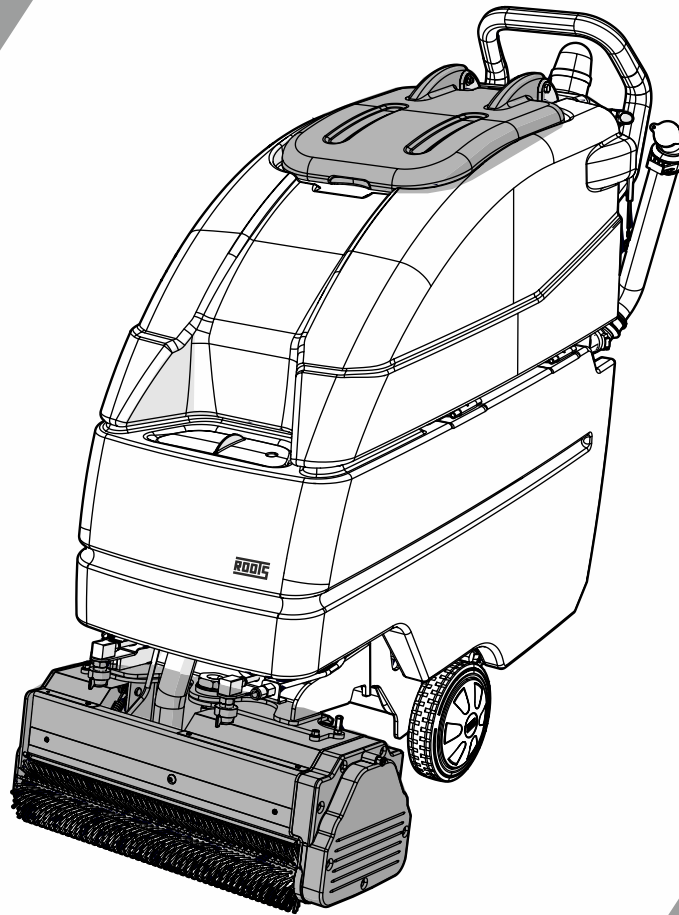
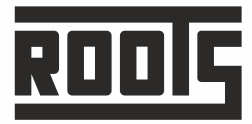


RootsScrub E4550 ES

Escalator Cleaner
Electric



230V/50Hz
220V/60Hz

Operator's Manual

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



| | |
|----|---|
| 4 | Technical specification |
| 6 | Introduction |
| 7 | Customer support system & Annual maintenance contract |
| 8 | Know your machine |
| 10 | Accessories |
| 11 | Decals on the machine |
| 12 | Safety instructions |
| 15 | Machine operation |
| 28 | Maintenance |
| 36 | Troubleshooting |
| 37 | Do's & Don'ts |
| 38 | Illustrated Parts List |

IMPORTANT NOTE:

Roots Multiclean Ltd. (RMCL) is not liable for any legal claims that may arise as a direct or indirect result of the contents of this manual.

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

P/N: 557520002-00, Rev: B, Date: 09/2018

Prepared by: KM-NPM TD Dept.

MACHINE DATA

Please fill at the time of installation for future reference:

Model No. - _____

Serial No. - _____

Accessories - _____

Installation Date - _____

TECHNICAL SPECIFICATION - 230V/50Hz



Rated voltage - **230 V**

Rated current - **8 A**



Frequency - **50 Hz**

Brush motor power (max) - **750 W**

Vacuum motor power (max) - **850 W**

Water pump power (max) - **100W**

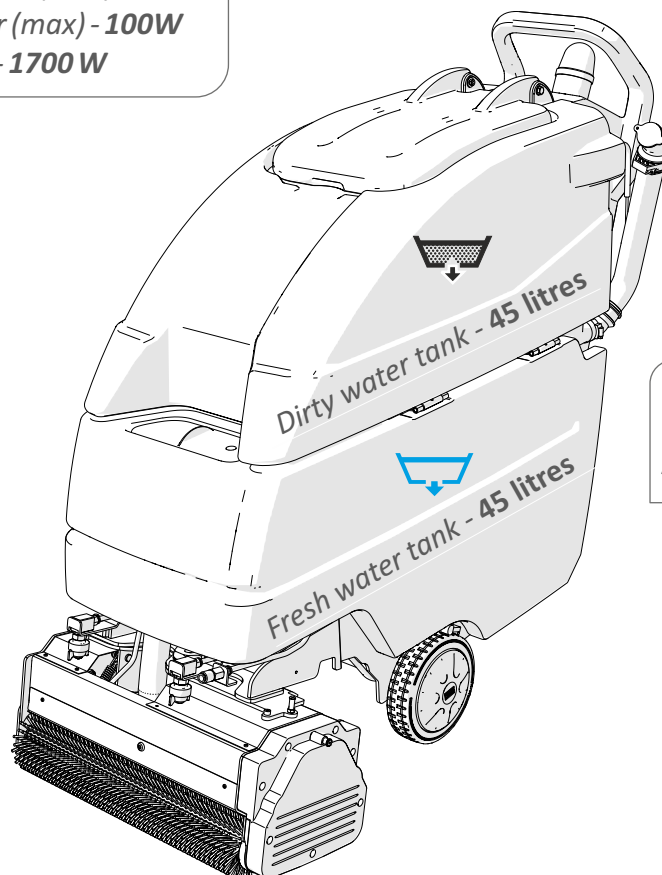
Total power (max) - **1700 W**



Vacuum pressure,
max. - **160 mm of Hg**

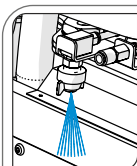


Noise level - **78 dB**



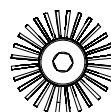
Dead weight, dry - **120 kg**

Total weight, ready to
operate - **160 kg**



Wet nozzle discharge - **0.46 lpm**

Suction nozzle discharge - **0.56 lpm**

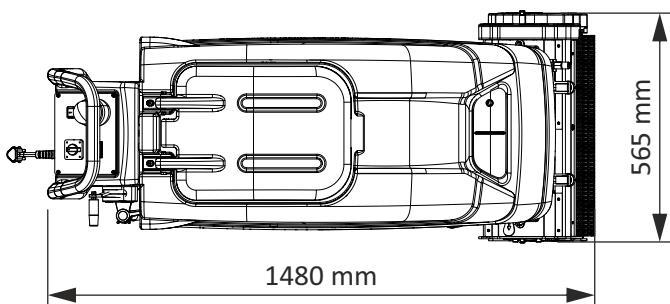
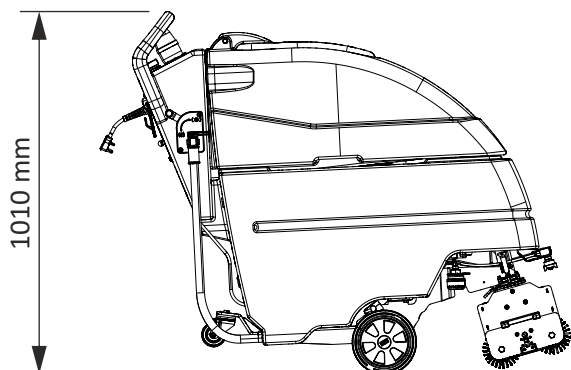


No. of brushes per machine - **2 sets**

Brush diameter - **115 mm**

Brush speed - **400 rpm**

Scrubbing width - **500 mm**



TECHNICAL SPECIFICATION - 220V/60Hz



Rated voltage - **220 V**

Rated current - **8 A**



Frequency - **60 Hz**

Brush motor power (max) - **750 W**

Vacuum motor power (max) - **850 W**

Water pump power (max) - **100W**

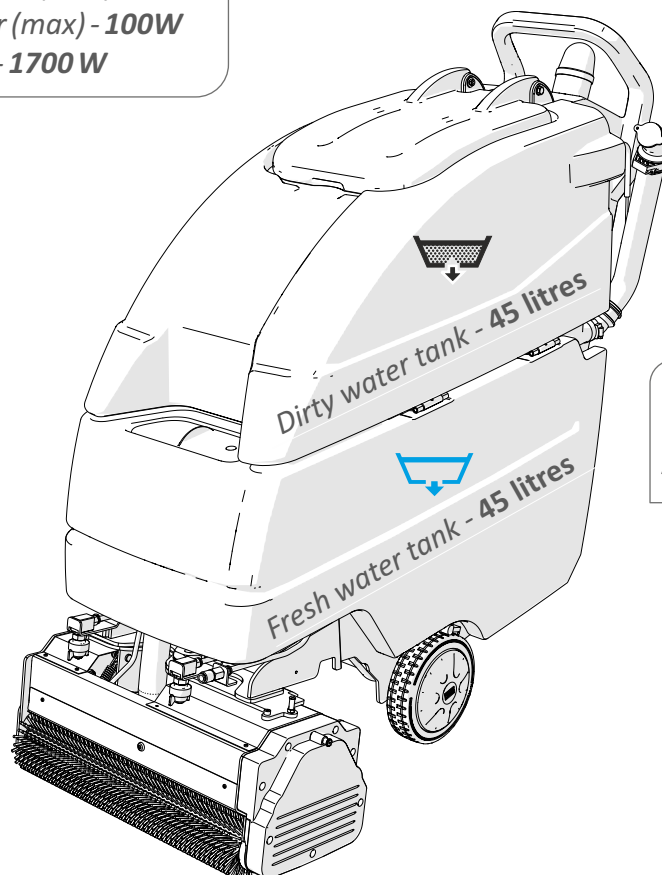
Total power (max) - **1700 W**



Vacuum pressure,
max. - **160 mm of Hg**

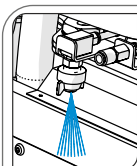


Noise level - **78 dB**



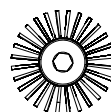
Dead weight, dry - **120 kg**

Total weight, ready to
operate - **160 kg**



Wet nozzle discharge - **0.46 lpm**

Suction nozzle discharge - **0.56 lpm**

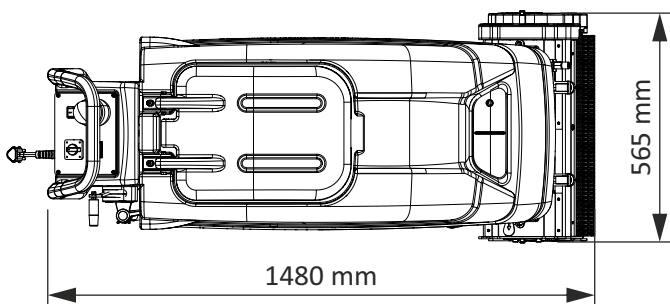
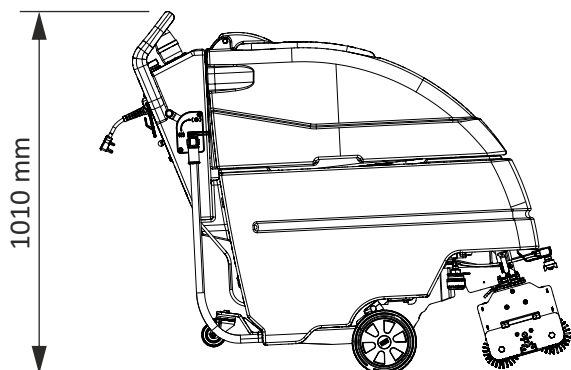


No. of brushes per machine - **2 sets**

Brush diameter - **115 mm**

Brush speed - **478 rpm**

Scrubbing width - **500 mm**





PREFACE

Dear Customer,

We are pleased with your having chosen the **RootsScrub E4550 ES** machine for your escalator 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 Ltd. (RMCL) as a trusted partner for your cleaning requirements and solutions.

USAGE, HANDLING AND MODIFICATIONS

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 center 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 authorized 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 Operator'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 Operator's Manual is an integral part of the machine and must not be misplaced.

RMCL 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.

NOTE: Illustrations shown in this manual are for representative purpose only. Actual product may vary.

CUSTOMER SUPPORT SYSTEM



CUSTOMER SUPPORT SYSTEM (CSS)

RMCL has a dedicated CSS Team to ensure prompt after sales service support. One call solution for all your complaints/concerns. Register your complaint or concern through the below toll free number for hassle free support. The customer support executive registers your complaint/concern and will keep you updated on the progress ensuring prompt closure.

Toll Free Number:

1800 41 99 77 9

Our timings (Monday to Saturday):

8:00 am to 7:00 pm

Our Address:

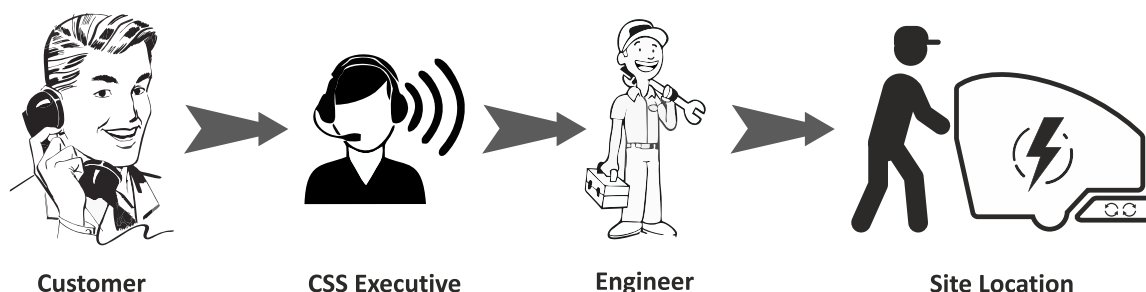
Roots Multiclean Ltd.

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

Phone: +91 (422) 4330 330, E-mail: rmclsales@rootsemail.com

Web: rootsmulticlean.in

Customer Support System Process



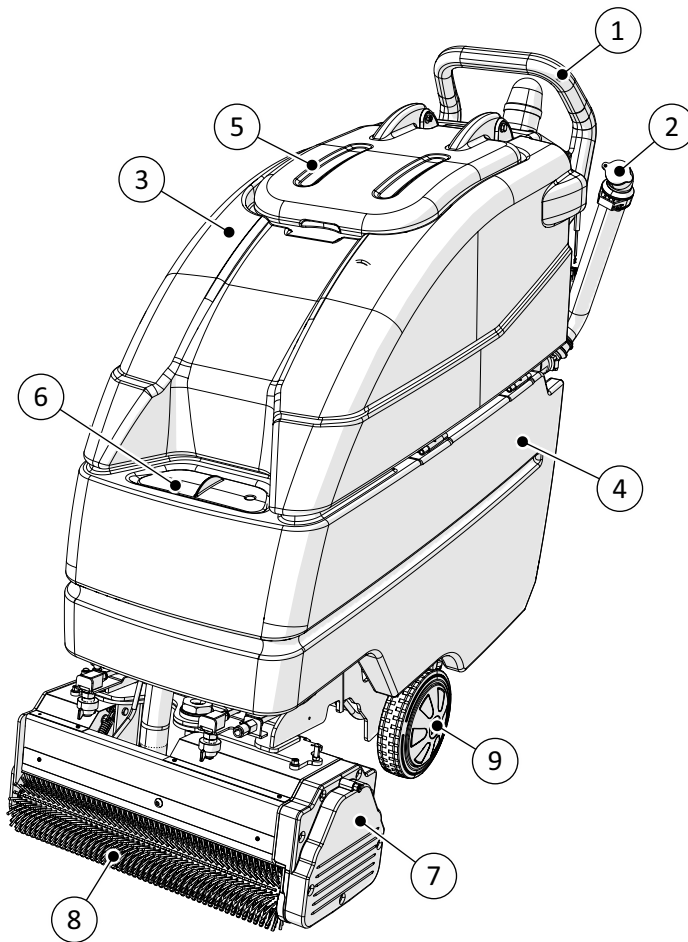
ANNUAL MAINTENANCE CONTRACT

AMC

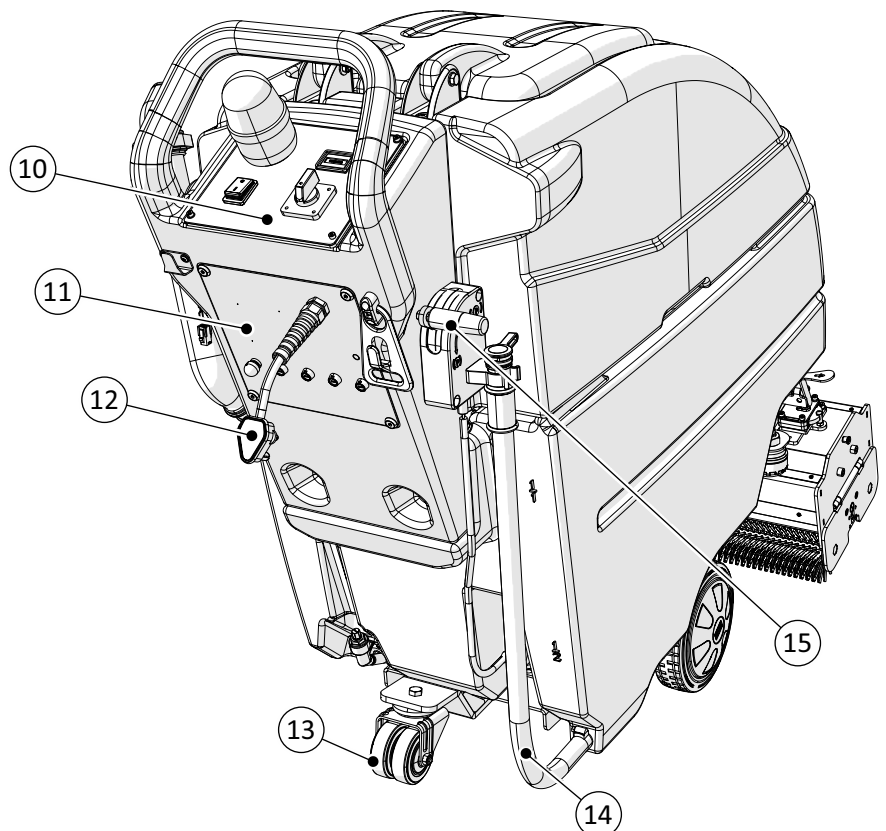
AMC or Annual Maintenance Contract is a professional and timely maintenance cover offered by RMCL to its customers. AMC takes care of scheduled and preventive maintenance services. Equipment under AMC qualifies for agreed scheduled visits during the contract.

Advantages of AMC:

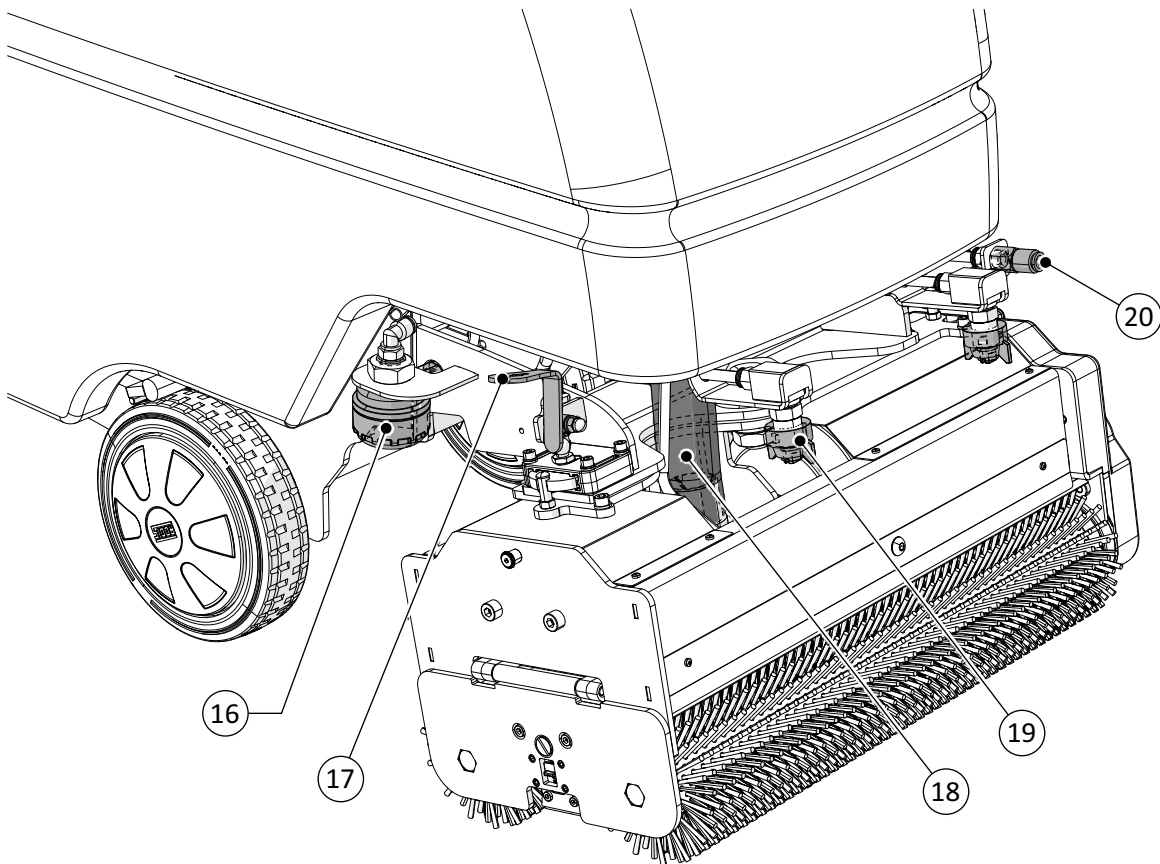
- ✓ Pan India network presence.
- ✓ Maximum equipment uptime.
- ✓ Focus on your business while we take care of your equipment.
- ✓ Well trained engineers to take care of the equipment.
- ✓ System driven scheduled periodic maintenance.
- ✓ Genuine spare parts.
- ✓ Toll free number assistance for breakdown.



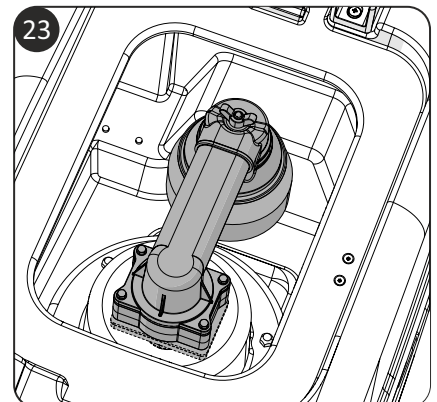
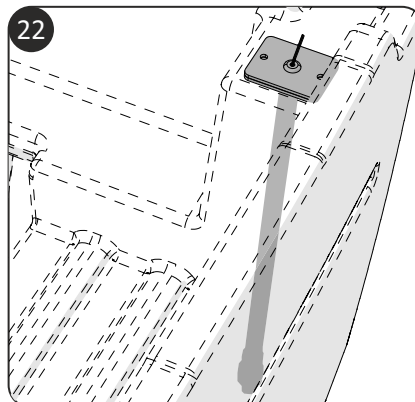
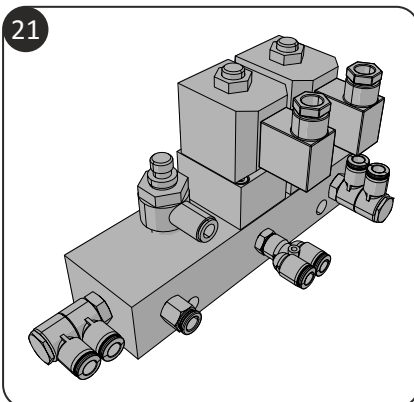
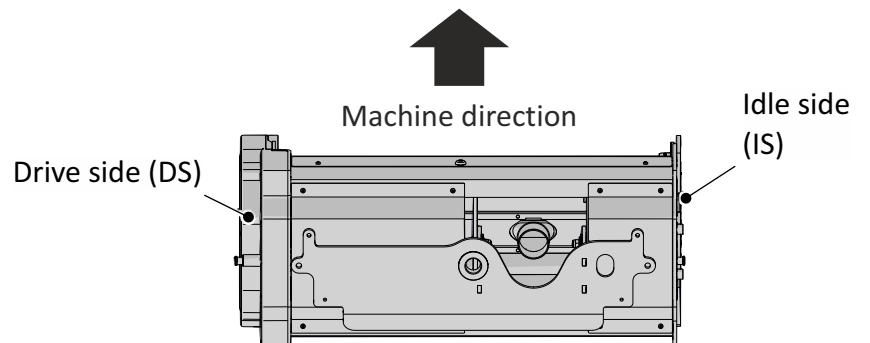
1. Handle
2. Dirty water drain hose
3. Dirty water tank
4. Fresh water tank
5. Dirty water tank lid
6. Fresh water fill port with filter
7. Swivel type brush head
8. Cylindrical brushes
9. Main wheel

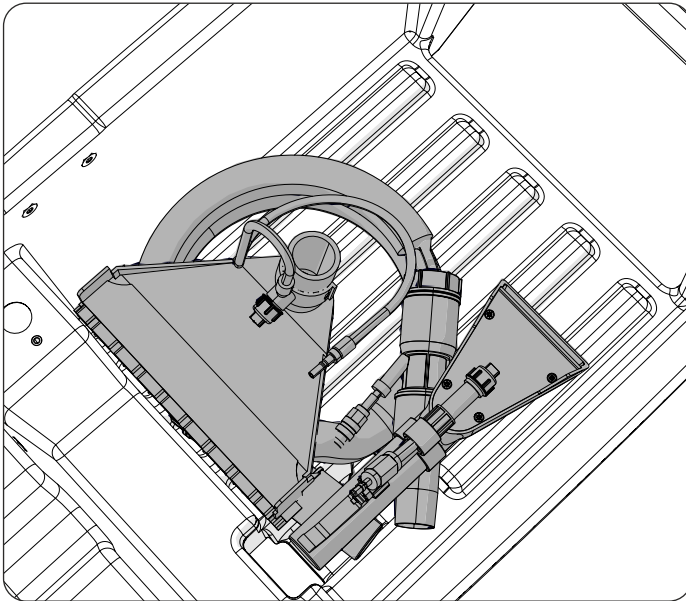
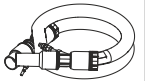


10. Control panel
11. Electrical fuse panel
12. Main power cord
13. Swivel castor wheel
14. Fresh water drain hose
15. Parking brake lever



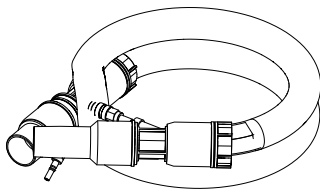
- 16. Filter for water pump
- 17. Lever to rotate brush head
- 18. Suction hose
- 19. Water spray nozzle
- 20. Accessories attachment point
- 21. Water manifold
- 22. Electrical float switch
- 23. Float for vacuum shut-off





Accessories storage location

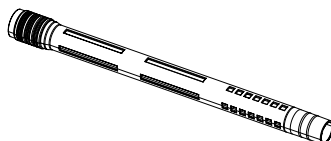
1. Hose assembly with adaptor: Flexible hose, used to extend the reach of the operator when using the external accessory while cleaning hard to reach areas.



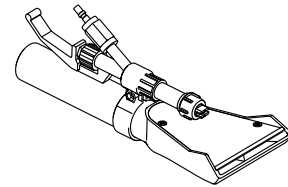
2. Raiser cleaner: Used to clean the riser section of the escalator step.



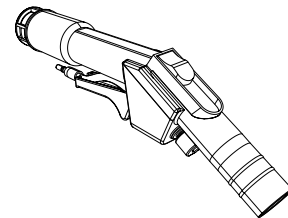
3. Extension handle - straight: Used to extend the reach of the operator to clean the escalator steps with an external accessory.



4. Floor cleaner: Used to clean the landing platform of the escalator unit. It can also be used to clean the spill.



5. Trigger assembly: Used to attach the hose with other accessories.



DECALS ON THE MACHINE



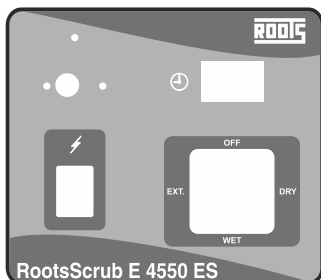
These labels appear on the machine in the locations indicated. If any label becomes damaged or illegible, install a new label in its place.



(1)



(2)



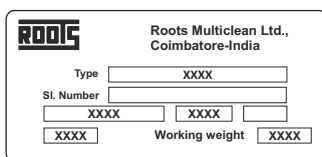
(3)



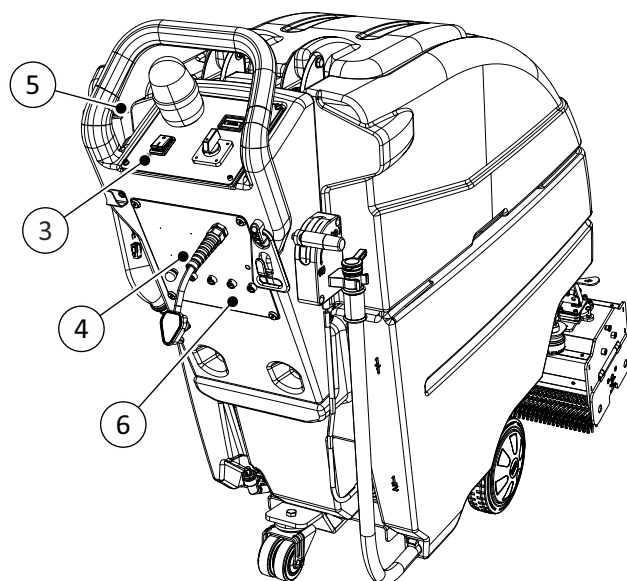
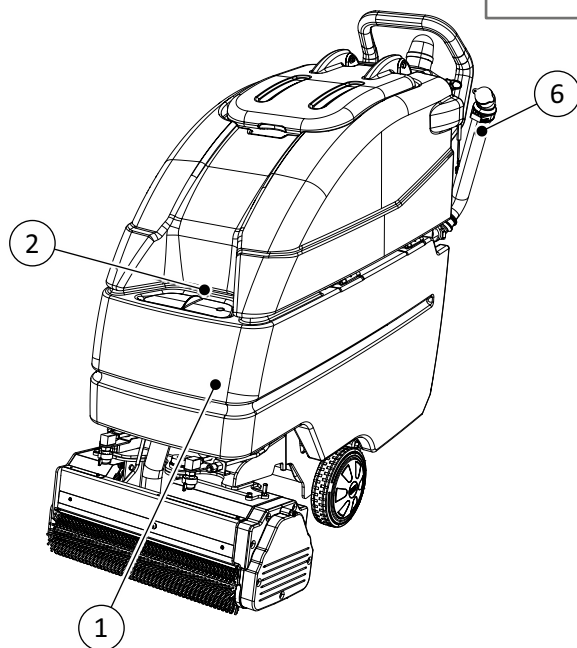
(4)



(5)



(6)



1. ROOTS logo
2. Max temperature for fresh water
3. Control panel sticker
4. WARNING - Read Manual
5. Dirty water drain
6. Nameplate sticker

SAFETY INSTRUCTIONS



SAFETY & WARNING SYMBOLS

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

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

Electrical Power Connection Safety Instructions:



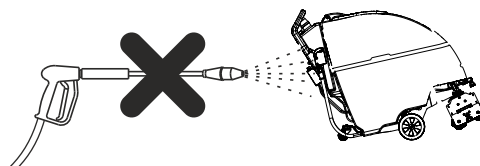
DANGER

- The voltage indicated on the name plate must correspond to the voltage of the electrical source.
- While working with fluids (such as detergents), we recommend the use of a safe socket with over current protection.
- Please use the mains cable authorized by the manufacturer; the same is also applicable when you replace the internal cables.
- Check the power cord with mains plug for damage before every use. If the power cord is damaged, please arrange immediately for the exchange by an authorized customer service or a skilled electrician.
- Never touch the mains plug with WET hands.
- Make sure that the power cord or extension cables are not damaged by running over, pinching, dragging or similar. Protect the cable from heat, oil, and sharp edges.

- The power cord must be checked regularly for damages, such as cracks or aging. If damage is found, the cable must be replaced before further use.
- If couplings of the power cord or extension cable are damaged replace the splash protection and the mechanical tightness must be ensured.



DO NOT CLEAN THE MACHINE WITH A WATER HOSE OR HIGH-PRESSURE WATER JET (DANGER OF SHORT CIRCUITS OR DAMAGE TO MACHINE).



Application Safety Instructions:



DANGER

- The water level indication hose must be cleaned regularly and checked for signs of damage.
- Never scrub or vacuum up explosive liquids, combustible gases, explosive dusts as well as undiluted acids and solvents! This includes petrol, paint thinner or heating oil which can generate explosive fumes or mixtures upon contact with the suction air. Acetone, undiluted acids and solvents must also be avoided as they can harm the materials on the machine.
- Do not scrub or vacuum up any burning or glowing objects.
- Do not use this machine as a vacuum cleaner.
- Humans and animals must not be scrubbed/vacuumed with this machine.
- This machine must not be used to scrub/vacuum floors.
- Only use chemicals recommended by the manufacturer and comply with their application, disposal and warning guidelines.
- Do not use the recommended detergents in an undiluted state. The products are safe for operations as they do not contain any acids, alkalis or environment hazardous substances. We recommend to keep the detergents out of reach of children. If the detergent comes in contact with the eyes, please rinse the eyes thoroughly with water, consult a doctor immediately if the detergent has been swallowed.



CAUTION

- This machine is not suitable for vacuuming dust. This endangers health.
- Please follow the regulations for disposing off dirty water.
- This machine is not a vacuum cleaner! Never suck in more fluid than what has been sprayed. Do not use to suck in dry dust!
- This machine must be used only on indoor escalators.

SAFETY INSTRUCTIONS



Operation Safety Instructions:

DANGER

- The operator must use the machine properly. The operator must consider the local conditions and must pay attention to third parties, in particular with children, when working with the machine.
- Always use appropriate gloves while working on the machine.
- The machine may only be used by persons who have been instructed in handling the machine or have proven qualification and expertise in operating the machine or have been explicitly assigned the task of handling the machine.
- The machine must not be operated by children or persons who have not been instructed accordingly.
- This machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge.
- Children should be supervised to prevent them from playing with the machine.
- Turn off the machine immediately in case of leaks.
- Caution! Switch the machine off immediately in case foam or liquid escape!
- Do not open the hood/guards when the motor is running.
- Before operating the machine ensure that the escalator is in perfect working condition.
- **The machine must be positioned only at the lower level of the escalator while cleaning.**
- Ensure that the parking brake is engaged before operation.

Transport Safety Instructions:

WARNING

- The brush motor should be shut off and the brush head must be raised.
- All water systems must be shut off to prevent water spill/wastage
- Accessories if attached must be disconnected.

Maintenance Safety Instructions:

WARNING

- Switch off the power prior to performing any cleaning or maintenance tasks on the machine, replacing parts or switching over to another function. In the case of mains operated machines, remove the mains plug.
- Maintenance work may be carried out only by approved customer service outlets or experts in this field who are familiar with the respective safety regulations.
- Please observe the local safety regulations regarding portable commercially used machines.
- When performing any maintenance or service tasks ensure that the machine is away from the escalator.

Spare Parts & Accessories:

WARNING

Only use accessories and spare parts which have been approved by the manufacturer. The exclusive use of original accessories and original spare parts ensures that the appliance can be operated safely and trouble free.

Equipments With Rotating Brushes:

DANGER

- Use only brushes that are provided with the machine or specified in the Operations Manual. The use of other brushes can affect the safety of the machine.
- Please keep in mind that the power cord or extension cable can be damaged when run over while operating the cleaning head with rotating brushes or the escalator itself.

DANGER - Do Not Scrub Or Vacuum:
**Corrosive/Battery Fluids/Explosive/Flammable/
Magnetic/Radio-active/Biohazard Materials.**



Motorized Suction Head:

CAUTION



Safety Gear:







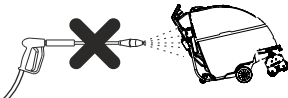
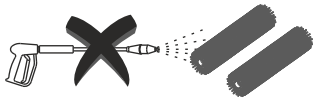
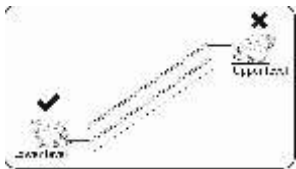







As necessary



SAFETY INSTRUCTIONS



SYMBOL & HAZARD PICTORIAL DEFINITIONS

| | | | |
|---|---|---|--|
|  <p>Read the Operator's Manual</p> |  <p>General Warning</p> |  <p>Caution</p> |  <p>Ecological Hazard</p> |
|  <p>Motorized Brush Head</p> |  <p>Toxic Hazard</p> |  <p>Do Not Use High Pressure Jets</p> |  <p>Do Not Use High Pressure Jets</p> |
|  <p>Position Warning</p> |  <p>Reset Warning</p> |  <p>Electrical Hazard</p> |  <p>STOP No Access</p> |
|  <p>No Smoking</p> |  <p>Do not let powercord come in contact with water or other fluids.</p> |  <p>Disconnect Powercord</p> |  <div> <p>⚠ DANGER</p> <p>Electrical Shock or Burn Hazard.</p> <p>Turn off power supplying this equipment before working on it.</p> </div> <p>Electric Shock Hazard</p> |

MACHINE OPERATION

OPERATOR RESPONSIBILITY

The operator's responsibility is to take care of the machine's daily maintenance and routine checkups to keep the machine in good working condition.

The operator must also inform the supervisor when scheduled maintenance of the machine is to be carried out.



Read this manual completely and understand before operating this machine. Also ensure that the persons who are going to operate this machine have also read and understood the contents of this manual.

**Do not use this machine to collect any external water.
Do not use this machine as a vacuum cleaner.**

**THIS MACHINE IS INTENDED TO CLEAN ESCALATOR STEPS
ONLY AND NOT FOR REGULAR FLOORS.**

Environmental Responsibility



The packaging material can be recycled. Please do not place the packaging into the ordinary refuse for disposal, but arrange for the proper recycling.



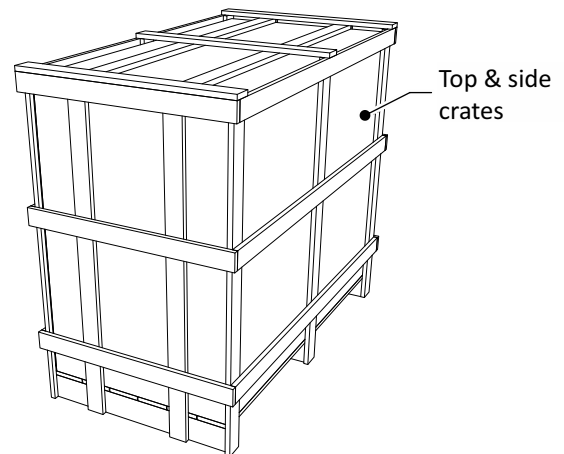
Old machines contain materials that can be recycled. Please arrange for the proper recycling of old machines. Batteries and actuators contain substances that must not enter the environment. Please dispose of your old machines, batteries and actuators using appropriate collection systems.

UNLOADING

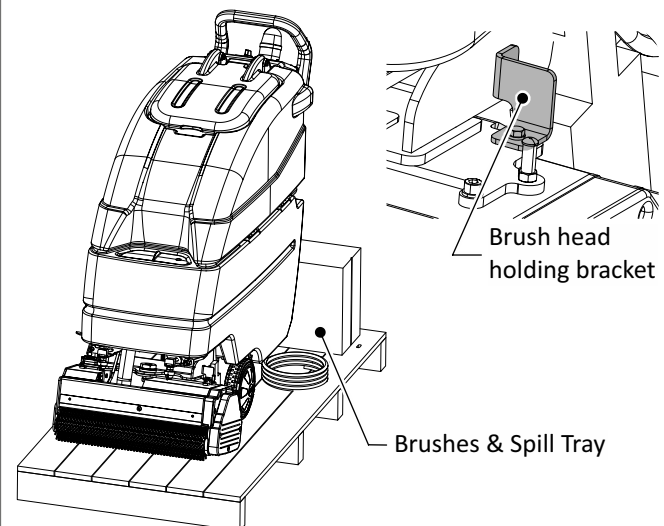


The machine is shipped in a packed condition to the customer's place. To unpack the machine follow the below steps:

- ➔ Remove the packing crates from the sides and the top.
- ➔ Remove the box containing the brushes and the spill tray.
- ➔ Remove the brush head holding brackets (2 nos).
- ➔ Cut the retaining straps at the front and rear.
- ➔ The main power cord is wound and strapped to pallet, ensure that the straps are removed.
- ➔ Carefully lift the machine from the pallet and place it on the floor.



(Packed condition)



NOTE

- ☞ Care should be taken when removing the packing crate as not to damage the machine.
- ☞ Ensure that sufficient man power is used to lift the machine. (Approximate weight of the machine is 120 kg.)
- ☞ Owner's personnel are not allowed to unpack the machine.

MACHINE OPERATION

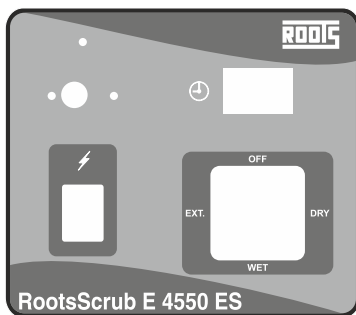
WORKING PRINCIPLE



Working Principle of the Machine

A pair of suitable brushes are required for dry/wet cleaning of the escalator steps. The rotating brush scrubs the escalator step thoroughly, removing dirt through suds, thereby cleaning the escalator step. The dirty water is drawn during the same cycle through the inbuilt suction system.

CONTROL PANEL SYMBOLS

These symbols identify controls switches on the machine:



| | |
|---|--|
|  Power - Beacon light glows when the machine is turned On. |  Hour meter - Displays the total number of hours the machine has been used. |
| <u>OFF</u> OFF - All machine functions are in Off condition. | <u>DRY</u> DRY - Machine is operated in dry mode. |
| <u>WET</u> WET - Machine is operated in wet mode. | <u>EXT</u> EXT - Machine is operated using external accessories. (if equipped) |

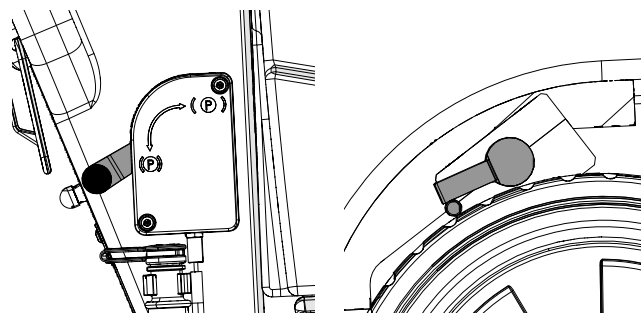
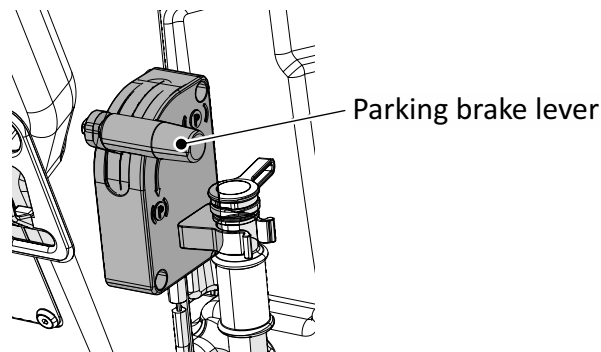
Parking Brake



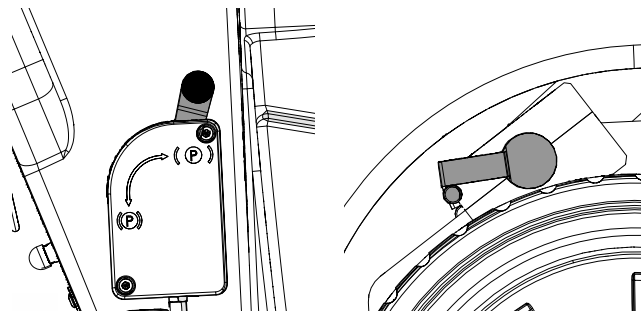
The parking brake is used to prevent any unwanted movement of the machine during the cleaning operation.

A lever is used to operate the parking brake.

- *Lever position down* - parking brake engaged
- *Lever position up* - parking brake disengaged



Lever Down - Parking Brake Engaged



Lever Up - Parking Brake Disengaged



MACHINE OPERATION

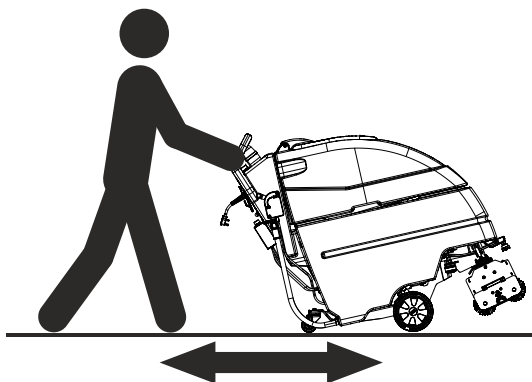
This section describes on how to use the machine under the following sections:

- ➔ Pre-scrubbing checkpoints
- ➔ Transporting the machine
- ➔ Filling of water and solution
- ➔ Water level setting
- ➔ Installation/Removal of brushes
- ➔ Raising/Lowering of brush head
- ➔ Scrubbing procedure
- ➔ End of scrubbing
- ➔ Draining of tanks

Pre-scrubbing Checkpoints

- Check the tank lid seals for damage and wear.
- Check the float for any stuck debris.
- Check the condition of the brushes. Remove any string, rope or other debris wrapped around them.
- Check the vacuum hose for blockage, damage.
- Ensure that the dirty water tank is drained and cleaned.
- Ensure that the electrical power rating matches that on the machine's nameplate.
- Check whether the brush head is locked securely before starting cleaning operations.
- Check the nozzles for any debris block.
- Check whether the debris tray is cleaned and locked in position.

Transporting the Machine



Use the handle provided to move the machine forward or backward. Steering the machine is enabled via a swivel castor wheel located at the rear of the machine.

Note: Ensure that the brush head is locked in position before transporting the machine.

- ➔ Care should be taken not to bump the machine onto the escalator, this will cause damage to the machine or the escalator itself.

! WARNING

Do not push or pull the machine at a fast pace if it is full of water, risk of tipping and damaging the machine or risk of running away and causing damage to property or persons.

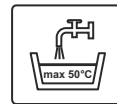
👉 CAUTION

Hold the handles tightly when going down or up a slope. Use industrial gloves for better grip (if required).

! WARNING

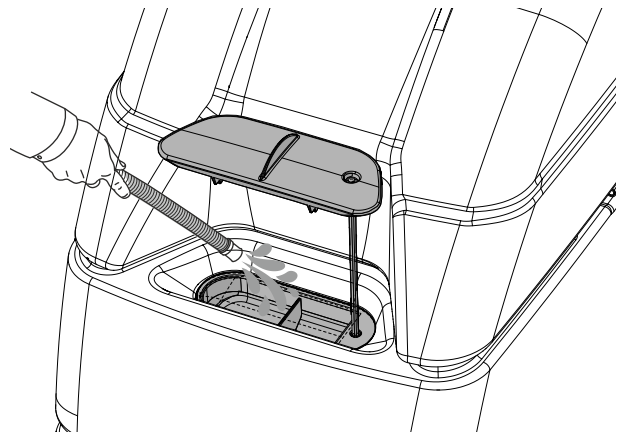
NEVER TRANSPORT THE MACHINE OVER THE ESCALATOR.

Filling of Water



Fill only clean fresh water with Max. 50°C in the fresh water tank. **DO NOT** fill dirty or contaminated water.

- Open the cover of the fresh water fill port.
- Fill in fresh water at a level of 45 liters. If required detergent can also be added.



- Close the cover of the fresh water fill port.

! WARNING

- **Do not remove the filter while filling fresh water, risk of contaminating the water with foreign object which may damage the water pump/manifold.**
- **Do not mix dirty water.**
- **Do not mix acids or heavy industrial de-greasers.**

Recommended detergents:

Ensure that only low-foaming, non corrosive detergents are used.



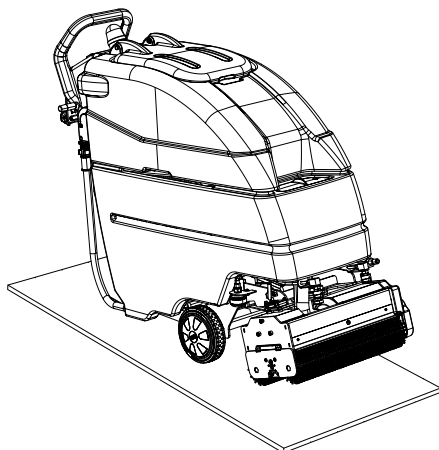
Installation/Removal of Brush

The Escalator Cleaner machine uses a cylindrical type of brush to clean the escalator steps.

To install or remove the cylindrical brush from the machine follow the steps below:

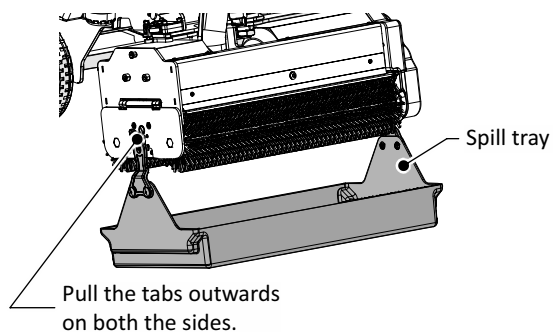
Step 1:

Position machine on a flat surface and apply parking brake.



Step 2:

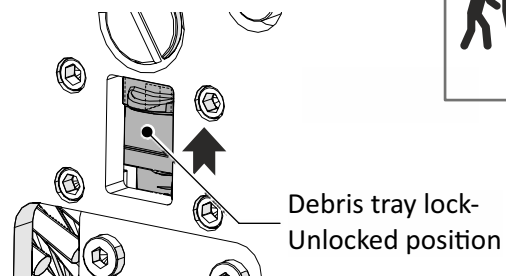
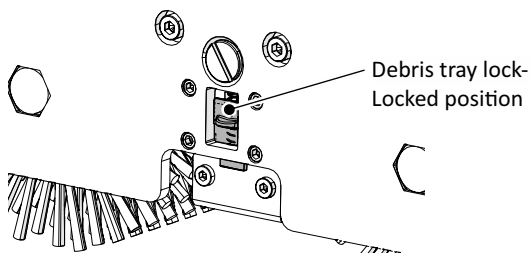
Remove the spill tray from the machine.



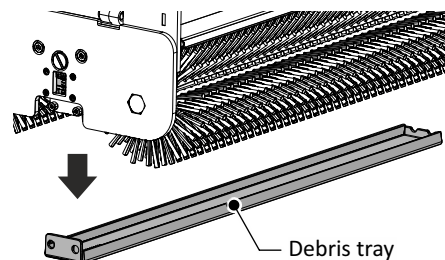
Step 3:

Remove the debris tray from the machine.

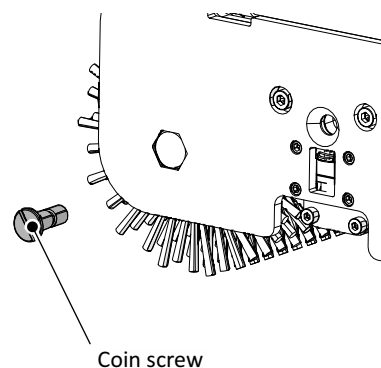
a. Pull the debris tray lock upwards to unlock.



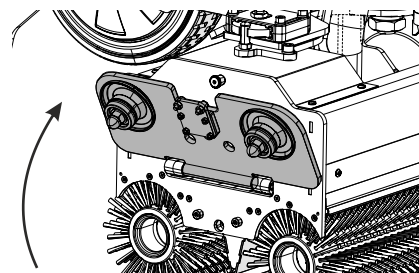
b. Pull the debris tray downwards.



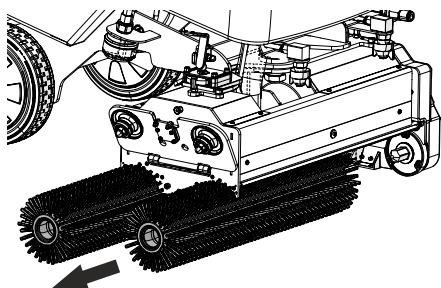
c. Use a coin and unscrew the coin screw.



d. Open the idler cover upwards.



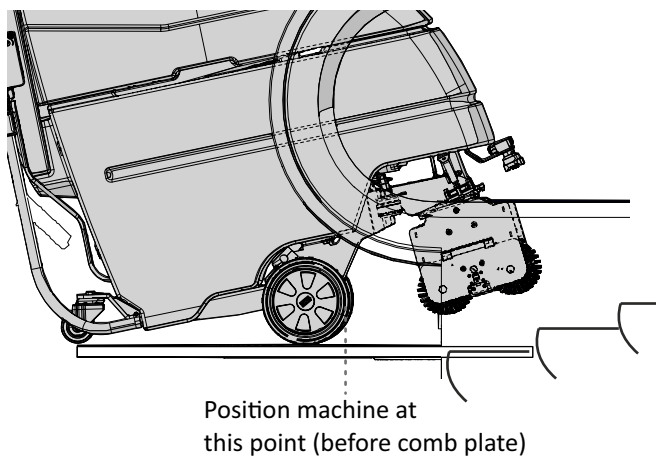
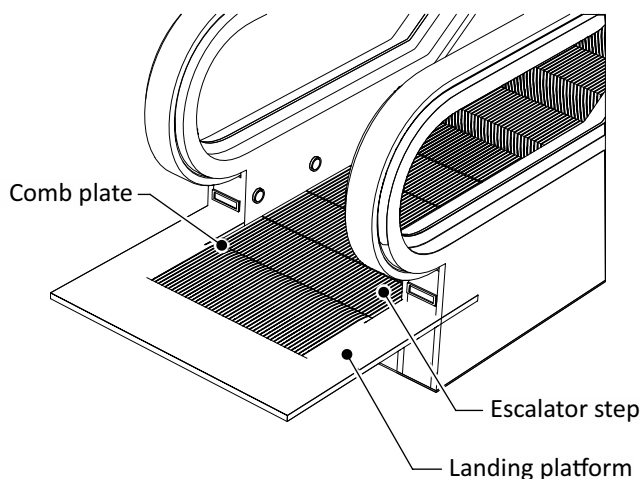
e. Pull out the brushes.



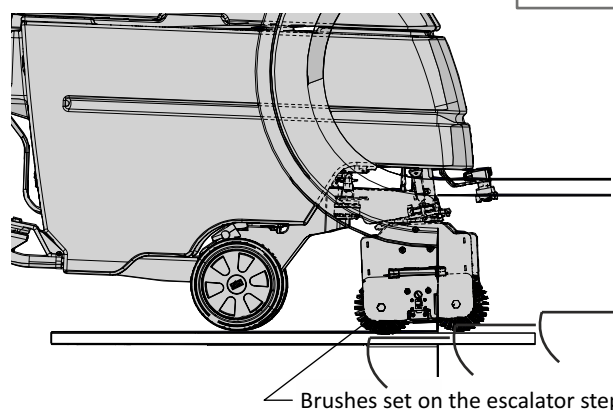
Raising/Lowering of Brush Head

To raise/lower the brush head, follow the steps below:

a. Move the machine towards the escalator.



b. Tip the machine downwards and engage the parking brake.



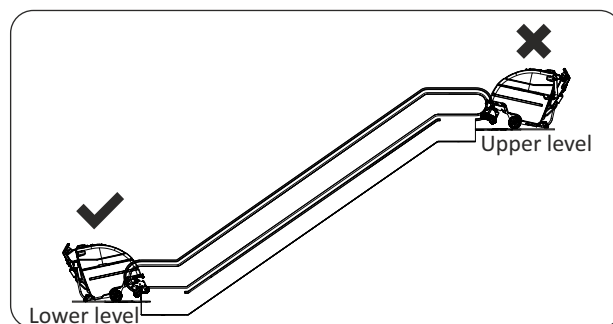
The machine will now rest on its operating position.

! CAUTION

Ensure sufficient care is taken when lowering the machine in position, might tip faster due to self weight.

! WARNING

THE RECOMMENDED POSITION OF THE MACHINE TO OPERATE IS AT THE LOWER LEVEL OF THE ESCALATOR.



→ Ensure that the motion of the escalator is directed towards the machine.

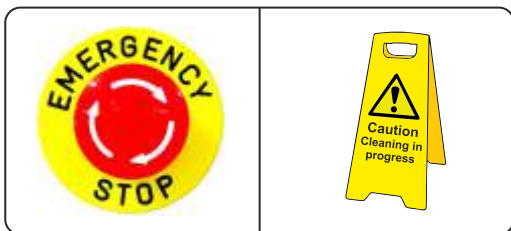


Scrubbing Procedure

The machine cleans the escalator steps in two methods, viz. Dry & Wet. Follow the below instructions to clean the escalator steps in its respective modes:

Before starting cleaning operation on the escalator kindly follow the below points for safety:

- Ensure that a safety sign “Cleaning in Progress” is placed on the lower and upper levels of the escalator.
- Ensure that no one steps on the escalator during the cleaning process.
- Ensure that the location of the emergency stop switch of the escalator is known to the person operating the machine, in case of an emergency.
- Ensure that the beacon lamp on the machine is in operating condition.
- Ensure that only genuine brushes are used.
- Ensure the function of the parking brake of the machine.
- Ensure that the operator wears only **tight fitting clothes**.



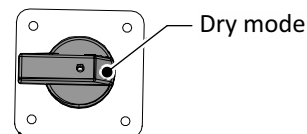
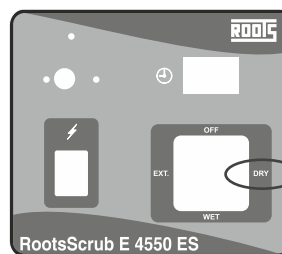
Useful tips for cleaning the escalator steps:

- Prior to wet cleaning mode, it is necessary to clean the escalator first in the dry mode to remove solid dust or debris.
- If any special cleaning agents are used, follow the instructions given by its manufacturer.
- Too much foam indicates excessive dosage of cleaning agent.
- Use only clean fresh water to maximize the cleaning solution's efficiency.

Dry Scrubbing:

The dry scrubbing procedure is used to initially remove the dirt stuck on the escalator steps.

- Brushes: Use only **Silicone Carbide** brushes for dry mode.
- Ensure that the fresh water tank is filled with clean water.
- Ensure that the dirty water tank is empty and clean.
- Clean the nozzle in the suction hose and ensure that water is sprayed properly.
- **After positioning the machine on the escalator, ensure that the parking brake is engaged.**
- **Ensure that the motion of the escalator is directed towards the machine.**
- Connect the main power cord to a specified power outlet that matches the current rating of the machine.
- Remove the debris tray. (For dry mode only)
- Switch On the escalator.
- Switch On the machine, the beacon lamp flashes.
- Set the switch to **DRY** mode in the control panel.
- The machine will start to dry scrub the escalator.
- In this dry mode the water will be sprayed inside the suction hose assembly to liquify the solid debris.
- The onboard vacuum system will then suck the liquified debris into the dirty water tank.

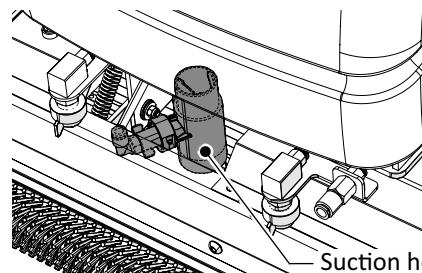


Continue cleaning till the escalator has completed two rounds for better cleaning results.

The suction will switch off when the dirty water tank reaches its maximum capacity or if the fresh water level gets empty.

Note:

- In this mode water will not be sprayed from the front nozzles.
- Also check the flow of water from the nozzle at the first start of the day.
- Upon completing the dry operation, remove the brushes and clean the bottom side of the brush head using the external accessory supplied. Place the spill tray under the brush head on doing so.



Suction hose assembly

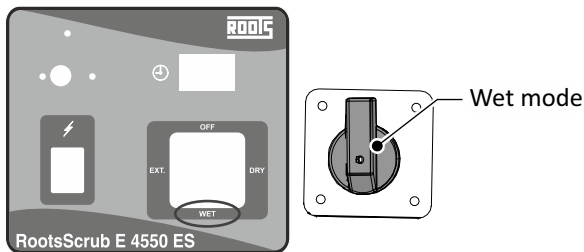


Wet Scrubbing:

The wet scrubbing procedure is used to scrub the escalator steps as a final cleaning operation.

- Brushes: Use only **Nylon** brushes for wet mode.
- Install the debris tray.
- **After positioning the machine on the escalator, ensure that the parking brake is engaged.**
- **Ensure that the motion of the escalator is directed towards the machine.**
- Switch the machine to **WET** mode using the knob on the control panel.
- Ensure that the debris tray is installed in the machine.
- Upon switching it can be noticed that the water is now sprayed from the forward nozzles located on top of the brush head.
- The onboard vacuum system will then suck the dislodged debris into the dirty water tank.

Note: Water pressure is factory set.



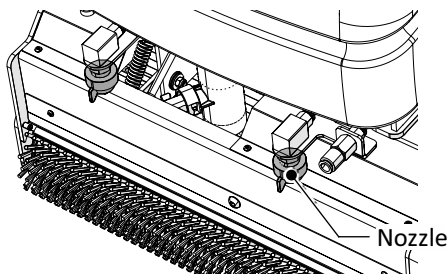
Continue cleaning till the escalator has completed two rounds for better cleaning results.

The suction will switch off when the dirty water tank reaches its maximum capacity or if the fresh water level gets empty.

The water flow to the front spray nozzles are timed for optimal machine performance. *It is factory set and should not be tampered.*

Note:

- *In this mode water will not be sprayed inside the suction hose assembly.*
- *Also check the flow of water from the nozzle at the first start of the day.*



Note:

- **Before switching to wet mode operation, ensure that the debris tray and brush head are cleaned.**
- **DO NOT use the wet mode for more than 3 minutes at a stretch, it may cause water to be collected on the escalator step.**
- **In case the suction and water systems are not working, it might be possible that the dirty water tank is full or the fresh water tank is empty.**

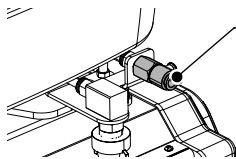
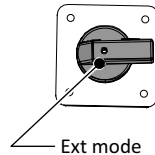
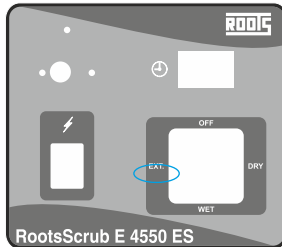
MACHINE OPERATION



Ext Cleaning Mode:

The Ext scrubbing procedure is used when external accessories are used.

- Set the switch position to EXT mode.
- Connect the required external accessory at the front port.
- Remove the suction hose from the brush head and connect it to the external accessory.
- Switch On the machine to use the connected accessory.



Water port for external accessory



External accessory attached to the machine.

In Ext. mode the water will be sprayed from the nozzles located on the accessory when the trigger is pressed. The suction will switch off when the dirty water tank reaches its maximum capacity or if the fresh water level gets empty.

Note:

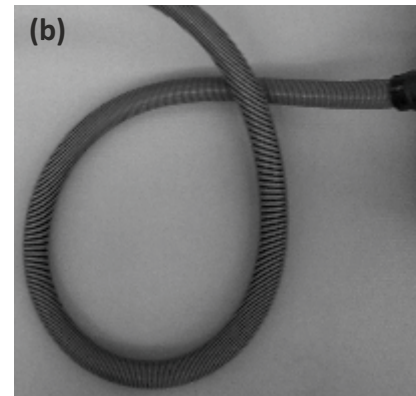
- In this mode water will be sprayed inside the suction hose assembly.
- Also check the flow of water from the nozzle at the first start of the day.

→ To connect the external accessory follow the below steps:

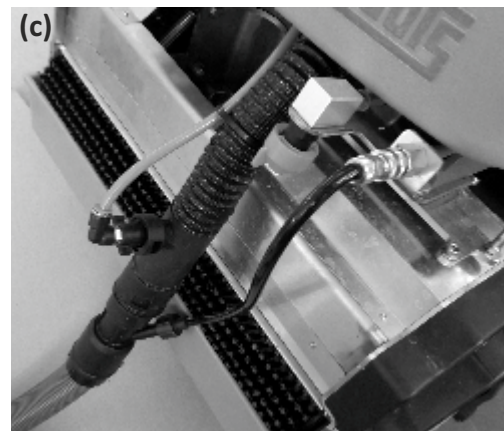
Disconnect the suction hose assembly from the brush head (a).



Connect the long suction hose to the disconnected hose assembly (b).

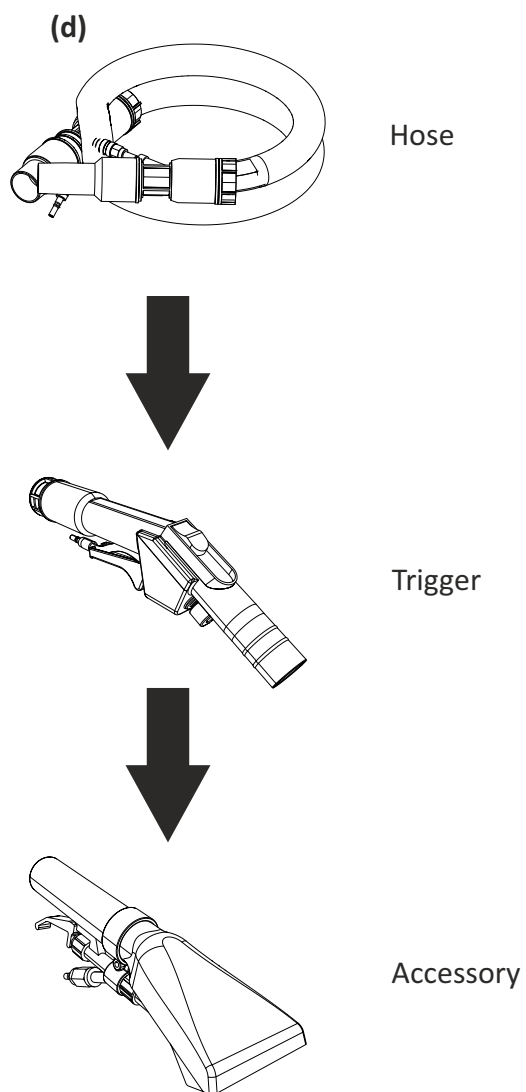


Connect the water supply hose at the port on the brush head as shown in the picture (c).





Connect trigger assy to the hose.
Connect the required accessory at the other end of the trigger,
also connect the water hose extension to the trigger assembly
(d).





Swiveling the Brush Head:

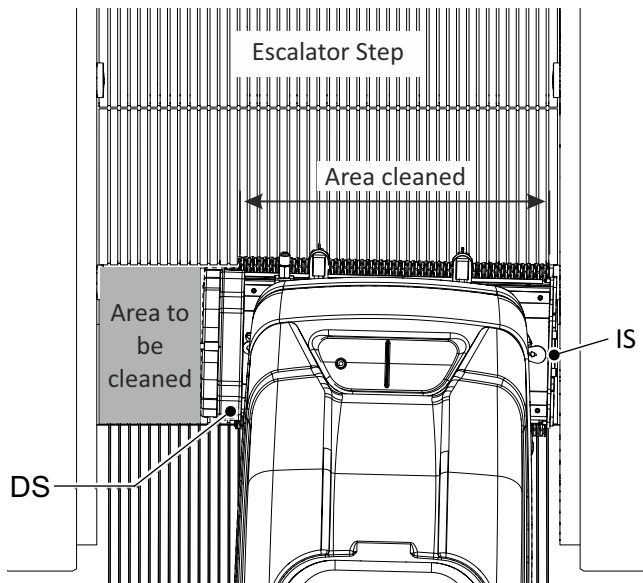
The brush head has a swiveling feature to facilitate cleaning the entire width of the escalator step.

Follow the below instruction to use the swivel brush head:

Position

Idle side - IS

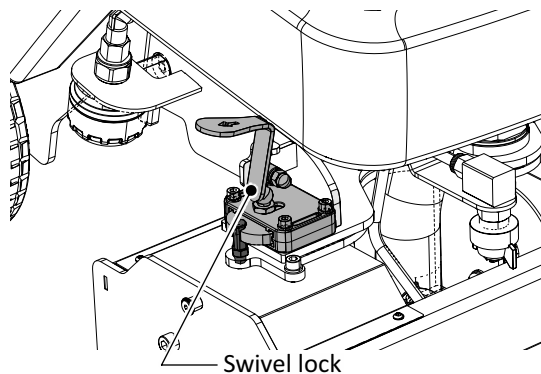
Drive side - DS



(A) Brush head position - 1

In this position the drive side of the brush head is facing the left hand side of the machine (viewed from the top). In this position only a half of the escalator step is cleaned (A).

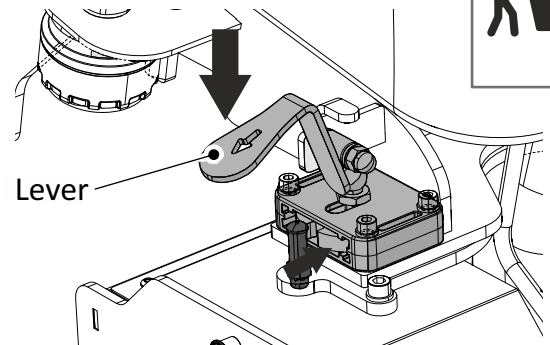
To clean the other half of the escalator step the brush head must be swivelled, follow the below steps to do so:



Swivel lock

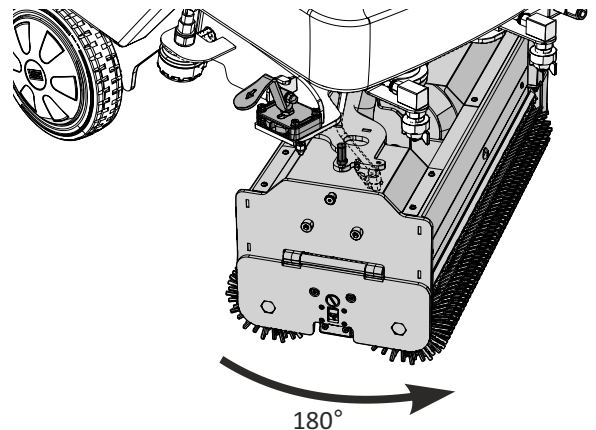
The swivel lock is located on top of the brush head assembly, it has a lever and a locking pin.

Press the lever downwards until the pin is released from the lock assembly, this is noticeable as the brush head will swivel a bit.

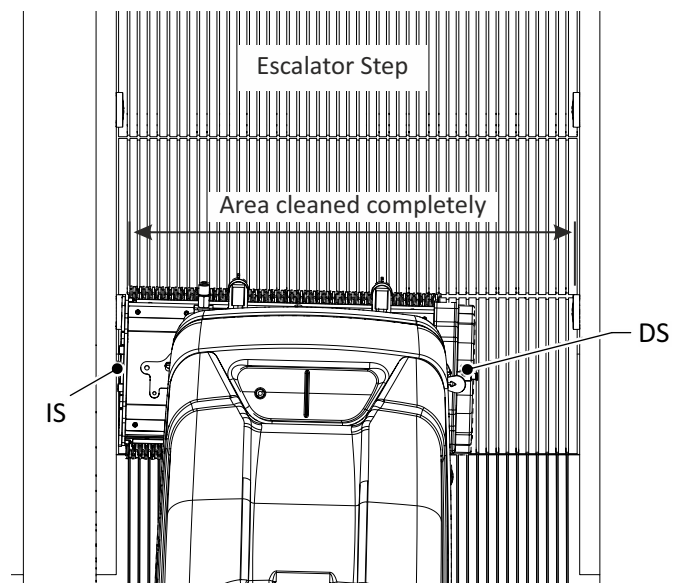


Lever

The brush head can now be swivelled at 180° and locked. This will enable the machine to clean the remaining half of the escalator step with a slight overlap in the center (B).



180°



(B) Brush head position - 2

In this way it can be ensured that the escalator step is cleaned completely in both Dry and Wet mode.



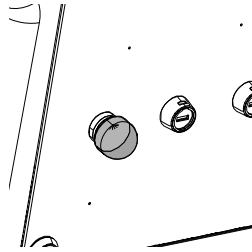
DO NOT MIX BRUSHES AND CLEAN THE ESCALATOR STEPS.



⚠ IMPORTANT ATTENTION

During scrubbing if the brush motor trips, reset it by pressing the circuit breaker switch.

➔ Wait for 30 seconds before reset.



⚠ WARNING

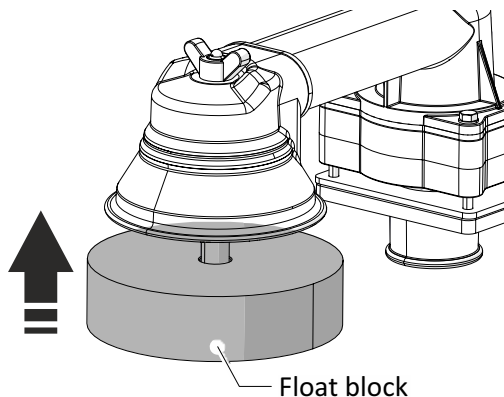
- ✓ *If the motor trips frequently, stop the cleaning operation, disconnect the power cord and call an authorized service center for assistance.*
- ✗ *Do not look for the problem by yourself.*

Float System

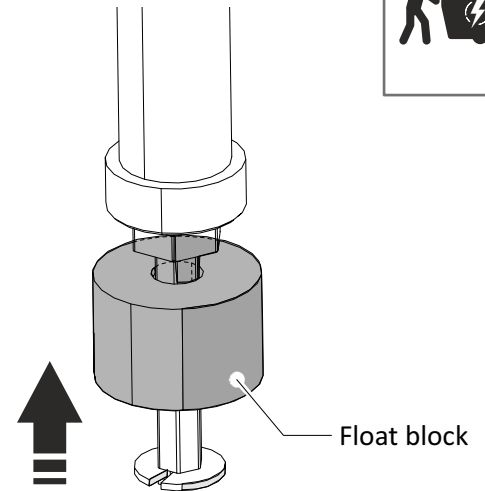
The machine is equipped with two floats for vacuum shut-off function.

1. Mechanical Float - The mechanical float is located inside the dirty water tank. It shuts off the vacuum immediately when the float block touches the top of the suction unit.

2. Electrical Float - The electrical float is located inside the fresh water tank. It switches off the machine as soon as the water level drops below the set value. This function is used to prevent any unwanted damage to the water pump.



Mechanical Float



Electrical Float



Water Monitoring System

The machine is equipped with a flow switch enabled water monitoring system to alert the operator during any malfunction. The system comprises of a flow switch, LED indicator with buzzer. The flow switch is connected to the main water manifold.

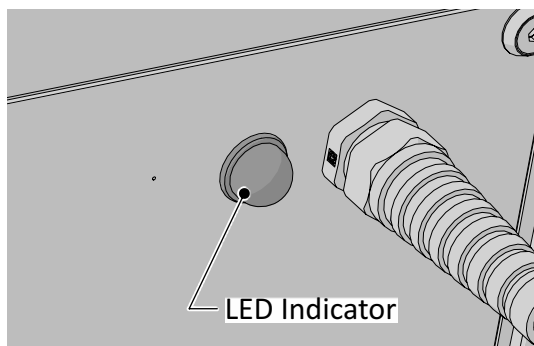
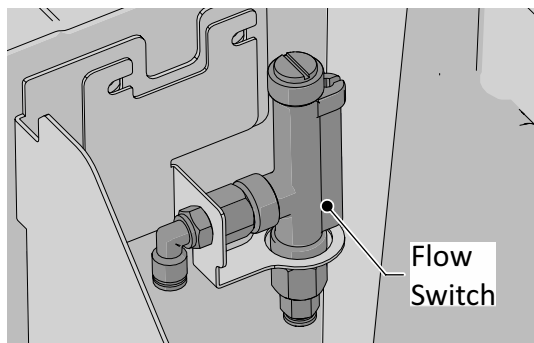
The below are the functions of the water monitoring system:

- Spray nozzles blocked completely
- Water pump failure
- Water pump fuse blown
- Solenoid valve malfunction
- Solenoid valve fuse blown

If any one of the above faults occur, the system alerts with an LED and audible warning.

LED Indicator:

| | | |
|-------|---|--|
| RED | - | Fault in water system |
| GREEN | - | Function normal |
| BLUE | - | Fresh water tank empty or dirty water tank full. |



End of Scrubbing

Shutting down the machine

- Set the rotary switch to Off position on the control panel.
- Switch Off the main switch on the control panel.
- Release the parking brake.
- Pull the machine backwards from its operating position onto the landing platform or on to a flat ground.
- Switch Off the mains on the wall outlet.

WARNING

Disconnect power cord after scrubbing operation is complete.





MAINTENANCE

This section describes on maintenance of the machine under the following sections:

- Draining of dirty water tank
- Cleaning of the fresh and dirty water tanks
- Cleaning the brush, nozzles, in-feed filter
- Cleaning the machine
- Electrical maintenance
- Post-scrubbing checkpoints
- Storing the machine

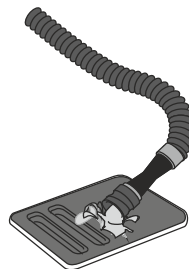
Draining of Dirty Water Tank

- Move the machine to the designated waste disposal area.
- Lower the dirty water tank drain hose to the floor.
- Open the cap of the drain hose.
- Upon end of draining close the cap and secure the hose in its storage position.

WARNING



DO NOT DRAIN THE DIRTY WATER INTO THE ENVIRONMENT. RISK OF CONTAMINATING THE ENVIRONMENT.



Cleaning of Fresh and Dirty Water Tanks

- Move the machine to the designated cleaning area.
- Lower the dirty water tank drain hose to the floor.
- Lower the fresh water tank drain hose to the floor.
- Open the cap of the drain hoses.
- **Fresh Water Tank** - Open the lid of the filter assembly and remove the filter to gain access to the tank. Hose down the inside of the tank with clean water at normal pressure.
- **Dirty Water Tank** - Open the top lid of the dirty water tank and check for any solid debris around the walls and the float, if found remove them. Hose down the inside of the tank with clean water at normal pressure. If necessary use a mild detergent.

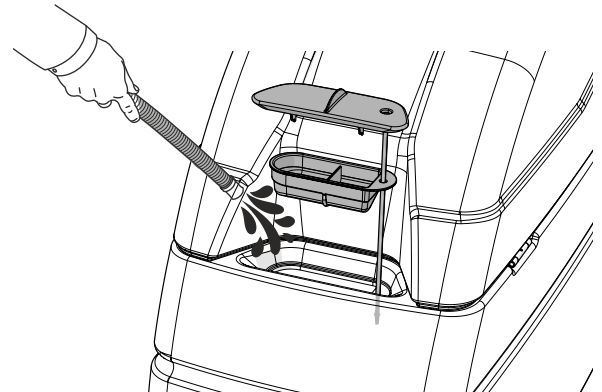
WARNING



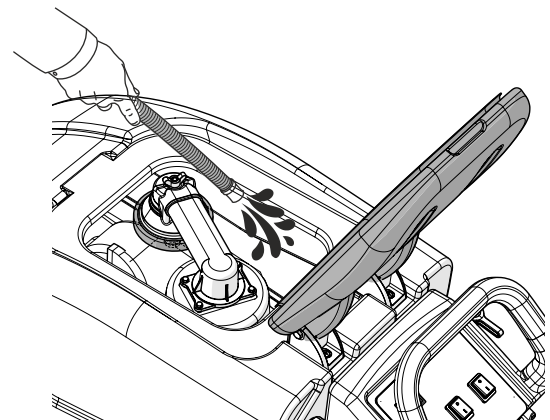
DO NOT DRAIN THE DIRTY WATER INTO THE ENVIRONMENT. RISK OF CONTAMINATING THE ENVIRONMENT.

CAUTION

*Ensure that the tanks are completely cleaned and no residual waste is accumulated.
Also ensure that the lids of the filter and tank are closed after cleaning is complete.*



Fresh water tank cleaning



Dirty water tank cleaning

WARNING

**DO NOT USE A HIGH PRESSURE JET CLEANER.
DO NOT USE A STEAM CLEANER.
DO NOT DIRECT WATER INTO THE ELECTRICAL PARTS.**

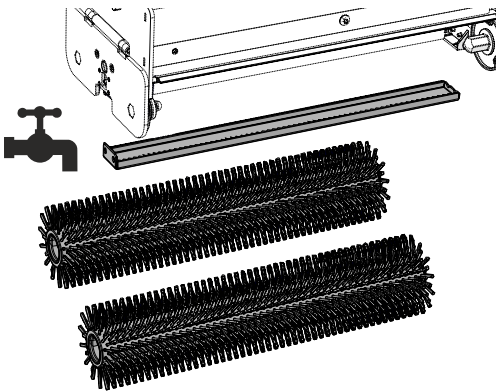
MAINTENANCE



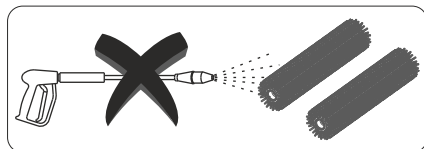
Cleaning the Brushes



- Move the machine to the designated maintenance area.
- Remove the debris tray from the brush head.
- Open the idler side cover to gain access to the brushes.
- Pull out the brushes from the brush head.
- Clean the brushes and the debris tray under running water and with detergent.

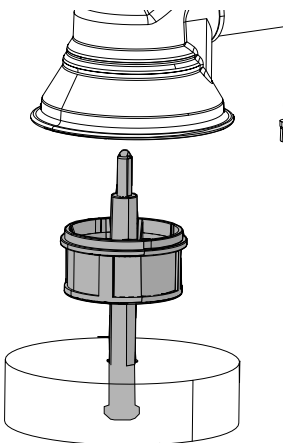


CAUTION



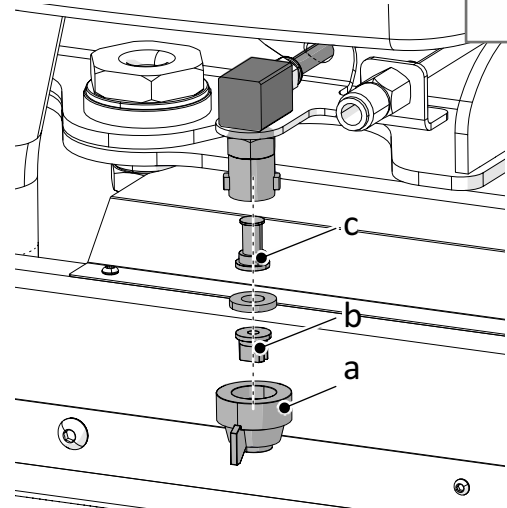
DO NOT clean the brushes with a high pressure washer.
DO NOT clean the brushes into the environment.

Cleaning the Float Filter



Remove the float filter by unscrewing the wing nut, and clean it under running water using a brush. Use mild detergent if required.

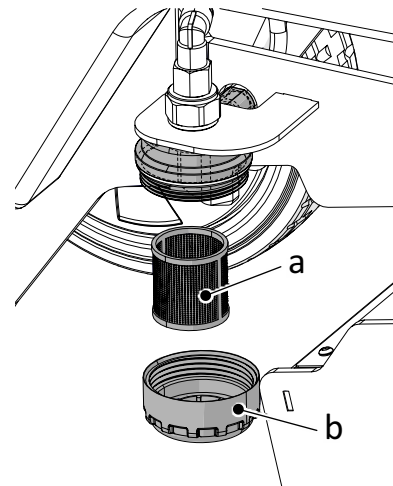
Cleaning the Nozzles



- Remove the nozzle adapter (a) by twisting it once anti-clockwise by hand.
- Remove the nozzle (b) and filter (c) from the union.
- Clean the nozzle and filter under fresh running water to remove any dirt or debris.
- Place the nozzle and filter back and secure it by placing the adapter back.

Note: Do not use harsh acidic solutions to clean the nozzle and filter.

Cleaning the Pump In-feed Filter



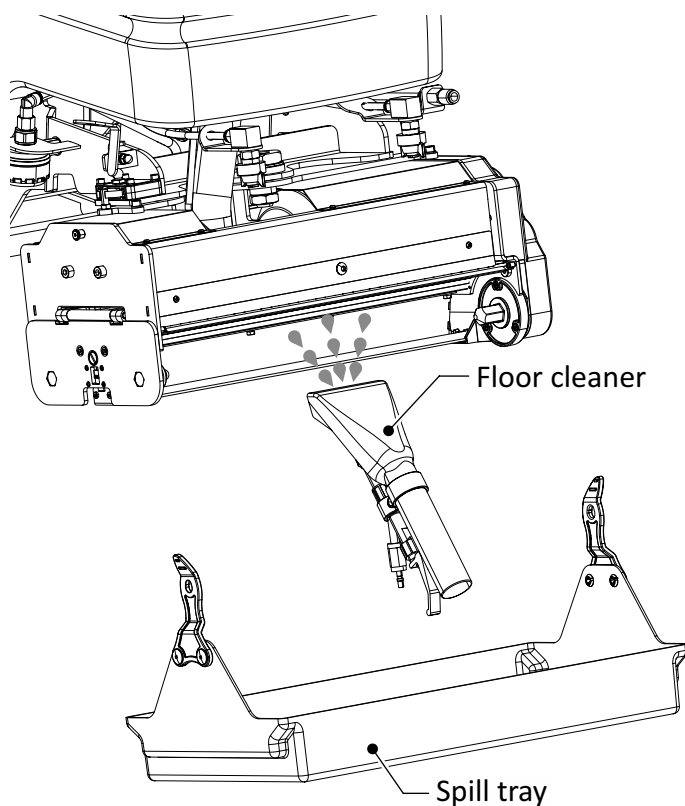
- Remove the mesh filter (a) by unscrewing the bottom cover (b).
- Clean the mesh filter under fresh running water to remove any dirt or debris.
- Place the cleaned mesh filter back and secure it with the bottom cover.

Note: Do not use harsh acidic solutions to clean the nozzle and filter.

MAINTENANCE



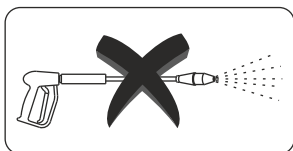
Cleaning the Brush Head



- Move the machine away from the escalator.
- Remove the brushes.
- Place the spill tray under the brush head.
- Attach the floor cleaner accessory to the machine.
- Switch On the machine.
- Direct water spray under the brush shield area to thoroughly clean away the dirt.
- Empty the spill tray into the drain and clean.



CAUTION



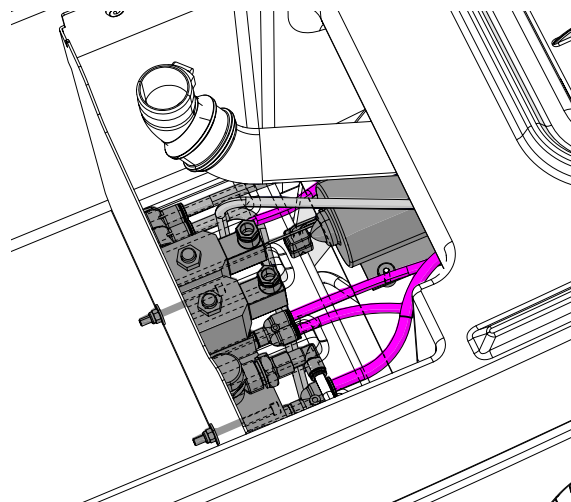
DO NOT clean the brush head with a high pressure washer.
DO NOT empty the spill tray into the environment.

Water Manifold

 **WARNING**



- Visually check the water manifold and hoses for any leak.



WARNING: DO NOT TAMPER WITH THE SOLENOIDS OR THE PUMP.

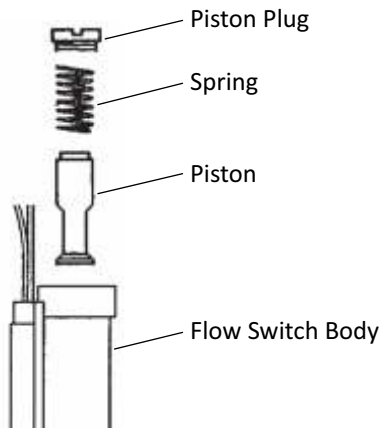


Cleaning the Flow Switch

 **WARNING**



The only maintenance normally required is occasional cleaning when excessive contamination is present in the liquid.



 **CAUTION**

Switch off key and unplug mains before accessing the flow switch.

Drain water from the water system before removing the plug for maintenance.

Do not remove the flow switch unit from the machine.

1. Remove piston plug.
2. Remove spring.
3. Remove the piston.
4. Clean the piston with water till contamination is cleared.
5. Assemble the components in reverse order.

 **NOTE**

Use care when handling spring to prevent distortion.

Do not overtighten the plastic components. Risk of breakage!

Cleaning the Machine

  **WARNING**



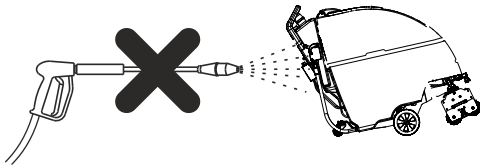
- Move the machine to its designated cleaning area.
- Ensure that the machine is parked on a flat level surface.
- Take a damp cloth and wipe the machine's exteriors to remove any dust or dirt.
- Drain all the tanks.
- Rinse the dirty water tank with fresh water to remove all contamination.
- Clean the brushes.

MAINTENANCE



WARNING:

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



NOTE:

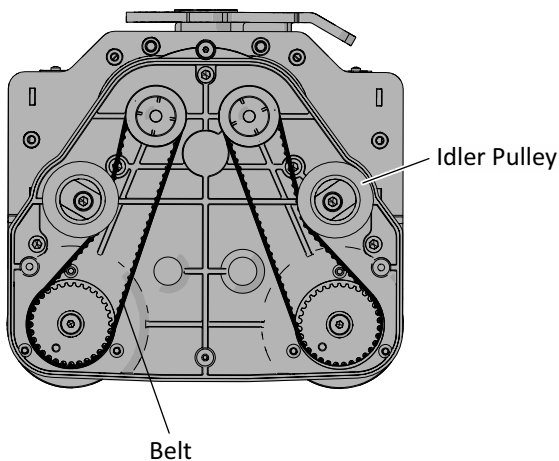
Use only a soft cloth or a sponge.
Use only mild detergent.



WARNING:

Disconnect power cord.

Belt Tension Adjustment:



Set belt tension to 80 ± 20 N

Set the tension using Gates Meter. Turn the Idler pulley to set belt tension.

Electrical Maintenance



DANGER

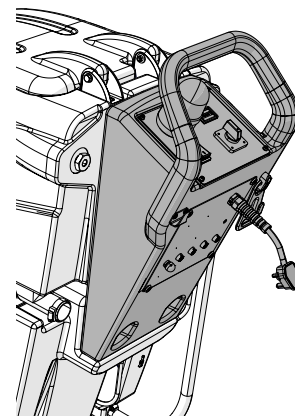


! DANGER

Electrical Shock or Burn Hazard.

Turn off power supplying this equipment before working on it.

The electrical equipment is located at the control unit assembly of the machine.

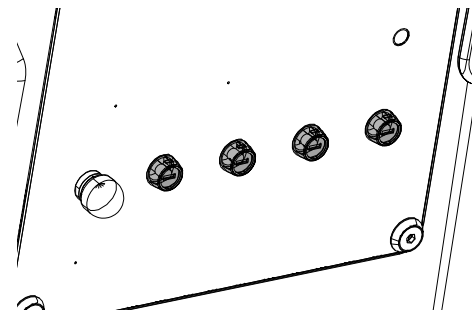


The electrical safety system consists of Fuse and a Circuit Breaker which are located on the rear panel assembly of the control unit.

Fuse:

A variety of fuses are used to protect the electrical systems in case of a failure.

To change the fuse: Remove the cap of the fuse holder by unscrewing it with a screwdriver. Remove the blown fuse and replace with a new one with the specified rating. Put the cap back in its place.





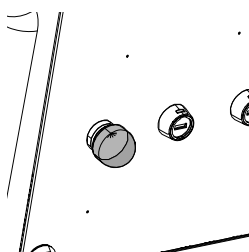
NOTE

If there should be repeated cases of failure, look for reason.

| FUSE DETAILS | | |
|--------------|--------|--------------------|
| FUSE | RATING | USED FOR |
| F1 | 4.0A | For Brush motor |
| F2 | 6.3A | For Vacuum motor |
| F3 | 1.0A | For Pump |
| F4 | 0.5A | For Solenoid valve |
| F5 | 0.5A | For Beacon lamp |

Circuit breaker:

The circuit breaker is used to protect the brush motor in case of an overload. To reset the circuit breaker, press the red button at the rear panel of the machine. Wait 30 seconds before a reset.



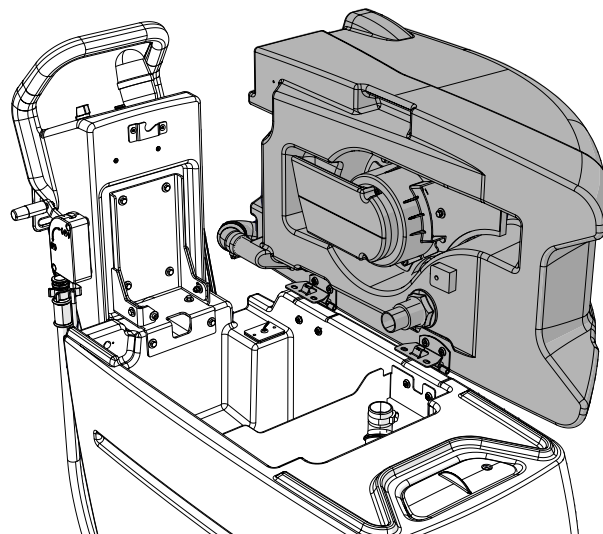
NOTE

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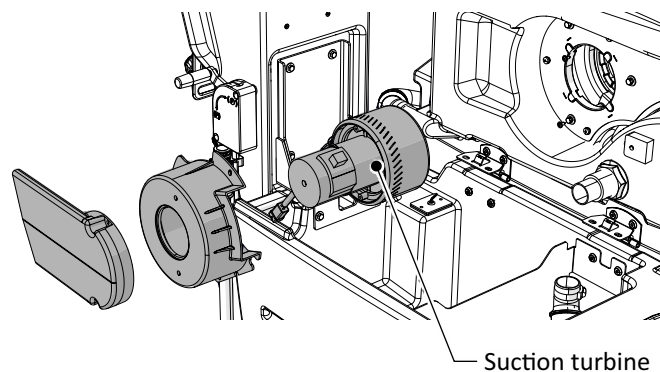
Suction turbine:

To access the suction turbine, follow the below procedure.

Step 1:



Step 2:



- Tilt the dirty water tank and secure it (Step 1).
- Remove the suction turbine assembly to perform electrical maintenance or to replace it (Step 2).

WARNING

Only RMCL authorized and RMCL skilled technicians are allowed to perform electrical maintenance tasks on the suction turbine.



Post-scrubbing Checkpoints

- *Check the tank lid seals for damage and wear.*
 - *Clean the float.*
 - *Check the condition of the brushes. Remove any string, rope or other debris wrapped around them.*
 - *Check the vacuum hose for block/damage.*
 - *Check if both the tanks are completely clean.*
 - *Check the machine exteriors for any damages or dirt.*
-

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 Multiclean Ltd. 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 in the rear side 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.
- For reasons of safety during cleaning and/or maintenance work in or on the tank, the tank lid - when lifted - must be secured so as to prevent accidental closing or tilting down.
- 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 by 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.

MAINTENANCE



Maintenance Schedule

| Maintenance Work | Service Every (Hours) | | | |
|---|-----------------------|----|-----|-----|
| | Daily | 50 | 100 | 200 |
| Check connection - extension cables and plugs for good condition; discard defective cables immediately | | | | |
| Drain and clean both fresh water tank and dirty water tank | | | | |
| Check the suction hose for possible debris or blocks, clean if required | | | | |
| Check the nozzles, filters and hoses for possible debris or blocks, clean if required | | | | |
| Check the mechanical & electrical float for proper function | | | | |
| Check the brush for tight fit and wear; replace if required | | | | |
| Check the dirty water tank lid gasket for wear/damage; replace if required | | | | |
| Check the fresh water infeed to the brush for any possible blocks; clean them if required | | | | |
| Remove carbon dust from the suction turbine, check the carbon brush for any signs of wear/damage; replace if required | | | | |

 **To be carried out by RMCL Service Personnel ONLY.**



Storing the Machine

The below procedure explains the proper method to store the machine:







- Ensure that the fresh and dirty water tanks are drained and dry.
- Ensure that the brush head is lifted up and secured.
- Ensure that the brushes are clean and free from any debris.
- Ensure that the machine is always stored indoors only and not exposed to the environmental elements.
- Ensure that the machine is parked on a flat level surface and secured.



WARNING:
Disconnect power cord.



WARNING: PROTECT FROM

| | |
|---|--|
|  <p>LIQUIDS</p> |  <p>COLD</p> |
|  <p>FIRE</p> |  <p>WIND</p> |
|  <p>HEAT</p> |  <p>CHILDREN</p> |



Troubleshooting Table

| Fault | Cause | Remedy |
|--|-------------------------------|---|
| Machine does not start | Mains plug not connected | Check if the mains plug is connected. |
| | Power supply | Check if the power supply in the area matches that to the nameplate of the machine. |
| | Fuse | Check for any blown fuses. |
| | Circuit breaker | Check if the circuit breaker is tripped. |
| Insufficient water feed | Water level | Check fresh water level, refill if required. |
| | Block in hose | Check hose for blockages; clean them if required. |
| | Block in nozzle & filter | Check nozzle & filter for blockages; clean them if required. |
| | Block in water manifold | Check for blockages; clean them if required. |
| | Leak in water line | Check connector fittings and hoses for cracks, wear. |
| | Flow switch error | Check flow switch for blockage. |
| Insufficient vacuum performance | Sealing of tank lid gasket | Clean the seals between dirty water reservoir and cover and check for tightness, replace if required. |
| | Block in hose | Check hose for blockages; clean them if required. |
| | | Check hose for tightness; replace if required. |
| | Mechanical & Electrical float | Check float for function, check and replace if required. |
| | Dirty water drain hose | Check if the cover of the dirty water drain hose is closed. |
| Poor cleaning performance | Damaged/Worn brushes | Check the brushes for any foreign object damage or wear; replace if required. |
| Brushes do not turn | Brush drive mechanism | Check for foreign object obstructing the mechanism. |
| Machine moves when cleaning the escalator | Parking brake weak | Check parking brake, adjust/replace if required. |
| Machine wobbles while moving | Worn tires | Check the tires and castors for damage; replace if required. |

DO'S & DON'TS

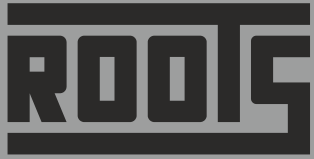


DO'S

- ✓ Prior to wet mode cleaning, the escalator step has to be cleaned in dry mode first to remove loose debris.
- ✓ Use only Non foaming chemical for cleaning.
- ✓ Always check the condition of mains cable.
- ✓ Inspect the condition of float filter for any deposit of dirt.
- ✓ Dirty water to be drained if it reaches the cut-off stage.
- ✓ After cleaning, fresh & dirty waters have to be drained and cleaned.
- ✓ After usage of machine, float assembly and dirty water tank to be cleaned with fresh water.
- ✓ During transport brush head assembly should be in lifted position.
- ✓ Engage the parking brake of the machine while cleaning the escalator.
- ✓ Use extreme caution while operating the machine.

DON'TS

- ✗ Do not use inflammable liquids (thinner / kerosene) in fresh water tank for cleaning operation.
- ✗ During cleaning don't run the machine over the mains cable.
- ✗ After usage during cleaning the machine don't allow water to get into the panel board.
- ✗ Do not clean the machine with high water pressure jet equipments.
- ✗ Do not use the machine unless the main cable is in proper condition.
- ✗ Do not clean the escalator without the parking brake engaged.
- ✗ Do not pour water or solution directly on to the escalator.
- ✗ Do not use acids mixed with water, might damage the water hoses, nozzles or the manifold.
- ✗ Do not tamper with the water manifold settings.
- ✗ Do not keep the external accessory connected to the machine when not in use.
- ✗ Do not transport the machine over the escalator.
- ✗ Do not clean the escalator by keeping the machine at the upper level.
- ✗ Do not let children operate the machine as a toy.
- ✗ Do not mix different types of brushes to clean the escalator at once.
- ✗ Do not allow anybody to travel on the escalator when cleaning is under progress.



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