

GS-Ecobot Scrubber

50

MAINTENANCE

GUIDE



Date of Issue: [13] [04], 2023

TABLE OF CONTENTS

TABLE OF CONTENTS	2
INTRODUCTION	4
DISCLAIMER & RESPONSIBILITY	4
1. MAINTENANCE INSTRUCTIONS	5
1.1. Daily Maintenance Process	5
1.1.1. Everyday Maintenance	7
1.1.2. Weekly Maintenance	8
1.1.3. Long-term maintenance	8
1.2. Description of Consumables	9
1.3. Battery Maintenance	9
1.4. Procedure for Manual Charging	10
1.4.1. Battery	10
1.4.2. Charging Socket	10
1.4.3. Charging the Battery	10
1.5. Procedure for Manual Water-Fill & Drain	12
1.6. Facade Cleaning	13
1.7. Water Tank Maintenance	15
1.8. Water Tank Cleaning	15
1.9. Rolling Dust Push Maintenance Operation Process	23
1.10. Rolling Cloth Dust Pushing Maintenance Operation Process	24
1.11. Squeegee Blade Maintenance	26
1.12. Squeegee Cleaning	27
1.13. Workstation Cleaning	28
1.14. Filter Bag Replacement	29
1.15. Filter Maintenance	31
1.16. Steel Wire Filter Replacement	32
1.17. Filter Cartridge Replacement	36
1.18. Roller Brush Maintenance	39
1.19. Roller Brush Replacement	40
1.20. Rubber Strip Replacement	41

1.21.	Procedure for Disinfection Package Deployment	43
2.	APPENDIX A. SOLUTIONS FOR COMMON PROBLEMS	49
3.	APPENDIX B: CONSUMABLE REPLACEMENT SUGGESTION	59
4.	APPENDIX C: TECHNICAL SPECIFICATION	61
5.	APPENDIX D: SCRUBBER 50 Consumables	63

INTRODUCTION

The Cleaning Robot Scrubber 50 by Gausium (alias "Gaussian Robotics"), Singapore, is a fully autonomous cleaning robot that can automatically charge, dispense, and refill all by itself.

DISCLAIMER & RESPONSIBILITY

Any reproduction, copying, publication, as well as further distribution, or public display of materials contained in the present document (whether in full or in part), shall not be allowed until appropriate permission of the Copyright owner is obtained. Any unauthorized usage of materials contained herein may lead to civil liability and criminal prosecution under applicable laws.

The product specifications and information mentioned herein are for reference only and are subject to changes without prior notice. Unless otherwise specified, this document is only employed as guidance for operation.

To the maximum extent permitted by applicable law, the product described (including its hardware, software, firmware, etc.) in this document is provided **AS IS**, which may have flaws, errors, or faults.

AROS makes no warranties of any kind, express or implied, including but not limited to, merchantability, the satisfaction of quality, fitness for a particular purpose, and non-infringement of third-party rights. In no event will AROS be liable for any special, incidental, consequential, or indirect damages resulting from the use of our products and documents.

Before using this product, please thoroughly read and understand the contents of this document and related technical documents that are published online, to ensure that the robot is used on the premise of fully understanding the robot and related knowledge. Please use this document with technical guidance from professionals. Even if following this document or any other related instructions, damages or losses will happen in the use process, AROS shall not be considered as a guarantee regarding all security information contained in this document. The user has the responsibility to make sure to follow the relevant practical laws and regulations of the country so that there is no significant danger in the use of the robot. In the event of any questions, please refer to ASBIS Robotic Solutions' Tech Support Department.

Copyright © 2023 ASBIS Robotic Solutions (AROS). All rights reserved.

1. MAINTENANCE INSTRUCTIONS

In the operating process of the Vacuum 50 cleaning robot, operators need to perform maintenance to the robot before and after each operation, periodically inspect and maintain the equipment, and periodically replace consumables, to ensure the best performance of the robot and maximize its service life.

1.1. Daily Maintenance Process

During daily use, you should maintain the automatic scrubber to minimize the consumption of parts, give full play to the advantages of the scrubber, and prolong its life.

- ❖ Before maintenance, be sure to turn off the key switch and unplug the power plug, to prevent accidental electric shock or parts damage.
- ❖ The machine should be placed in a dry and ventilated place to prevent the humid environment from affecting electronic and electrical components and shortening its service life.
- ❖ If the storage environment temperature is lower than 5°C, please ensure that there is no water in the entire waterway.
- ❖ If detergent is added to the clean water tank to prevent the accumulation of foam inside the water tank, be sure to add a defoamer to the recovery tank (the amount of defoamer should be matched according to the proportion of detergent used).

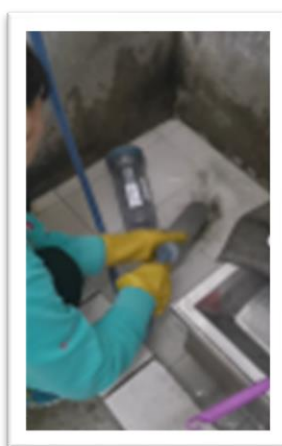
1. Push the machine to the maintenance point for daily maintenance operations.



2. Open the drain cover and take out the drain/wastewater tank pipe for drainage.



3. Remove the filter bag, remove the filter bottle with the tool, remove the filter element, and rinse. Filter element specifications are different, do not install reverse.



4. Use clean water for internal cleaning, repeat several times to make sure the inside of the tank is clean.



5. Open the soft rubber plug of the charging port and plug in the charger to charge. When charging, make sure the plug is properly connected.



6. Open the anti-collision front cover.



7. Remove dust boxes on both sides and clean them.



8. Open both end-covers of the roller brush.



9. Remove the roller brush and clean.



10. Install the parts back after cleaning.



1.1.1. Everyday Maintenance

1. Drain the water from the recovery tank and clean the tank with a water hose or a spray gun. Ensure that the inner surface of the recovery tank is clean, prevent the accumulated dirt from blocking the recovery tank, and avoid water spilling to other places in the process. Please off the recovery tank valve in time after draining the sewage.
2. **Filter element cleaning:** tiny solid particles will adhere to the filter element. Please use flowing water to rinse the filter element.

3. **Filter bag cleaning:** Because some sediment will sometimes weaken the filtering effect, please use a brush, running water, or pressurized water gun to clean the filter bag, and need a periodic inspection.
4. Check whether there is any silt/debris in the recovery tank, if any, remove it immediately.
5. Clean the inside of the squeegee mount to prevent the accumulation of hair and other dirt, which will affect the wiping effect. And keep the surface clean, to reduce wear and tear, and prolong its service life. At the same time, the whole squeegee mount stand needs to be cleaned.
6. After the scrubber has completed the task, please check the power supply and charge it in time if necessary.
7. The water tank of the disinfection atomizer needs to be maintained and cleaned regularly and the recommended cleaning frequency is one (1) time per month.

1.1.2. Weekly Maintenance

1. Check whether there is dirt on the sensor. Please use a soft cloth or paper to wipe it gently to avoid scratches and other damage.
2. Check if the squeegee blade is worn out and replace it in time if necessary.
3. Check the steel filter of the recovery tank and freshwater tank, and clean or replace it in time if necessary.
4. Check whether the spring, screw, and sheet metal assembly are loose, deformed, and rusted everywhere.
5. Clean the skirt to avoid more dirt.
6. Remove the brush plate every week and clean the brush plate. There will be hair or other dirt entangled on the brush plate.
7. Check whether the suction pipe is damaged and remove the inner surface of the flushing pipe to prevent the accumulation of lint and debris and affect the water absorption effect.
8. Check the wear of the cleaning pad. If it is damaged or seriously worn, please replace it.
9. If the water tank has a peculiar smell, you can use self-purchased deodorant to deodorize the water tank according to the product instructions.
10. It is recommended that the water tank be treated with disinfectant twice a week, and the proportion of disinfectant should be used according to the product instructions.
11. **Flushing pipeline:** after cleaning the water tank, add clean water, and clean the ground with a large amount of water for 3-5 minutes, so that the large flow of clean water can fully flow through the pipeline, to clean the pipeline.

1.1.3. Long-term maintenance

1. Check whether the spring, screw, and sheet metal parts of the water suction structure are loose, deformed, or damaged.

2. Check whether the sealing ring of the water tank cover is damaged and whether there is leakage in the drainpipe.
3. Check whether there is abnormal noise in the structure of the whole machine, which affects normal use.
4. Apply grease on the water suction pulley and other frequently rotating or rubbing parts.
5. If the brush disc is worn to the Yellow bristles, please replace it.
6. The filter on the water intake shall be replaced regularly.

1.2. Description of Consumables

The main consumables of Scrubber 50 (Sprayer) include a squeegee blade, brush, cleaning pad, filter cartridge, filter, filter bag, etc. Replacement cycles of these consumables depend on floor materials in usage scenarios. For details, [see the table below](#).

If the operating frequency of the scrubber is too high or too low in the actual application scenarios, the user can appropriately shorten or extend the replacement cycle of the Scrubber 50 (Sprayer) consumables. Timely adjustments shall be made according to the observed cleaning effect of the scrubber.

1.3. Battery Maintenance

Batteries are not allowed to be disassembled and replaced privately to avoid unnecessary losses.

1. Batteries should be kept away from heat sources and high-pressure places and avoid long-time exposure to sunlight.
2. Batteries should not be put into water or fire.
3. Do not conduct short circuits of the positive and negative terminals of the battery with metal.
4. Avoid excessive physical shock and impact on the battery. Do not hit, drop, or step on the battery.
5. It is prohibited to disassemble or assemble the battery without the permission and guidance of the manufacturer. This appliance contains batteries that are only replaceable by skilled people.
6. Do not mix batteries of different manufacturers, types, and models for use.
7. It is prohibited to use or store the battery in a high-temperature environment (>45 degrees), to avoid battery heating, fire, or reduction of service life.
8. If the battery has run out, please charge it in time (within 2 hours).
9. In case of long-term storage (more than one week), be sure to turn off the circuit breaker switch after full charge, otherwise, the battery may be damaged, and the battery should be flushed once a month.
10. **WARNING:** To recharge the battery, only use the **CD-01** or **IC0650-024** provided with this appliance.

- 11.If the battery has a peculiar smell, discoloration, noise, leakage, serious deformation, and other abnormal conditions, please stop using it. The battery must be removed from the appliance before it is scrapped.
- 12.The appliance must be disconnected from the supply mains when removing the battery.
- 13.The battery is to be disposed of safely.
- 14.Battery safety treatment process: recovery and follow-up treatment by AROS or the third-party recycling organization established by AROS.
- 15.When electrolyte leakage splashes into the skin and eyes, please rinse with water and see a doctor immediately.
- 16.Please keep the battery out of the reach of pets and children. Children are not allowed to touch the battery.
- 17.When loading and unloading the battery during transportation, please pay attention not to fall, do not stack and turn over more than 3 layers, and ensure that the front is facing up.

1.4. Procedure for Manual Charging

1.4.1. Battery

The Battery (24VDC) is the main power supply for the machine. It is placed in the battery cabinet at the lower part of the robot's body.

1.4.2. Charging Socket

The socket can be used for manual charging. The charging plug is located on the left of the battery cabinet.

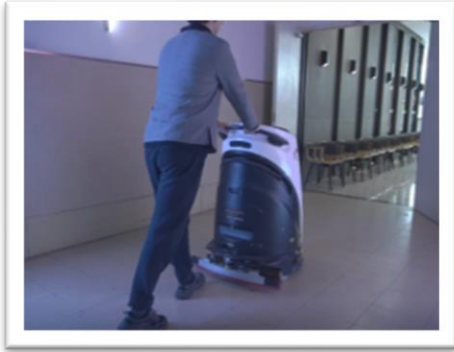
1. Remove the dust cover of the charging port and charge the robot.



2. When the plug is inserted into the socket, the machine gets a power supply.

1.4.3. Charging the Battery

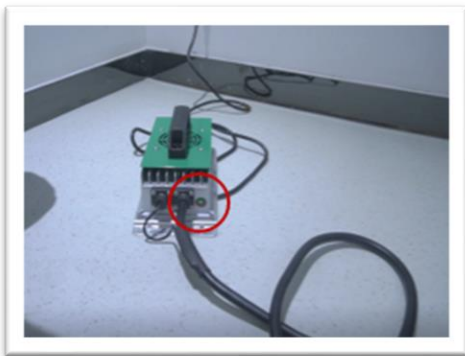
1. Long press the auto/manual switch for 3 seconds, and ensure the light indicator is OFF.



2. Then push the robot to the maintenance point.
3. Start charging.



4. Insert the red plug of the power adapter into the red charging port of the robot, then connect the power adapter to the 220V power socket.
5. The **flashing red** indicator light means charging is ongoing.
6. When the battery is full, the indicator turns **green**.



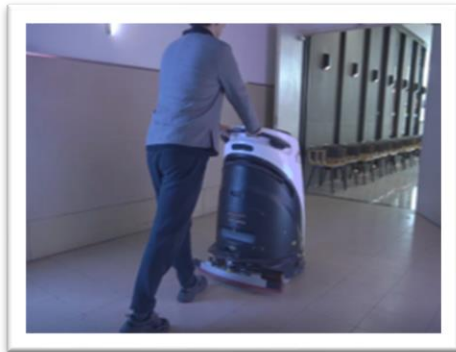
7. Disconnect the power adapter with the 220V power socket first, then disconnect the plug of the power adapter with the robot. Manual charging is completed.

1.5. Procedure for Manual Water-Fill & Drain

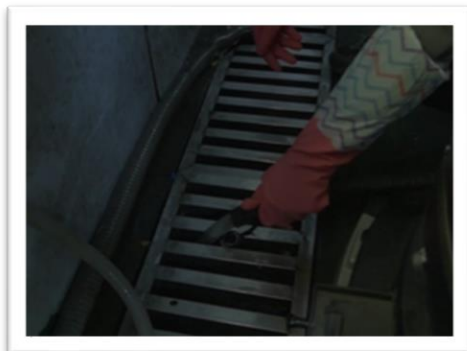
1. Switch the robot to manual mode.



2. Press the auto/manual mode switch button for 3 seconds and confirm that the button indicator light is turned off.
3. Push the robot to the maintenance point.



4. Take the wastewater pipe out and drain.



5. Open the cap of the wastewater pipe and quickly put it down to the drain.
6. **Kind reminder:** hold the pipe upward when opening the cap.
7. Close the cap tightly after the drain is completed.



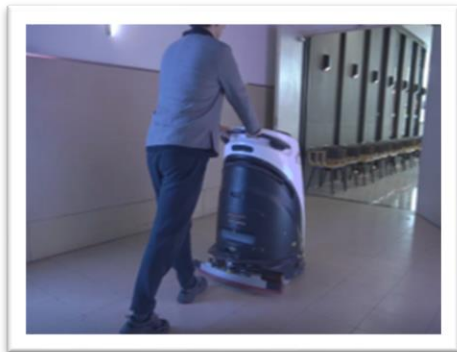
8. Withdraw the wastewater pipe.

1.6. Facade Cleaning

1. Switch the machine to manual mode. Press the auto/manual mode switch button for 3 seconds and confirm that the button indicator light is turned off.



2. Push the robot to the maintenance point.



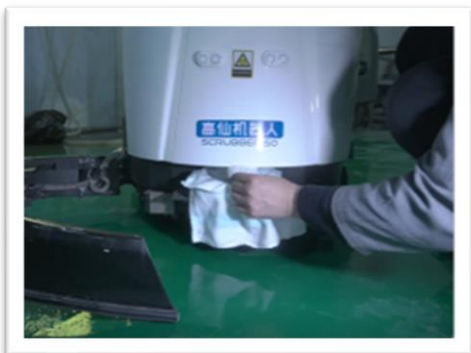
3. Using a damp, lint-free cloth, wipe the facade of the machine (be careful not to rub the camera and sensor).



4. Using a clean, soft, lint-free cloth, gently wipe the laser, camera, and sensor.



5. Pull up the front bumper shell buckle, open the front bumper shell, and wipe the front horizontal laser inside.



6. Using a clean, soft, lint-free cloth, gently wipe the top-view camera. Finally, press the screen-off button and wipe the touch screen.



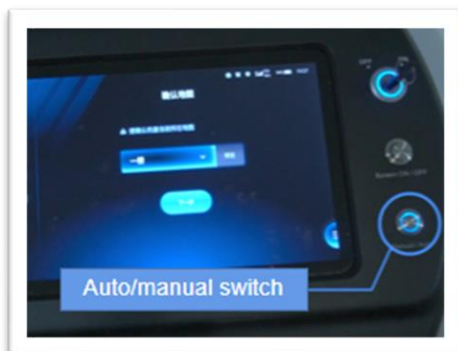
1.7. Water Tank Maintenance

After a cleaning task is completed, necessary maintenance is required for the water tank. Empty the freshwater tank and recovery tank and clean the tanks with clean water. Take down the filter of the recovery tank and the 2-stage filter of the freshwater tank and clean them with clean water. Note that the 2-stage filters cannot be mixed. Make sure the black seal ring of the filter is correctly installed back. Take down the dirt sieve of the recovery tank and clean it.

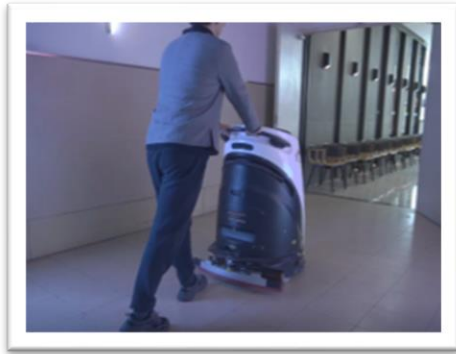
1.8. Water Tank Cleaning

Switch the machine to manual mode.

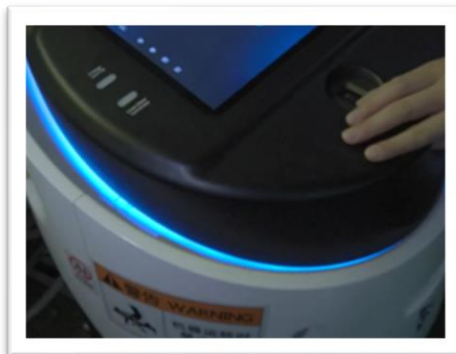
1. Press the auto/manual mode switch button for 3 seconds and confirm that the button indicator light is turned off.



2. Push the robot to the maintenance point.



3. Open the top lid.



Open the tank cover.

1. Remove the entire tank cover.



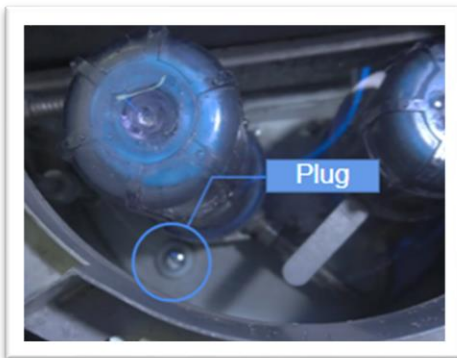
Take the wastewater pipe out and drain.

1. Open the cap of the wastewater pipe and quickly put it down to the drainage (*Kind reminder: hold the pipe upward when opening the cap*).



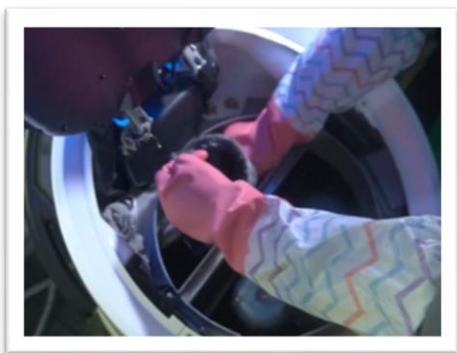
Empty the clean water tank.

1. Unplug the plug in the clean water tank after the wastewater tank has been emptied.
2. The water in the clean water tank will flow into the wastewater tank.
3. Then, continue to empty the wastewater tank using a wastewater pipe.



Remove and clean the filter bag.

1. Remove the rope from the hook and lift the filter bag.
2. Squeeze water out from the filter bag.
3. Hold the filter bag in one hand and take it out with the other hand.
4. Then, put it on the ground and clean it.



Remove and clean the steel wire filter in the wastewater tank.

1. Rotate and lose the steel wire filter anti-clockwise.
2. Take it out with two hands and put it on the ground.
3. Clean it with clean water.



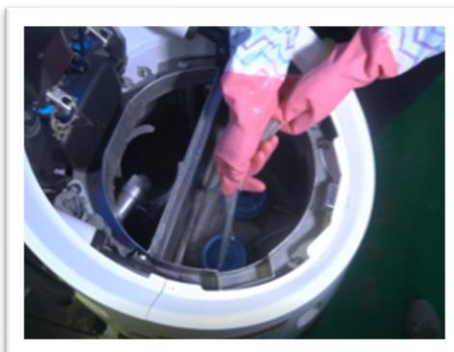
Remove and clean the filter bottle and cartridge.

1. Use the wrench to loosen the filter bottle anti-clockwise.
2. Take the filter bottle and cartridge out, put them on the ground, and clean them with clean water.
3. Remove and clean the other filter bottle and cartridge in the same way.



Flush the inner wall of the clean water tank.

1. Place the water pipe into a clean water tank before flushing.
2. Then open the water valve to flush it. This helps to avoid water splashing to damage other components.



Clean the float switch sensor in the clean water tank.

1. Move the float sensor up and down when flushing it.



Flush the inner wall of the wastewater tank.

1. Place the water pipe into the wastewater tank before flushing.
2. Then open the water valve to flush it. This helps to avoid water splashing to damage other components.



Flush the float switch sensor in the wastewater tank.

1. Move the float sensor up and down when flushing it.



Take the pipe out.

1. Close the water valve, drain water from the pipe, and take the pipe out.



Plug in the plug to the clean water tank.



Clean the filter bag.

1. Trash the garbage in the filter bag and flush the inside and outside of it.



Clean steel wire filter.

1. Flush the two steel wire filters. The two steel wire filters are the same, no worry about mixing them up.



Flush filter bottle and cartridge.



Install the steel wire filter.

1. Align it to the hole and tighten it clockwise. One for the clean water tank, and one for the wastewater tank.



Install the filter bottle and cartridge.

1. Place the cartridge first, then install the filter bottle, and tighten it clockwise.
2. Install the other set of filter bottle and cartridge in the same way.



NOTE:

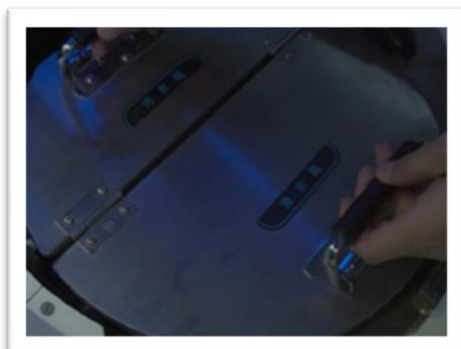
- The 50-micron filter should be installed on the left side of the machine and the 30-micron filter should be installed on the right side. Tighten the bottles with a wrench.

Install the filter bag

1. Hook the rope on the filter bag hook. The filter bag rope can be rotated and knotted and fixed on the filter bag hook.



Put the water tank cover back.



Close the top lid.



Withdraw drainpipe.

1. Ensure the cap of the pipe is tightly closed and withdrew the pipe.



1.9. Rolling Dust Push Maintenance Operation Process

1. Loosen the knob and remove the rolling dust push.



2. Remove the rolling dust cloth and clean or replace it.



3. Loosen the knob, remove, and clean the dust box.



4. Remove the cleaning roller and clean the roller with a sharp tool.



5. After cleaning, install it in reverse order.



1.10. Rolling Cloth Dust Pushing Maintenance Operation Process

1. Open the anti-collision front cover.
2. Remove the front bumper shell.



3. Pull up the buckle to remove the front bumper shell.
4. Remove dust boxes on both sides and clean them.



5. Open both end-covers of the roller brush.



6. Take the front roller brush out from the left side of the robot.
7. Long press the button on the latch and take the latch out.
8. Then remove the metal cover and take the roller brush out.
9. Take the rear roller brush out from the right side of the robot in the same way as the front roller brush.



10. Remove the roller brushes and clean them.



11. Take the front and rear roller brushes out, place and clean them on the ground.
12. Use a steel bristle brush shipped with the robot to clean roller brushes.
13. Clean cloth wiper with detergent.

14. Install after cleaning.



1.11. Squeegee Blade Maintenance

Material:

Natural rubber

Service life:

It depends on the actual service condition. Please check whether the squeegee blade is worn out and if the water absorption effect is affected thereby. If so, replace it.

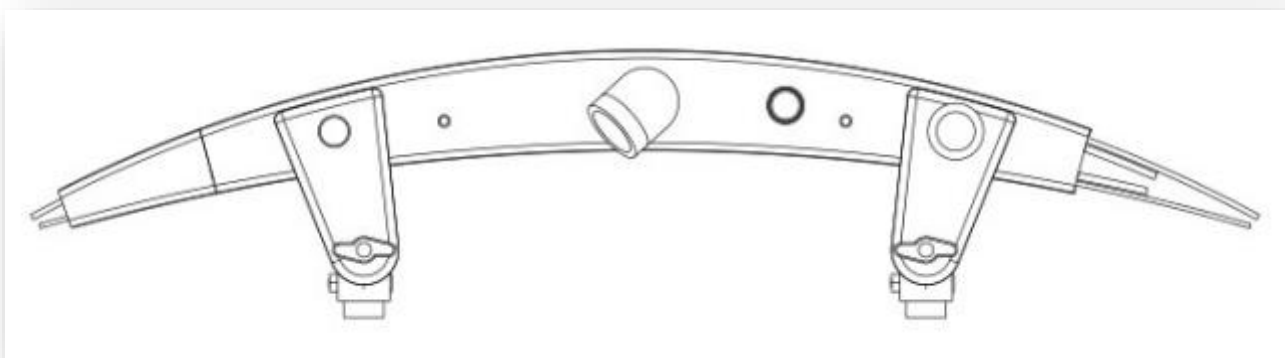


NOTE:

- If the water absorption effect gets worse, but the squeegee blade is not worn out, please check whether the tank cover is placed properly first. You can start the air suction function first separately, and then pull the pull ring on the water tank. If the tank cover is not opened by pulling, it means that the tank cover has been placed properly.

Replacement method:

The squeegee blade is fixed by latches shown in the following figure.



Gently release the latch to remove and replace the blade. If the squeegee mount has to be removed, use the lever to remove the screws on the platen, and then remove the squeegee blade.

1.12. Squeegee Cleaning

Wipe the surface of the inner and outer rubber strips.

1. Use a wet wipe to clean the surface of the inner and outer rubber strips.



Wipe the gap between the inner and outer strips.

1. Use a wet wipe to clean the gap between the inner and outer strips.



Clean the appearance of the squeegee.



1.13. Workstation Cleaning

1. Unplug the power cable.



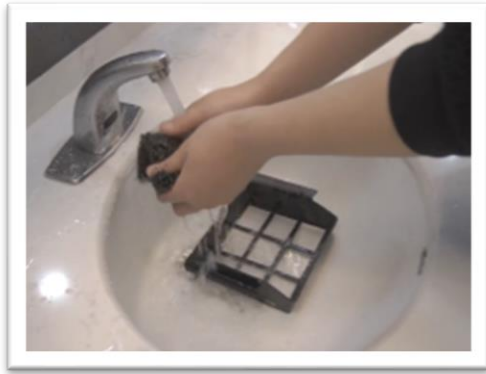
2. Use a wet wipe to clean the facade of the workstation. Do not touch the charging port.



3. Take the sink and filter foam off.



4. Flush the filter foam.



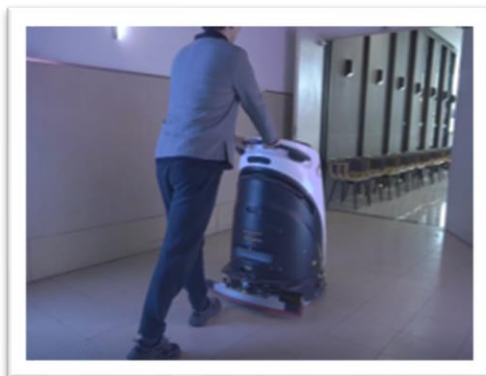
5. Install the sink and filter foam.



1.14. Filter Bag Replacement

Push the robot to the maintenance point in manual mode.

1. Press the auto/manual mode switch button for 3 seconds and confirm that the button indicator light is turned off.



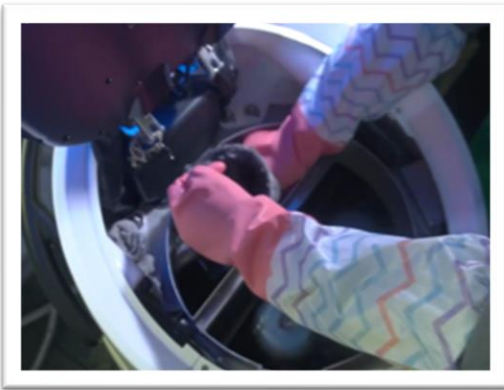
Take out the pipe and drain.

1. Open the cap of the wastewater pipe and quickly put it down to the drainage (**Kind reminder:** hold the pipe upward when opening the cap).
2. Close the cap tightly after the drain is completed.



Remove the filter bag.

1. Open the top lid and remove the water tank cover.
2. Remove the rope from the hook and lift the filter bag.
3. Squeeze water out from the filter bag.
4. Hold the filter bag in one hand and take it out with the other hand.
5. Then, put it on the ground and clean it.



Replace the filter bag.

1. Prepare a new filter bag and wrap the rope around the hook.
2. The filter bag rope can be rotated and knotted to fix it on the filter bag hook).
3. Then close the water tank cover.



Close the top lid.



Withdraw drainpipe.

1. Withdraw the drainpipe after ensuring the cap is tightly closed.



1.15. Filter Maintenance

Material:

Polypropylene pleated filter

Replacement criterion:

When the service time reaches the specified consumable replacement time or the effect of the cleaned floor is still not ideal, it can be considered that the filters need to be replaced or cleaned.

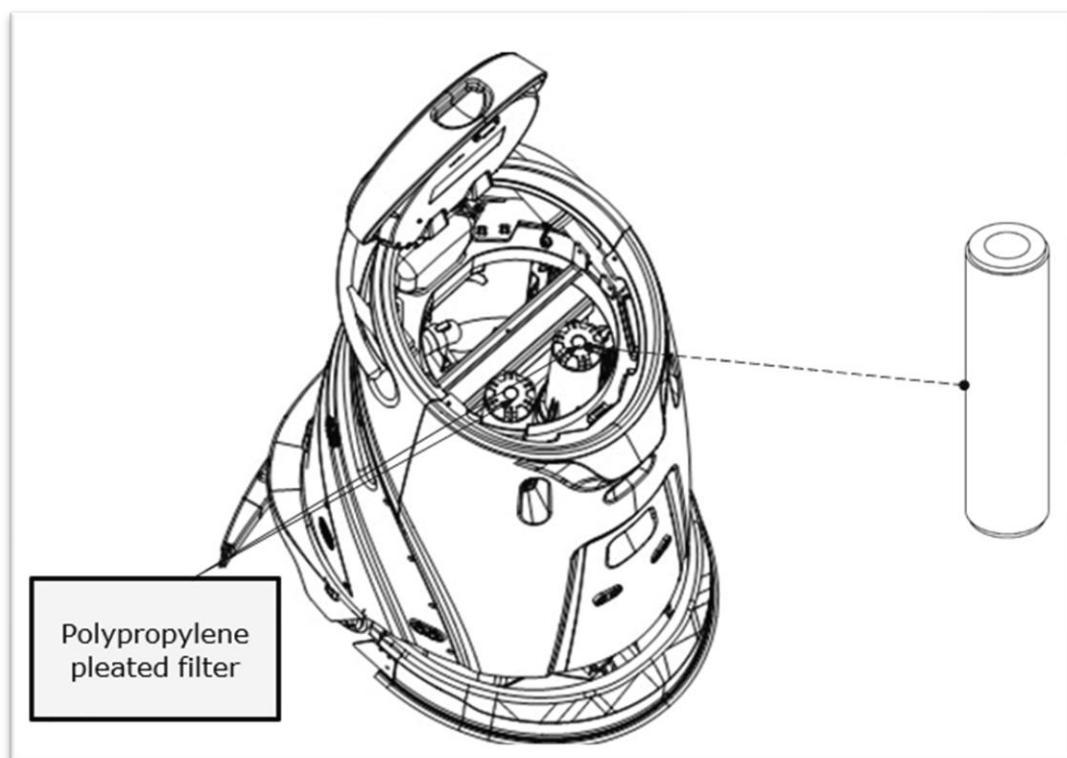
Replacement/cleaning method:

As shown in the figure below, open the tank cover. You shall see that there are two filters in the freshwater tank. To facilitate the removal and replacement of the filters, corresponding auxiliary tools have been designed. The operator only needs to turn the filters anticlockwise to remove them, and then replace or clean the filters.



NOTE:

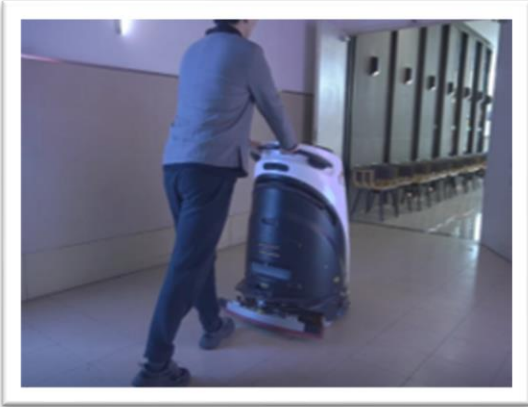
- Be careful when dismantling the filter, to prevent your hand, arm, or head from hitting the edge of the water tank or the tank cover due to excessive force.



1.16. Steel Wire Filter Replacement

Push the robot to the maintenance point in manual mode.

1. Press the auto/manual mode switch button for 3 seconds and confirm that the button indicator light is turned off.



Take out the pipe and drain.

1. Open the cap of the wastewater pipe and quickly put it down to the drainage (**Kind reminder:** *hold the pipe upward when opening the cap*).
2. Close the cap tightly after the drain is completed.



Empty the clean water tank.

1. Unplug the plug in the clean water tank after the wastewater tank has been emptied.
2. The water in the clean water tank will flow into the wastewater tank.
3. Then, continue to empty the wastewater tank using a wastewater pipe.



Remove the right filter bottle and cartridge.

1. Use a wrench to loosen the filter bottle, remove the bottle and cartridge and place them on the ground. (**Prompt:** no need to remove the left filter bottle and cartridge).



Remove the steel wire filter in the clean water tank.

1. Rotate the steel wire filter in the clean water tank anti-clockwise.
2. Hold and drain it with 2 hands and put it aside.



Install a new steel wire filter.

1. Prepare a new steel wire filter, align it to the hole, and tighten it clockwise.



Install the filter bottle and cartridge.

1. Place the cartridge first, then install the bottle and rotate it clockwise. Use the wrench to tighten it at last.
2. Put the wrench on the bottle and close the water tank cover.



Close the top lid.



Withdraw the drainpipe.

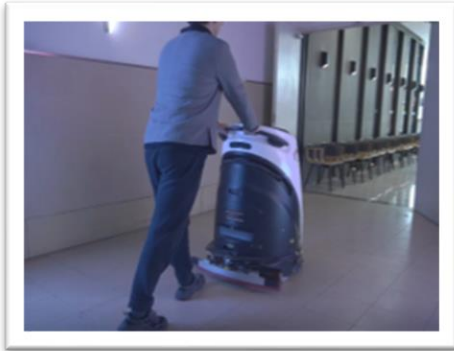
1. Withdraw the drainpipe after ensuring the cap is tightly closed.



1.17. Filter Cartridge Replacement

Push the robot to the maintenance point in manual mode.

1. Press the auto/manual mode switch button for 3 seconds and confirm that the button indicator light is turned off.



Take out the pipe and drain.

1. Open the cap of the wastewater pipe and quickly put it down to the drainage (***Kind reminder:*** hold the pipe upward when opening the cap).
2. Close the cap tightly after the drain is completed.



Empty the clean water tank.

1. Unplug the plug in the clean water tank after the wastewater tank has been emptied.
2. The water in the clean water tank will flow into the wastewater tank.
3. Then, continue to empty the wastewater tank using a wastewater pipe.



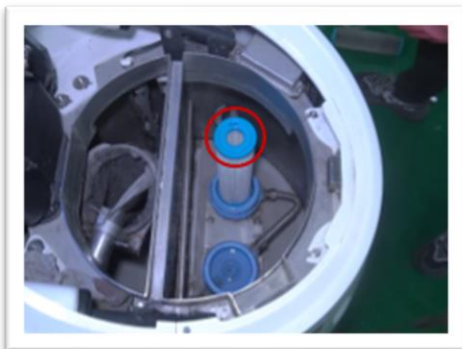
Remove the right filter bottle and cartridge.

1. Use a wrench to loosen the filter bottle anti-clockwise and take the bottle and cartridge out.
2. Put the cartridge in the bottle and place them aside.
3. Take the other set of bottle and cartridge in the same way.



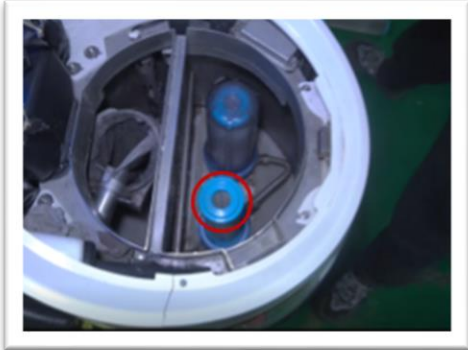
Replace and install a 30-micron filter.

1. Prepare a new cartridge. Ensure one end of the filter is marked 30 microns.
2. Place it on the filter near the side of the water tank wire strainer.
3. Then, put on the filter bottle and use the filter bottle wrench to tighten the filter bottle.



Replace and install a 50-micron filter.

1. Prepare a new cartridge. Ensure one end of the filter is marked with 50 microns.
2. Place it on the filter on the side away from the water tank wire strainer.
3. Then, put on the filter bottle and use the filter bottle wrench to tighten the filter bottle.



Close the water tank cover.



Close the top lid.



Withdraw the drainpipe.

1. Withdraw the drainpipe after ensuring the cap is tightly closed.



1.18. Roller Brush Maintenance

Material:

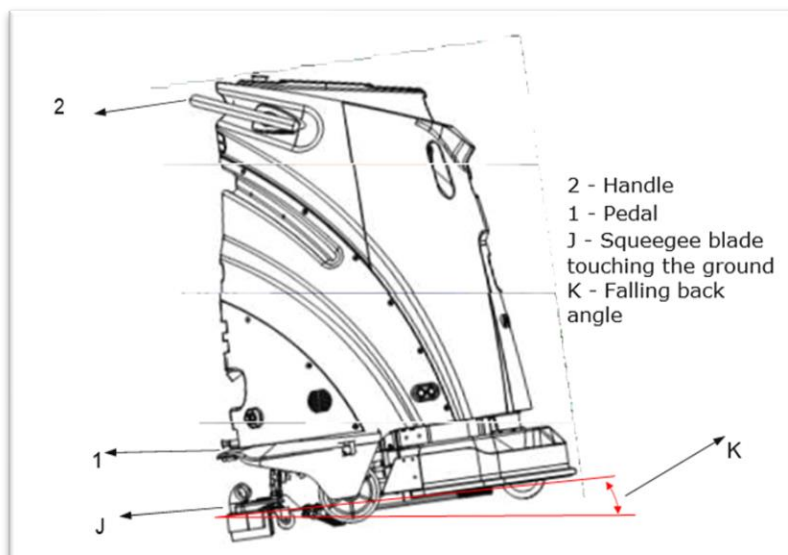
Nylon brush

Replacement criterion:

The service time reaches the specified consumable replacement time, or the brush is severely worn out.

Brush replacement method:

One person needs to hold the handle tightly with both hands and step on the pedal with one foot, which slowly causes the scrubber to fall back. When the squeegee blade touches the ground, it stops reclining. Another person should stretch his hand under the brush tray, touch the edge of the brush tray, press down slightly with his hands, and then take the opportunity to remove the brush tray.



1.19. Roller Brush Replacement

Remove the front bumper shell.

1. Pull up the buckle to remove the front bumper shell.



Remove the roller brush.

1. Take the front roller brush out from the left side of the robot.
2. Long press the button on the latch and take the latch out.
3. Then, remove the metal cover and take the roller brush out.
4. Take the rear roller brush out from the right side of the robot in the same way as the front roller brush.



Install a new roller brush.

1. Prepare a new roller brush, insert its front left side, and reach for the gear, while holding it with one hand.
2. When the gear is joined, install the metal cover.
3. Push it from the bottom up to the two locking screws.
4. Then, align the hole of the latch, and insert the latch.
5. Make sure the latch was locked tightly.



Close the front shell.



NOTE: Replacement for different brush

- The replacement steps for front&rear roller brush, bristle brush, and cloth brush are the same.

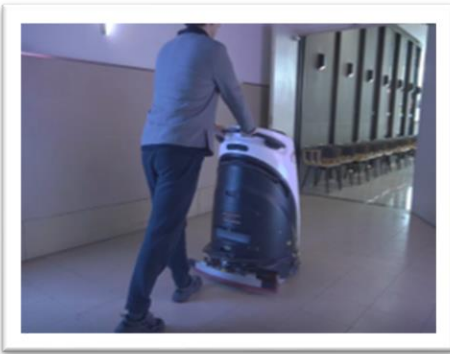
1.20. Rubber Strip Replacement

Switch the robot to manual mode.

1. Press the auto/manual mode switch button for 3 seconds and confirm that the button indicator light is turned off.



2. Push the robot to the maintenance point.



Remove the rubber strips

1. Press the **black** button on the squeegee and remove the inner and outer rubber strips.



Install new rubber strips.

1. Prepare a new set of rubber strips.
2. Install the inner strip first which has gaps in it.
3. Press the button on the squeegee and install the strip.



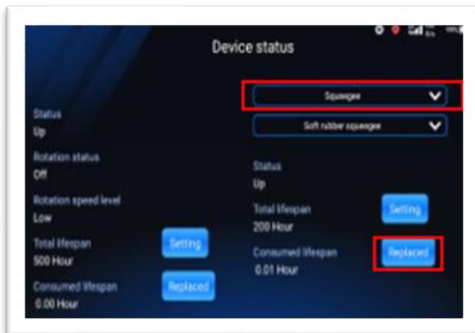
Check the stability of the rubber strip.

1. Shake the strip after installation to ensure it is installed correctly. Use the same way to install the outer strip.



Reset the lifespan.

1. After the replacement, click the left navigation bar and select "**Device status.**"
2. Go to "**Squeegee/dust mop.**"
3. Click "**Replaced.**"
4. Click "**Confirm.**"



1.21. Procedure for Disinfection Package Deployment

Get access to a disinfectant box:



1. Open the top lid.
2. Open the cleaning water tank.
3. Open the disinfectant tank.



NOTE:

- Toggle the buckle left or right, then take the disinfectant tank out.

4. Add the disinfectant to the tank carefully.



IMPORTANT:

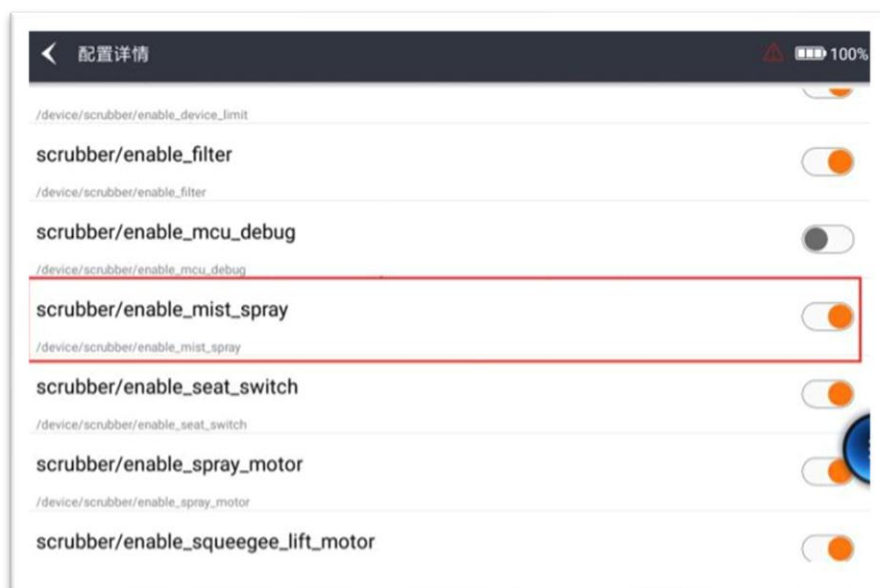
- Smoothly add disinfectant to avoid overflow.
- Disinfectant: hypochlorous acid (recommended).
- Observe the liquid level while filling the disinfectant.
- Stop filling when it is close to full.
- Load in the disinfectant tank: maximum - 5 liters.
- Load in the water tank: maximum - 20 liters.

Pay attention to the liquid level when filling the disinfectant without a measuring cup.

Config settings

Complete the following steps during deployment:

1. In "advanced," please enable mist spray to turn on the feature.



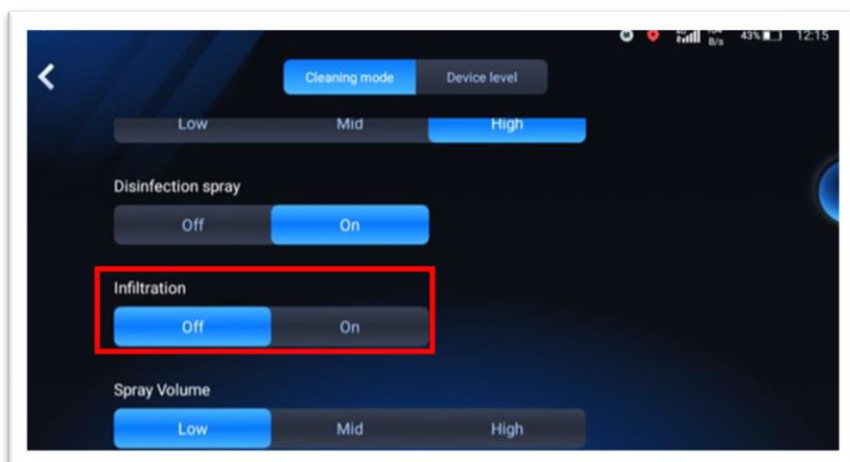
2. Restart the robot to activate this feature after turning it on.

For operator:

1. After enabling the disinfection feature, turn "**Disinfection spray**" on in the cleaning mode interface. It is available in both auto and manual modes.



2. The "**Disinfection Spray**" option is set to open by default.
3. If the "Disinfection Spray" option is not displayed, "scrubber/enable_mist_spray" may not be enabled. Enable it first.



NOTE:

- Set the "Spray" feature enabled to have it work together with the cleaning task. If it is set to "disabled," it will not work together with the cleaning task.
- The spray will be paused when the robot moves backward.
- The spray is not restricted by turning and speed with a regular value of 0.8L/H
- The "Spray" feature has two statuses: "on/off." The speed and level are adjustable.



When the spray feature was turned on, and if there is no disinfectant, there will be an alarm message pop-up in UI.

If the low liquid level of disinfectant was detected during operation with the spray on, the spray will be stopped, and an alarm message will pop up - *"20043 ran out of disinfection"*. Pause the operation and add disinfection in time.

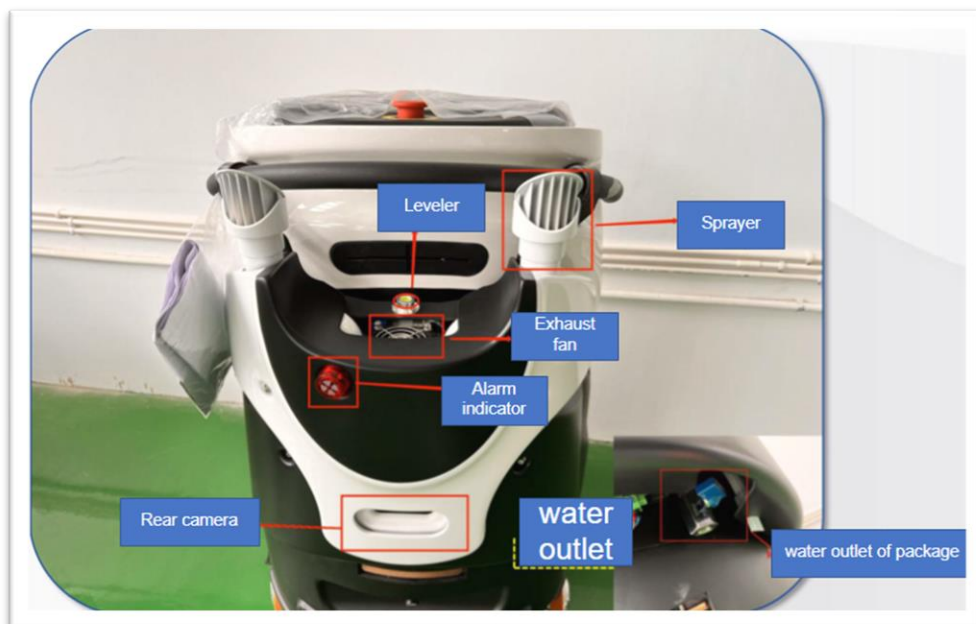


If the spray was turned off, the liquid level will not be monitored, the alarm will not pop up during cleaning tasks.



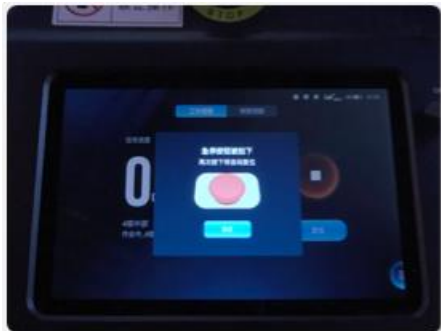

The liquid level sensor will not be affected by water waves. It monitors the consistent level.





Cleaning procedure





1. Drain disinfectant from the outlet first.
2. Fill the tank with clean water.
3. Drain the clean water.
4. Keep the outlet open and fill the tank with clean water for 1 minute.










2. APPENDIX A. SOLUTIONS FOR COMMON PROBLEMS

Problems	Possible Reasons	Solutions
Power-on failure	Air Switch 	Check if the air switch has been turned on.
	Battery Activation 	Remove the dust cover of the charging port in the robot and charge the robot for a while, then try to power it on again.
	Emergency STOP button engaged 	The robot will pause the current cleaning task when the emergency STOP button is pressed. Press the button again to continue the current cleaning task.
Intermittent lag		Press the auto/manual mode switch button for 3 seconds and confirm that the button indicator light is turned off. Then, push the robot to the maintenance point in manual mode.
	Wipe external sensors	Check if there is contamination on the surface of the camera or laser, or if they are blocked by something

No actions after starting auto-operation		else. Use a soft, clean, and lint-free wipe to clean the surface of the sensors.
	Clean front horizontal laser 	Lift the latch of the front bumper and open the shell and clean the front horizontal laser. Close the shell after cleaning.
	Emergency STOP button engaged 	Check if the emergency STOP button was pressed. (Red liner light indicator means it was pressed, blue light means it has been released). If it was pressed, click "confirm" on the screen, and press the button again to continue the cleaning task.
	Robot lost locating 	Check if the robot lost locating. (White icon means locating is normal, red means lost). If the robot lost locating, push the robot to the landmark point for re-locating.
	Alarm message	Open "Health management" and check if there are alarm messages. If they cannot be resolved, please take photos, and contact us for support.



		
An abnormal noise from rubber strips	<p>Something adhered to strips</p> 	<p>Press the auto/manual mode switch button for 3 seconds and confirm that the button indicator light is turned off. Then, push the robot to the maintenance point. Lift the squeegee and clean the strips with a clean wet wipe.</p>
	<p>Strips damaged or worn</p> 	<p>If the strip is damaged or worn, please do the replacement.</p>
Water stains left on the ground	<p>Something adhered to a strip</p> 	<p>Press the auto/manual mode switch button for 3 seconds and confirm that the button indicator light is turned off. Then, push the robot to the maintenance point. Put on gloves and lift the squeegee to check if something is adhering to the strip. Clean strips with a clean wet wipe.</p>
	<p>Air leakage into the water tank</p>	<p>Remove the water tank cover and check if the sealing strip on it is good.</p>

		
	<p>The cap of the drainage pipe</p> 	<p>Check if the cap of the drainage pipe was closed tightly.</p>
	<p>The suction pipe is blocked</p> 	<p>Check if the suction pipe was inserted well or blocked. Loosen the locking screw and remove it and check for any blockage inside it.</p>
	<p>Improper height of squeegee</p> 	<p>Engage the squeegee to touch the ground. Check the height of casters and adjust it to achieve a 30-45° between the strip and the ground.</p>
	<p>The rubber strip is damaged or worn</p>	<p>If the strip is damaged or worn, please refer to the maintenance guide - rubber strip replacement to do the replacement.</p>

		
No or low water spray	<p>Filter timeout or overload</p>    	<ul style="list-style-type: none"> ➤ Press the auto/manual mode switch button for 3 seconds and confirm that the button indicator light is turned off. Then, push the robot to the maintenance point. ➤ Open the cap of the wastewater pipe and quickly put it down to drainage (<i>Kind reminder: hold the pipe upward when opening the cap</i>). ➤ Unplug the plug in the clean water tank after the wastewater tank has been emptied. The water in the clean water tank will flow into the wastewater tank. Then, continue to empty the wastewater tank using a wastewater pipe. ➤ Remove the filter bag, filter bottle & cartridge, and steel wire filter. ➤ Flush and clean the filter bag, filter bottle & cartridge, and steel wire filter. ➤ Put the water tank cover back. ➤ Close the top lid. ➤ Ensure the cap is closed tightly, then withdraw the drainage pipe.



Auto-charging failure	Power supply failure	Check the power supply to the workstation.
	Rear camera contaminations	Check if there is contamination on the surface of the rear camera, or if it is blocked by something. Clean it with a soft, clean lint-free wipe.
	Obstacles around	Remove all obstacles around the workstation and charging pile.
	QR code for docking dirty or damaged	Check if the QR code is dirty or damaged. Clean it with a clean wet pipe.
	Improper air switch position	Check and turn the air switch of the robot on.

		
		
Poor water absorption	The power adapter is damaged	Connect the power adapter with the robot first. Then connect the adapter to the 220VAC power supply. The flashing red indicator means charging is ongoing. If the indicator is off, it means the power adapter could be damaged. Please contact AROS Technical Support for assistance.
	The rubber is worn and damaged	Change rubber.
	The suction outlet of the water-sucking scratcher is blocked	Remove dirt.
	The water tank cover is not well covered	Readjust the water tank cover.
	The suction volume of the cleaning configuration is too small	At least, ensure that the suction volume is greater than 70%.
	The caster wheel is loose	Readjust the height of the caster wheel to make the rubber contact the ground best.
	Excessive water, over 30%	The amount of water sprayed on the marble floor should be kept at 20% ~ 25%.
Filtration overload	The steel mesh of the sewage tank is damaged or dirty	If damaged, it should be replaced; if it is too dirty, it should be cleaned.
	The filter element of the clean water tank is too dirty	Clean or replace the filter element.
	Problems with the filter pump body	Replace the pump.
	The water pipe is bent or blocked	Straighten the water pipe and replace it if it cannot be restored. If the blockage is serious, replace it.
Water-spraying overload	The steel filtering screen of the clean water tank is too dirty	Clean or replace the steel filtering screen.

No spraying	The solenoid valve is damaged	Replace the solenoid valve.
	The amount of clean water in the clean water tank is too small	Add clean water.
	The steel filtering screen of the clean water tank is too dirty	Clean or replace the steel filtering screen.
	The solenoid valve is damaged	Replace the solenoid valve.
	The electric ball valve is damaged	Replace the electric ball valve.
	The water pipe is broken or leaked	Replace the water pipe.
No filtering	The filtering function is turned off by the tool on the APP main interface	Turn it on manually.
	The water level of the sewage tank did not make the third floating ball float	Without treatment, the sewage will be automatically filtered when it reaches a certain water level.
	The steel mesh of the sewage tank is too dirty	Clean or replace the steel mesh.
	The filter element of the clean water tank is too dirty	Clean or replace the filter element.
	The filter pump body is damaged	Replace the filter pump.
There are wheel marks on the ground	Check the wheels for dirt	Clean the rubber coating of the rear wheel with a brush.
	There is a stained layer on the surface of the ground	Clean it with Gaussian special detergent.
	The wheel encapsulation is hard	Replace it with the wheel with softer encapsulation.
Locating failed	The robot is not within 2 m of the landmark point	Push it within 2 m of the landmark point.
	The wrong floor is selected	Move it to the right floor.
	The location and environment of landmark points change too much	Delete old landmark points and create new landmark points.
Running is stuck or the head swings	Dirty sensor	Please wipe it gently.
	Scratched sensor	Replace parts.
	Impacted by strong and direct light	Contact the after-sales personnel for handling.
	Inaccurate TF	Calibrate TF.
No voice for obstacle avoidance	The power amplifier is turned off	Turn on the power amplifier.
	No voice files	Contact the after-sales personnel for assistance. In the future, customized voice content will be supported.
	System problems	Contact the after-sales personnel for assistance.

Robot cannot be charged	Speaker failure	Replace the speaker.
	The air switch is disconnected	Close the air switch manually.
	Damaged charger	Contact the after-sales personnel to replace parts.
	The plug-in row is not powered	Replace the plug row or change the charging position.
Stop in automatic task	Full sewage tank	Discharge sewage.
	Empty clean tank	Add clean water.
	The wheel is stuck	Move the robot manually and solve environmental problems.
	Other faults	Check the APP alarm and contact after-sales personnel for handling.
Unable to enter APP	Loose network cable leads to disconnection of host and slave computers	Re-insert the network cable and tighten it.
	Loose network cable of the all-in-one robot	Re-insert the network cable and tighten it.
	All-in-one robot failure	Replace the all-in-one robot.
	Control box failure	Replace the control box.
	System failure	Update the system version.
The brush/water-sucking scraper cannot be lowered	No lowering is set under cleaning mode	Reset the cleaning mode.
	Structural interference results in the inability to lower	Confirm the interference position for structural adjustment or replacement of components.
	Push-rod motor failure	Replace the pushrod motor.
	Drive failure	Update parameters and replace the drive.

3. APPENDIX B: CONSUMABLE REPLACEMENT SUGGESTION

Power consumption level		High consumption	Medium consumption	Low consumption
Consumables	Remarks	Supermarket, planning scene – 4-6 working hours per day. Rough ground like Cement floor – 3-4 working hours per day. The ground with heavy sewage.	Wear-resistant floor, terrazzo, and other slightly rough ground – 3-4 working hours per day. Rough ground – 1-2 working hours per day. Smooth ground – 3-5 working hours per day. The ground with some sewage.	Epoxy floor, plastic floor (PVC or else floor that can be cleaned via dust-mop or bristle brush). Marble, artificial tile, and other smooth surfaces. Relatively clean floor.
Filter Cartridge	30µm - cartridge	2 times/month	1-time/month	1-time/month
	40µm - cartridge	2 times/month	1-time/month	1-time/month
	50µm - cartridge	2 times/month	1-time/month	1-time/month
Rubber strips of the squeegee	Front strip	2 times/month	2 times/month	1-time/month
	Rear strip	2 times/month	2 times/month	1-time/month
Steel wire filter	Steel wire filter in the clean water tank	1-time/quarter	1-time/quarter	1-time/semi-annual
	Steel wire filter in the wastewater tank	2 times/quarter	2 times/quarter	1 time/quarter
Disk brush	10 inch - bristle disk brush	2 times/quarter	1-time/2 months	1-time/quarter
	10 inch - disk brush	2 times/quarter	1-time/2 months	1-time/quarter
	10 inch - disk brush assembly (magnet) (needle plate together with cleaning pad)	2 times/quarter	1-time/2 months	1-time/quarter
Cleaning pad	Cleaning pad-GS75.1.1.1.1.3	4 times/month	2 times/month	2 times/month

Needle plate	FB0679245mmGX - compound needle brush	1-time/semi- annual	1-time/semi- annual	1-time/semi-annual
Castles	1.6-inch castle (M8-L40)	1-time/month	1-time/2 months	1-time/quarter
Roller brush	V-type roller brush - left side	1-time/semi- annual	1-time/semi- annual	1-time/semi-annual
	V-type roller brush - right side	1-time/semi- annual	1-time/semi- annual	1-time/semi-annual
	Double row roller brush - L	1-time/semi- annual	1-time/semi- annual	1-time/semi-annual
	Double row roller brush - R	1-time/semi- annual	1-time/semi- annual	1-time/semi-annual
Upper suction pipe	Upper suction pipe	1-time/semi- annual	1-time/semi- annual	1-time/semi-annual
	Sewage suction pipe -50	1-time/semi- annual	1-time/semi- annual	1-time/semi-annual
Filter bag	Non-woven filter bag 150 mesh 5L	2 times/month	2 times/month	1-time/month
	Nylon filter bag 200 mesh, 5L	2 times/month	1-time/month	1-time/month

4. APPENDIX C: TECHNICAL SPECIFICATION

Parameter Type	Parameter	Value
ROBOTICS	Navigation Technology	Integrated Lidar-Visual SLAM
	3D LIDAR	No
	Primary Laser detection distance	25 m
	Laser scanning angle	270°
	Secondary Laser detection distance (level)	No
	Secondary Laser detection distance (inclined)	No
	Depth Cameras	3* Real sense camera
	Ultrasonic Sensors	Yes
	Anti-drop Sensor	by using an inclined laser
	Collision sensor	Yes
	Mapping Process	Easy onsite mapping (off-line, on-screen)
	Mapping Efficiency (e.g., 3,000 sqm)	1 hour
	Map Editing	On-site, Off-line, On-Screen
	Single map coverage	Max. 30,000 m ²
	Dynamic Map updating	Yes, a maximum of 30%
	Minimum distance close to the wall	7-10 cm
	Ability to detect thin poles and hanging obstacles	Able
	Dynamic path planning	Yes
	Obstacle avoidance strategy	slow down-stop-wait-bypass-replan path
	Start the task anywhere on the map	Yes
	Continue the previous task after interrupting/switching to manual mode	Continue from where it stopped
	Ability to work in complicated and dynamic scenes	Able
	Can detect obstacles higher than N cm	10 cm
SOFTWARE & DIGITAL	Cloud Platform to check the statistics and monitor	Yes
	Task Reports and Alerts	Auto-generated and comprehensive email
	Mobile App	Yes
	Account with different access levels	Yes
	Scheduling function	Yes
	OTA	Yes

	Ability to work offline	Yes
	Manual mode	Yes, Push behind
	Adjustable cleaning mode	Yes
CLEANING PERFORMANCE	Working width	50 cm
	Water absorption width	72 cm
	Disc Brush RPM	270
	Cleaning down-pressure	12,5/15 kg
	Number of main brushes	2 pcs
	Optional Rolling brush	Yes
	Clean Water Tank Capacity	24 l
	Recovery Tank Capacity	18 l
	Filtration function	4-stage filtration system
	Cleaning speed	1.1 m/s
	Charging time	1-2 hours
	Operation time	2.5 hours
	Cleaning efficiency	800-1200m ² /h
	Max. cleaning area/Charge	2,000 m ²
KEY COMPONENTS AND OTHERS	Battery capacity	24V / 40Ah Li-ion
	The weight of the body (including the battery)	150 kg
	Warning lights	Yes
	Dimensions (mm)	860 (L) X 700 (W) X 1030 (H)

5. APPENDIX D: SCRUBBER 50 Consumables

Nº	CODE	PART NAME	DESCRIPTION	PRICE (€)	1 SET/ 6 months	SET PRICE (€)
1	A0304020327	Hem Strips - Magnetic Suction	5037180009 S00 Natural Rubber	8.00	1	8.00
2	A0304020328	Brush Plate Front Strip - Magnetic Suction	5037180014 S00 Natural Rubber	6.88	1	6.88
3	A0304020332	Suction Stripping Front Rubber	5037080003 S00 NR	14.80	2	29.60
4	A0304020333	Absorb Water and Scrape Back Rubber	5037080004 S00 NR	15.68	2	31.36
5	A0304000463A	Brush Skirt	7504180004 Brush hem front A00 rubber +PA	27.28	1	27.28
6	S0100000176	Hexagonal Magnetic Brush Tray Set - Red	5037180027 A00 9 Inch Magnetic Brush Disc (Medium), Wiring Diameter 0.35mm, Red, Life Span 500h	42.64	2	85.28
7	S0100000101	Needle Hook Tray	5037180020 S00 9 inches, gray	43.12	1	43.12
8	A0312010340	Wool Mat	Customized Part, 9 Inch, Red, T 25mm. Used to remove slight scratches and dirt to form a smooth and shiny bright surface. It is an ideal product for daily cleaning and polishing.	5.20	3	15.60
9	A0303010653	Dust Cloth Gray (Good Water Absorption)	T501003, 3.3.1, GS 50, 170*720, 1PCS, with good vacuum effect.	4.72	3	14.16
10	A0306010312	Manyfold Filter	Filtering Accuracy 50 µ, Dims: Inner Diameter 28mm, Outer Diameter 69mm, Total Length 250mm, Washable.	4.32	3	12.96

11	A0306010313	Manyfold Filter	Filtering Accuracy 100 μ , Dims: Inner Diameter 28mm, Outer Diameter 69mm, Total Length 250mm, Washable.	4.32	3	12.96
12	A0306010004	Clean Water/Sewage Filter	1/2 Inch Outer Thread L 30, Filter Cartridge L ϕ 45*180	38.88	2	77.76
13	A0312012138	Nylon Mesh Bag	Material: Nylon, Mesh: 100 Mesh, Specification: 300* 450mm, Opening Width: 300mm (With Drawstring).	1.92	4	7.68
14	S0100000102	Filter B Component	Extended Filter Wool, Applicable to V3.5.2 Squeegee.	62.96	1	62.96
15	A0305040312	Suction Tuyere Honeycomb Filter Cotton Mesh	T50330040, V3.3	2.56	1	2.56
16	A0308010302	1.6 Inch Wheels	Standard Part; 1.6 Inch Caster Wheel; M8-L40	1.84	2	3.68
TOTAL:						338.72