

The machine must not be used in domestic or office areas.

Do not operate the drive lever in corners. Risk of losing control of the machine.



Practice all the operating steps in a training area and only use the machine in the areas specified for deployment when you are familiar with all the operations.

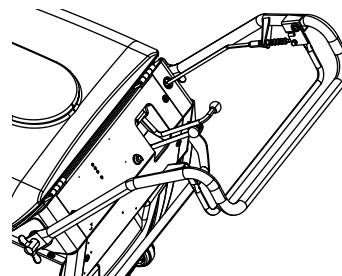
Switching On

The motor must not be started when the hood is open! Risk of injury through belt drive and rotating fan!

- Set the key switch to Position 1.

When the electrical system is powered On:

- Use your fingers to pull the drive bar against the handlebar.
- Steer the machine with the handlebar in the required direction.



Stopping

B 70

In normal version release the drive bar. The machine decelerates and comes to a stop, the drive only controlled by drive bar the other functions main brush and side brushes are controlled by key switch .

B 70 Carpet Sweep

In carpet version upon releasing the drive bar, the machine decelerates and comes to a stop, all functions-drive, main brush and side brush are controlled by drive bar, when released, all functions are stopped after a delay of 5 seconds to negotiate around corners.

Vacuum sweeping

Ensure sufficient ventilation when sweeping indoors! It is forbidden to sweep up dust which represents a health hazard!

- Check the machine.

- Open the bypass flap by pulling the knob if damp waste is to be cleared up.
- Switch the machine on, sweeping functions are activated.



Drive away immediately after switching on the machine otherwise it is possible that marks will be produced on the floor by the rotating rotary broom.

- Lower the side broom: Move the lever forwards.
- Accelerating: pull the drive bar up.
- Drive to the ground surface to be cleaned.



Steps and curbs up to a height of 4 cm can be driven over, carefully. When driving over thresholds, release the drive bar and tip the machine back a little so that the front roller can negotiate the step.

- Operate the shaking device occasionally, refer to paragraph "Operating the shaking device".
- Check the contents of the dirt hopper regularly and empty as necessary, refer to paragraph "Emptying the dirt hopper".



Do not overload the dirt hopper! This can affect the stopping distance. Caution, particularly when sweeping up dirt such as metallic chippings!



Tip out the dirt hopper from a low height when emptying to prevent dust swirling around! If necessary, pay attention to the wind direction and evade any clouds of dust! Health hazard!

Switching off

- Turn the key switch to Position 0.

After finishing work

- Operate the shaking device.
- Empty the dirt hopper.
- Check the broom area for any residual waste and remove it if necessary, refer to section "Cleaning the Broom Space".
- Clean the machine, if necessary.

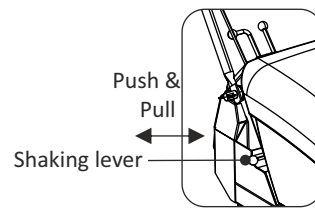


Warning - do not clean electrical components with liquids! Risk of electric shock! It is not permitted to clean the machine with a pressure washer or steam cleaner.

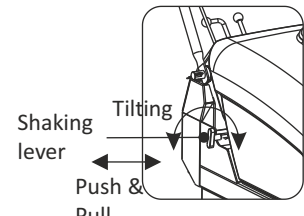
Operating the shaking device

B 70

- Push and pull the lever in and out several times in succession to clean dust from the panel air filter in normal version.



B 70



B 70 Carpet Sweep

B 70 Carpet Sweep

- Tilt then push and pull the lever in and out several times in succession to clean dust from the panel air filter in carpet sweeper version.



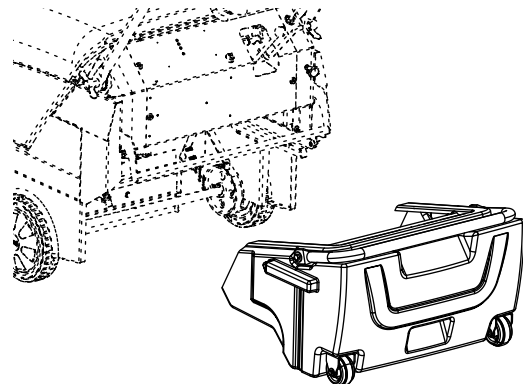
Only operate the shaking device when the motor is switched off.

Emptying the dirt hopper

- Lift the hopper link handle then take the dirt hopper and clean the hopper.
- Remove the dirt hopper from the machine and empty it.



Carry the dirt hopper by the handles.



Observe the applicable laws and local regulations when disposing of waste.

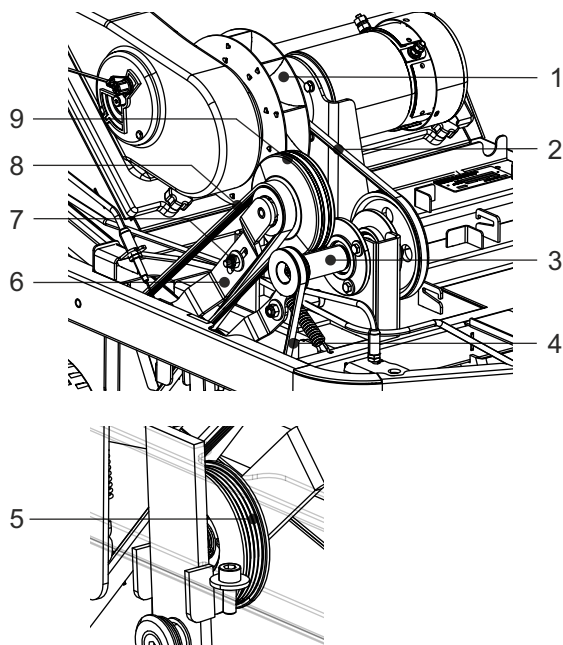
Function faults

- If the machine is overloaded, the motor speed drops. Set the key switch to Position 0. Check the side broom, main rotary broom and broom area for residual waste and remove the waste. The battery is sufficiently charged. Start the machine. If the fault occurs again, contact Roots service.



If the machine cannot be switched off, pay attention to the rotating fan when you disconnect the cable.

Drives



1. Suction turbine fan
2. Belt drive for rotary broom and machine drive
3. Drive shaft (for main rotary broom, side broom and machine drive)
4. Belt drive for side broom and main rotary broom
5. Tension pulley for rotary broom drive
6. Friction wheel crank
7. Screw connection, friction wheel bearing
8. Belt drive for machine drive
9. Friction wheel

⚠ Before starting any maintenance and repair work, set the key switch to Position 0 to prevent starting the machine inadvertently!

⚠ Ensure the motor has stopped before opening the hood. Risk of injury through running belt drives and rotating fan.

Adjusting the drive belt

If you notice that the rear wheel shaft is no longer driven properly, it is possible that the tension of the drive belts is no longer sufficient or the running surface of the friction wheel is worn (distance between wheel and running surface > 1mm).

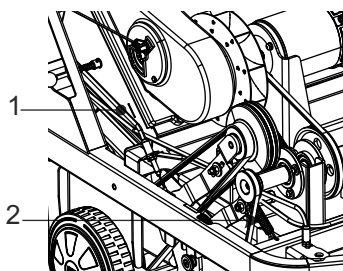
- Loosen the screw connection in the friction wheel crank.
- Tension the belt which leads to the rear wheel shaft by moving the friction wheel crank in the slot using an appropriate tool.
- Tighten the screw connection in the friction wheel crank.

- Check the belt tension with an appropriate measuring instrument (belt tension 75 ± 5 Hz).

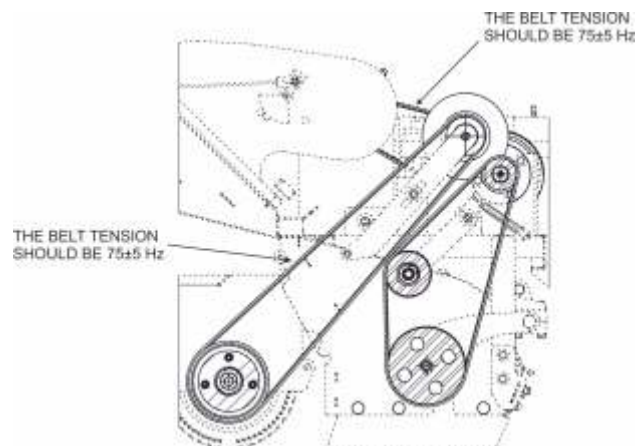


The friction wheel thereby lies against the drive shaft.

- Turn the hexagon nut so far on the eye bolt until the tension spring tensions and the friction wheel retracts 1-2 mm from the drive shaft.
- Turn the hexagon nuts one revolution further.
- Complete any fine adjustment using the bowden cable adjusting nuts on the handlebar: turn the adjusting nuts, so that the distance between friction wheel and drive shaft is between 0.4 and 1 mm.

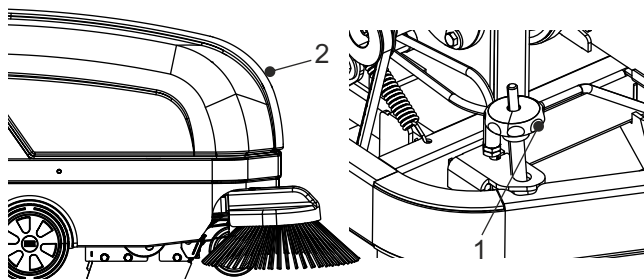


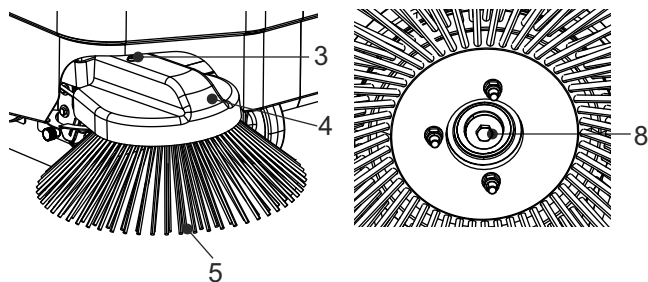
1. Bowden cable
2. Tension spring
3. Adjusting nuts for bowden cable



Side Broom

⚠ Before starting any maintenance and repair work, set the key switch to Position 0 to prevent starting the machine inadvertently!





1. Side broom control knob
2. Hood
3. Screws, plastic housing
4. Plastic housing
5. Side broom
6. Hexagon head bolt
7. Side broom holder
8. Hexagon nut

Side broom wear, readjustment



Ensure the motor has stopped before opening the hood. Risk of injury through belt drive and rotating fan!

- Turn the side broom control knob to adjust the height of the side broom.
- Close the hood completely till it rests flat on the chassis.

Changing the side broom

- Check the side broom weekly and change in the case of wear.

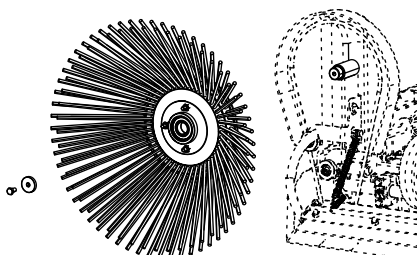


Switch the machine off and tip it back.



Before tipping the machine, the battery must be removed. Before the machine can be tipped back, the handlebar must be adjusted to a vertical position.

- Remove the screws from the plastic housing and remove the plastic housing.
- Remove the hexagon head bolts, the washers and hexagon nuts.
- Pull the old side broom from the side broom holder.

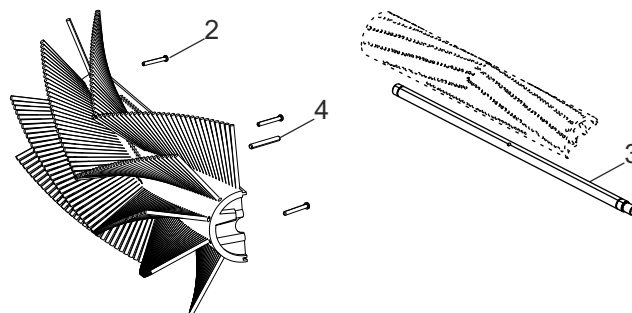
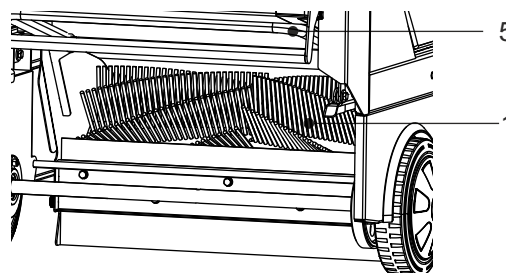


- Install the new side broom on the side broom holder.
- Fix the side broom with the hexagon head bolts, washers and hexagon nuts to the side broom holder.
- Assemble the plastic housing and fix it in place with the screws.

Main Rotary Broom



Before starting any maintenance and repair work, set the key switch to Position 0 to prevent starting the machine inadvertently! Remove the ignition key.



1. Main rotary broom
2. Screw
3. Rotary broom shaft
4. Guide pin
5. Seal

Cleaning the broom space

- The broom space with the rotary broom and seals for the dirt hopper must be checked daily for signs of dirt and cleaned as necessary.




Tapes wound around the rotary broom leads to shutdown due to overloading!

- Remove the dirt hopper.
- Check the broom space - the area between the rotary brush, panel air filter and dirt hopper - for residual waste and damage.
- Remove any foreign bodies.
- Clean the broom space, firstly with a hand brush and then with water. Dry the broom space.
- Change defective dirt hopper seals.

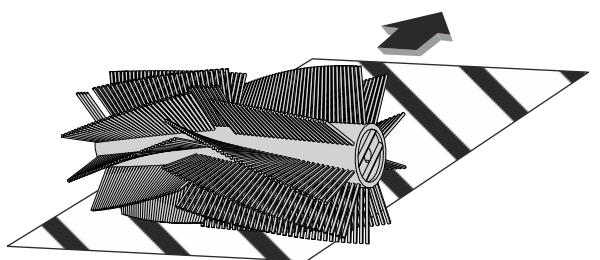
Changing the Main Rotary Broom

The rotary broom must be checked weekly and changed in the case of wear. A new main rotary broom has a diameter of 250 mm. When a main rotary broom has a diameter of only 200 mm, it must be replaced with a new one. The main rotary broom is comprised of two rotary broom segments which are fixed to the rotary broom shaft by the screws. Pay attention that the bristle pattern on the rotary broom is always arranged in a V-shape in the direction of driving so that the dirt is guided to the center of the rotary broom.

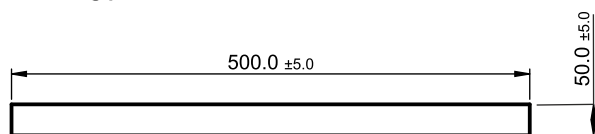
- Tip the machine to the rear.
 - Before tipping the machine, the battery must be removed.
-  - Before the machine can be tipped back, the handlebar must be adjusted to a vertical position.
- First of all, disassemble the two adjacent rotary broom segments: Loosen the screws and remove the rotary broom segments.
- Then turn the rotary broom shaft 180° by hand and disassemble the two remaining rotary broom segments.
- Assemble two new rotary broom segments in the reverse sequence. When doing so, pay attention that the rotary broom segments are installed on the guide pins of the rotary broom shaft and screw to facing rotary broom segments firmly to each other.
- Tip the machine back up again.
- Install the battery again in the machine.
- After changing the rotary broom, readjust the sweeping pattern as necessary.

Setting the sweeping pattern

In the case of broom wear, and after changing the rotary broom, the sweeping pattern must be readjusted.

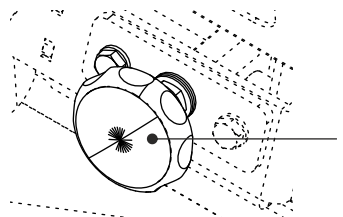


Mounting position of the main brush in direction of travel



MAIN BROOM PATTERN SETTING

- Push the machine onto a dusty surface.
- Switch the machine on and allow the rotary broom to rotate for a short time while at a standstill.
- Switch the machine off.
- Tip the machine up at the front a little and pull the machine back a short way.



1. Rotary broom height control knob

- Examine the sweeping pattern (broom stroke) produced on the dusty ground: The width of the sweeping pattern must be approx. 50 mm. The borders of the sweeping pattern must be parallel.
- Open the hood.
- Adjust the height of the rotary broom by means of the control knob.
- Close the hood.
- Repeat steps 1 to 8 until the adjustment is correct.

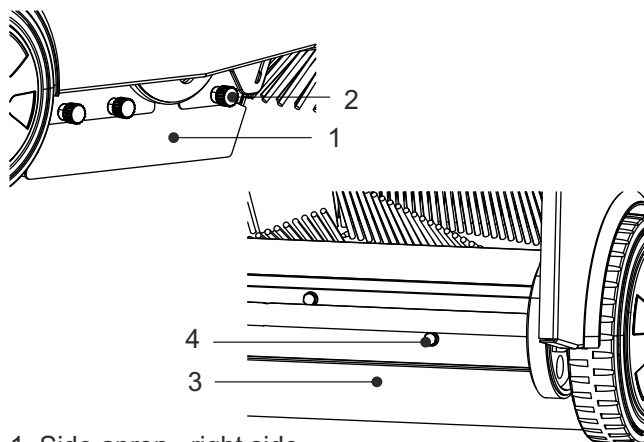
Changing the sealing strips

The rotary broom is surrounded by four sealing strips: a front apron, two rear aprons (front and rear) and two side aprons. The four sealing aprons must be checked weekly and changed in the case of wear.

- Tip the machine to the rear.



Before tipping the machine, the battery must be removed. Before the machine can be tipped back, the handlebar must be adjusted to a vertical position.



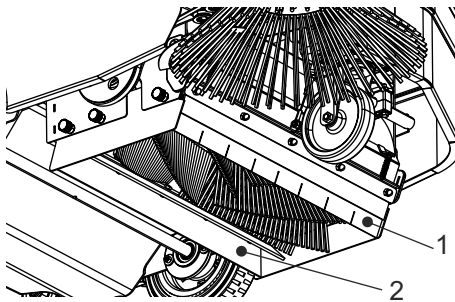
1. Side apron, right side
2. Screw connection side aprons
3. Rear apron (back rear apron)
4. Screw connection rear apron

Changing the side aprons

- Unscrew the screw connections in the side aprons.
- Change the sealing strips and adjust the side aprons. There must be approx. 1 - 2 mm clearance to the floor.
- Screw the screw connections back in the side aprons.

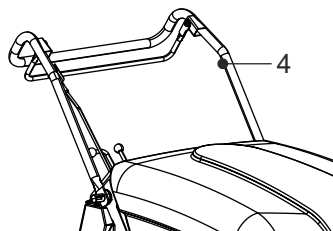
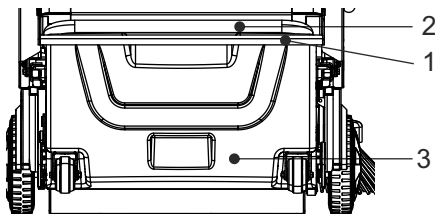
Changing the rear aprons

- Remove the dirt hopper.
- Unscrew the screw connections in the rear aprons.
- Change the sealing strip and adjust the rear apron : The clearance of the rear apron from the ground must be 1-2 mm.
- Screw the screw connections back in the rear aprons.



1. Front apron
2. Back apron

Dirt Hopper



1. Seal for dirt hopper
2. Handle for dirt hopper
3. Dirt hopper
4. Handlebar



Before starting any maintenance and repair work, set the key switch to Position 0 to prevent starting the machine inadvertently!

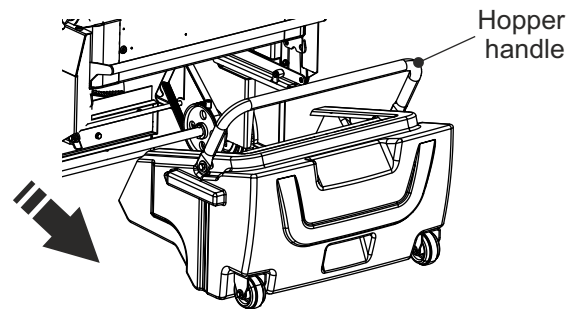
Removing the dirt hopper

- Switch the machine off looking in drive direction, at the same time, pivot the handlebar forwards. The hopper link assembly handle pull shifted.



The motor should have come to a standstill before the dirt hopper is removed. Risk of injury through swirling waste and dust!

- Hold the dirt hopper by the handle and pull it to the rear and out of the machine.



Emptying the dirt hopper

Check the fill level of the dirt hopper regularly and empty it regularly and as necessary.



Observe the applicable national laws and local regulations when disposing of waste.

Inserting the dirt hopper

- Insert the dirt hopper back in the machine from the rear until they perceptibly engage in the hopper link assembly
- Pivot the handlebar towards the rear.

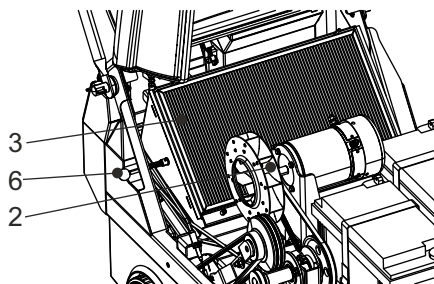
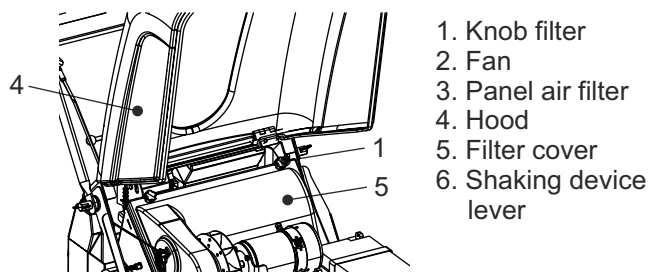
Changing the seals

- Check the dirt hopper seals for wear on a weekly basis and change the seals as necessary.
- Remove the dirt hopper.
- Pull the seals from the edges.
- Press new seals on the edges.
- Insert the dirt hopper.

Dust vacuum



Before starting any maintenance and repair work, set the key switch to Position 0 to prevent starting the machine inadvertently!



Clearing dust deposits from panel air filter during operation

Clean the panel air filter in the dust vacuum regularly and as necessary using the shaking device:

- When the motor is switched off, pull/push and tilt the lever of the shaking device quickly, several times.

Removing the panel air filter

- Open the hood.



Ensure the motor has stopped before opening the hood. Risk of injury through belt drive and rotating fan!

- Release the top filter cover locks: Unscrew the knurled screws from the threaded pins.
- Release the bottom filter cover locks: Unscrew the knurled screws.
- Remove the filter cover.
- Remove the panel air filter.

Cleaning the panel air filter thoroughly



Do not inhale the dust. Health hazard! Wear an appropriate dust mask.

- Drop the panel air filter a few times from a small height onto a level, solid surface. Be careful not to damage the filter ribs!



The ground must not have any surface irregularities. Do not drop the panel air filter onto the ground at a slant.



Never install panel air filters which have damaged filter ribs!

Replacing the sealing strips

If the panel air filter is removed, check the self-adhesive sealing strips for signs of damage. Damaged sealing strips must be replaced:

- Pull off the damaged sealing strips.
- Clean any residual adhesive from the surfaces on which the sealing strips have to be assembled.
- Assemble the new sealing strips.

Inserting panel air filters

- Insert the thoroughly cleaned or new panel air filter from the correct side in the filter support frame.



Pay attention to the labeling on the side of the panel air filter.

- Replace the filter cover
- Close the bottom filter cover locks: Pivot the hinged locks over the edge of the filter cover.
- Close the top filter cover locks: Screw the knurled screws on the threaded pins.
- Close the hood.

Checking the suction turbine

- Switch the machine on.
- Clean a dusty surface for test purposes.
- Switch the machine off.
- Remove the dirt hopper.
- Check whether dust has accumulated on the inner side of the panel air filter.
- If you have the impression that the suction turbine does not work or dust escapes from the machine, contact a Roots service.



Do not open the hood when the motor is running. Risk of injury through belt drive and rotating fan!

Checking the filter system for leaks

- When the motor is switched off, hood is open and filter cover removed, check whether dust escapes at the edges of the panel air filter.
- If this is the case, check the sealing strips and replace, if necessary.
- Check the panel air filter and replace, if necessary. The frame of the panel air filter must not be twisted nor show signs of damage. Ensure that the panel air filter has been inserted true to side.
- Repeat this test a certain time after cleaning. If dust continues to escape at the edges of the panel air filter, contact a Roots service.

Warning Symbols



The above instructions have been established for your safety and have to be strictly observed.



Observe the instruction which must be mounted clearly at the charging point!



No Smoking! No naked lights, embers or sparks in the vicinity, risk of fire and explosion!



Risk of fire explosion, avoid short circuits! **Caution!** Metal components in the battery cells are always under voltage, never place any foreign items or tools on the battery!



Wear protective goggles and protective clothing when working on the batteries!

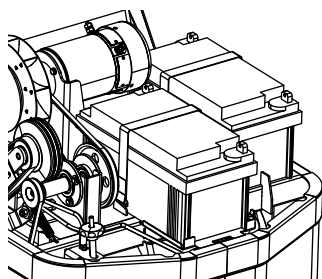


Keep children away from batteries

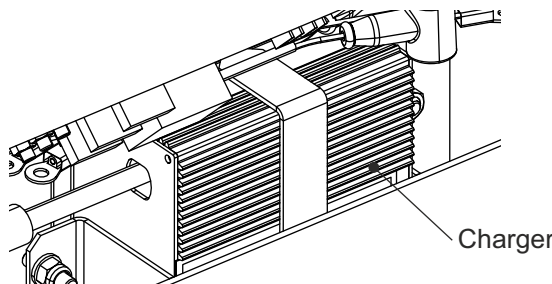


Do not throw in garbage!

Batteries and Charger



- The batteries are located in the chassis at the front of the machine.



- The on board charger is located at the rear of the machine, mounted on to a special bracket.



Do not tamper with the charger connections

Batteries (Gel)

1. Initial Checking

Check the battery to ensure that it is in perfect mechanical condition. All screwed unions within the circuit must be tightened to ensure reliable contacts. Machine cables and charging cable are to be connected to the correct poles of the battery otherwise battery and charger can be damaged.

2. Normal usage

Ventilation openings may not be covered or closed. Electric connections (e.g-plugs) may be connected or disconnected only when the machine is in off condition. Discharge batteries must be recharged immediately and may not remain in discharged condition. this also applies to only partially discharged batteries.

The battery may only be connected up to the allocated battery charger certified for the particular battery size. The battery is to be connected with the correct poles (plus to plus and minus to minus) to the battery charger. The battery charger should then be switched on.

3. Temperature

The battery temperature of 30 °C is rated temperature. Higher temperatures shorten the service life and lower temperatures reduce available capacity. 45 °C is the limit temperature and is not tolerable as operating temperature.

4. Maintenance

Daily maintenance

Recharge the battery every time it has been discharged.

Weekly maintenance

Visual inspection after recharging for signs of dirt and mechanical damage.

Maintenance to be carried out every three months After fully recharging and following a standing period of at least 5 hours, the following must be measured and recorded:

- Total voltage
- Individual voltage

If noticeable changes are detected compared to previous measurements, or differences between the cells or block batteries, the customer service should be called for testing or repair.

5. Care

The battery must be kept clean and dry to prevent creeping current. Clean the battery according to the instructions "Cleaning batteries". Any liquid in the battery container must be extracted and disposed of according to regulations.

6. Storage

If batteries are out of operation for longer periods, they should be stored in fully charged state in a dry, frost free room.

- In order to ensure that the battery is ready for operation at any time, it can be recharged according to one of the following methods
- Full recharge every three months. When a consumer is connected up (e.g. measuring or controlling devices), it may be necessary to recharge the battery every two weeks.

7. Faults

The customer service should be called immediately when any faults are discovered in battery or battery charger.

Disposal of Batteries



Old batteries with this sign are recyclable economic goods and should be brought back into the recycling process.

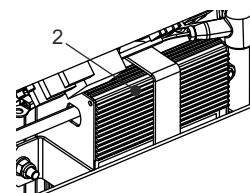
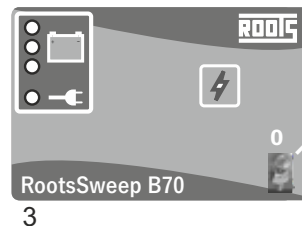
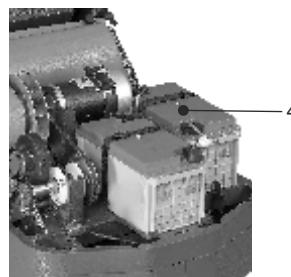
Old batteries which are not brought back into the recycling process, have to be dealt with as dangerous materials under the observance of all regulations.



Before starting any maintenance and repair work, set the key switch to Position 0 to prevent starting the machine inadvertently!



Batteries may only be handled and changed by properly skilled maintenance personnel.
Only batteries approved by Roots may be used.



1. Charger cable
2. On-board charger
3. Operating panel
4. Battery

Charging battery



Before starting the machine up for the first time, the battery to be used must be fully charged, properly, by implementing the initial battery charge routine. Roots assumes no liability for damage to the battery caused by a fault when the battery is charged for the first time.

During operation, the battery discharge indicator in the operating panel indicates the discharge status of the battery. The battery must be charged immediately the red LED lights up. The battery is recharged using the integrated on-board charger.

- Set the key switch to Position 0.



The battery should not be charged in Position 1.

- Remove the charger cable from the recess on the right-hand side of the machine.
- Plug the charger cable in a 230 V power outlet.

While the battery is charging, the charge control indicator lights up in the operating panel.



When the charging process has been completed, disconnect the plug from the power outlet and return safely to the recess.

Servicing the drive batteries

Never leave discharged batteries lying around; recharge them immediately!

Removing battery



Before the machine is tipped for any reason, the battery must be removed!

- Disconnect the negative cable from the battery.
- Disconnect the positive cable from the battery.
- Release the retaining strap.
- Take hold of the battery and lift them out.

Inserting batteries



Only the special, maintenance free batteries approved by Roots may be installed at the prescribed position. Ensure the motor has stopped before opening the hood. Risk of injury through belt drive and rotating fan!

- Take hold of the battery and install them at their prescribed positions in the machine.
- Secure the battery using the retaining straps.
- Connect the battery in accordance with the connection diagram.
- Connect the negative cable of the machine to the battery installed in the machine.
- Connect the positive cable of the machine to the battery installed in the machine.



Sparks could be produced when connecting the battery!

- Close the hood.

Electrical System

The electrical equipment of this machine uses a mains voltage of 24 DC. Easy access to motor is possible by opening the hood.

The fuses can be changed by removing the rear panel assembly.



If there should be repeated cases of failure, look for the reason. Any work at the electrical system has to be carried out by specialized electricians only.

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.

Please contact your local Roots distributor; the people there will be glad to perform that work for you. There well trained personnel and genuine Roots spare parts are at your disposal.

- Well trained personnel and genuine Roots spare parts are at your disposal.
- In case of any inquiries or orders for spare parts, please always quote the machine's serial number mentioned on the nameplate.
- The name plate is fixed near the battery compartment of the machine.
- When cleaning or servicing the machine, and when replacing any parts, shut off the machine and on principle disconnect the power plug from the power supply.
- The machine may be taken into operation only if all guarding devices are fitted and in protective position. As far as possible, cleaning should not be done hand, but using appropriate tools or equipment.
- Maintenance and repair work may be carried out only by means of suitable tools and by the people trained in the factory. - for reasons of safety, only genuine Roots spare parts may be used.

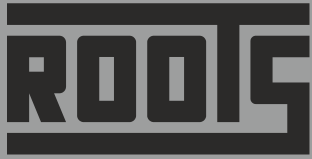
Activity	Interval	
	Daily	Weekly
Check the battery charge, recharge if necessary	●	●
Empty the dirt hoppers	●	●
Clean the broom space	●	●
Clean the panel air filter in the dust vacuum using the shaking device, check it for damage and replace if necessary	●	●
Check the rotary broom and side broom; clean or replace as necessary	●	●
Check sealing aprons (2 side aprons, 1 rear apron) for wear and clearance, replace if necessary		●
Check the function of the fan		●
Check the filter system (panel air filter) for leaks		●
Check the seals on the dirt hopper		●
Check the sweeping pattern; readjust, if necessary		●
Test drive and function test		●

Do's

- Use the machine for ***dry sweeping*** only.
- All aprons should be checked and adjusted for proper function and performance of the machine.
- Belt tension to be checked frequently and adjusted if necessary.
- Remove any threads/ropes entangled in the sides of the main broom.
- Check and clean the panel air filter with dry air.
- Main and Side broom to be adjusted to the required pressure as per the sweeping requirement.
- Check, clean and grease the castor wheel, dirt hopper wheels and main wheel.
- Clean and lubricate the main broom pressure adjustment assembly.
- Check and clean the mechanical movements in side broom lifting cable, drive cable and front apron lifting cable.
- Lift the main and side broom while transporting the machine.
- Use the front apron lifting mechanism to collect any bigger debris.
- Bypass the vacuum if the floor is in wet or damp condition.
- Use filter shaker before removing the hopper from the machine.
- Battery terminals should be cleaned once a week.
- Panel filter to be cleaned if it gets clogged with dirt.

Don't's

- Do not use the machine to collect water/liquids.
- Do not collect inflammable liquids/solid materials
- Do not use the machine if the filter gets clogged.
- Do not collect lengthy ropes/wires during sweeping.
- Do not use the machine when the battery indicates low reserve of power.
- Do not charge the battery immediately.
- Do not clean the machine with high pressure jet cleaner or a steam pressure cleaner.
- Do not use in-genuine spare parts.
- Do not use the machine on soft carpets.



Roots Multiclean Ltd.

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



+91 (422) 4330 330



rmclsales@rootsemail.com



rootsmulticlean.com



+91 95978 12345

