

ROBO-TEK

 **PROWLER**

3 in 1 Industrial Floor Cleaner Cleaning Robot



Please read this User Manual carefully before using this product and keep this manual properly.

Dear users:

Thank you for purchasing the Prowler, 3 in 1 industrial Floor Cleaning Robot..

It is a commercial cleaning product, which integrates floor scrubbing, dust mopping, and vacuuming into one. It delivers autonomous high floor cleaning efficiency. Equipped with a charging station, it will recharge as required.. The robot components are modular in disassemble design, enabling rapid parts change and, simple maintenance. There unit can be control from a central dashboard, a mobile app, or remote driven. And is suited to a wide range of environments, including hospital, shopping mall, office building, hotel, exhibition hall, airport terminal buildings and museums etc.

To help you use the product correctly and quickly, please read this document carefully before using the product and keep the manual handy for future reference

Due to continuous updates, there may be some differences between the actual product and the User Manual. Please refer to the actual product. If you have any doubt, please contact our company.

If you encounter any problem during using the product, please Robo-Tek customer service staff by the following ways:

1. Call the service hotline 03 9357 5662,
2. Email service@robo-tek.com.au

Robo-Tek will arrange a customer service specialist to answer any question you have during using the product.

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Product Introduction

1. In the Package

a. Main body



Robot*1

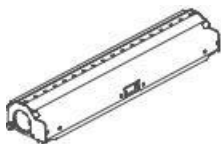


Charging station*1



Charging dock*1

b. Accessories



Scrubbing module*1



Mopping module*1



Mopping cloth*2



Roller brush*1



Filter bag*2



HEPA*2



Remote control*1



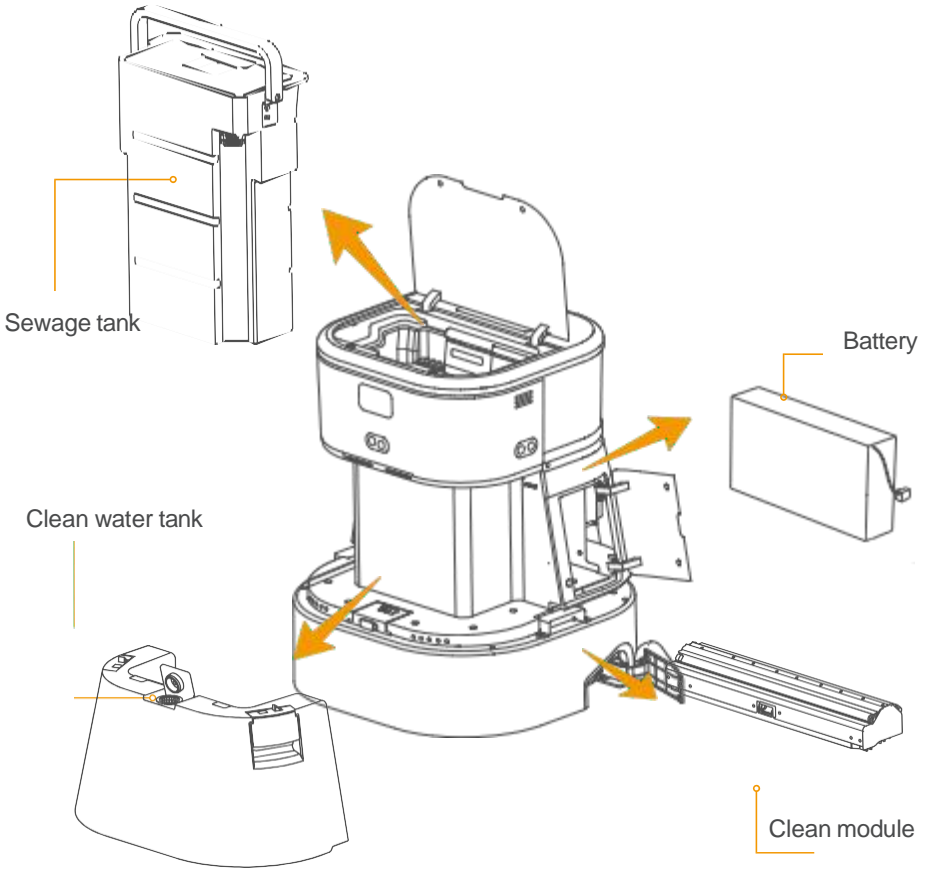
USB cable*1



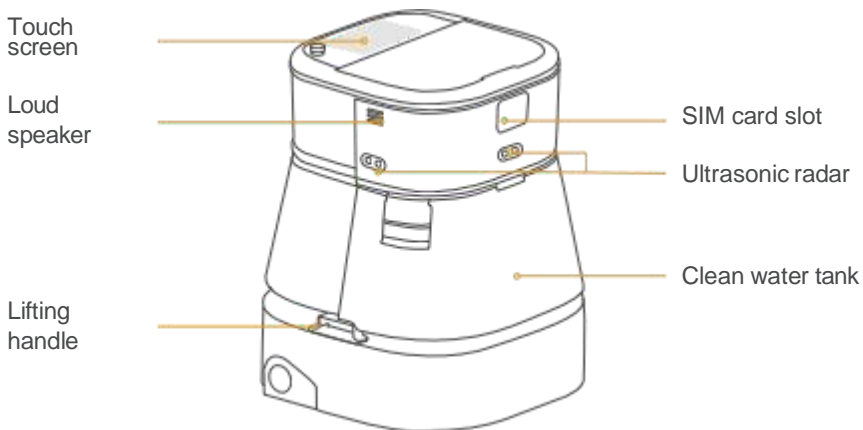
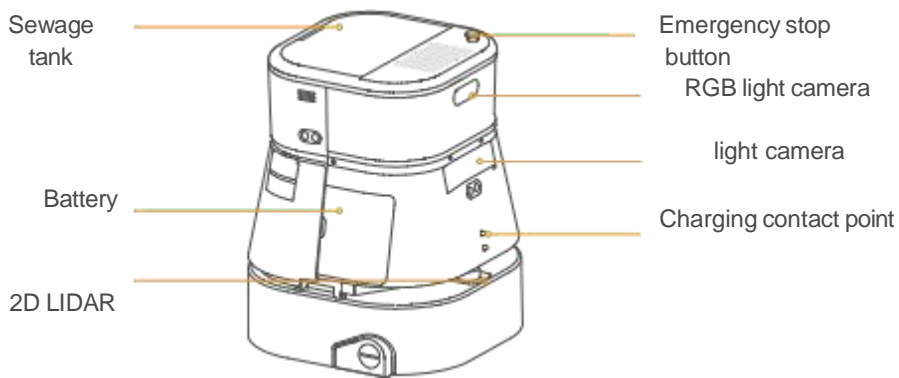
Power cable*1

2. Detailed Description

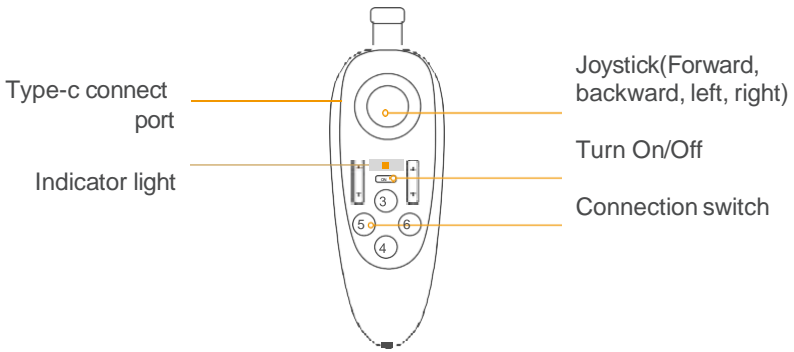
a. Body explosion



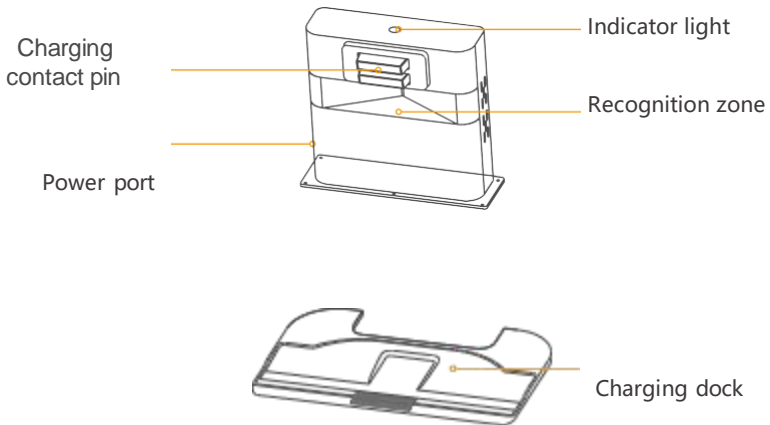
b. Main body



c. Remote control



d. Charging Station



Product Use

1. Safety Instructions

1) Use Restrictions

Use the product according to the User Manual. User shall not disassemble and re-install without professional assistance. In particular, the disassembling of the collision mechanisms are strictly prohibited. User shall be liable for damage caused by unauthorized disassembling.

- Do not use the product in region Above 2000m altitude.
- Do not use or place the product in area with a slope angle greater than 10°.
- Do not use the product in any environment with a temperature greater than 40°C or lower than 0°C.
- Follow safety precautions and do not wash or spray the robot with water or other liquid.
- Do not place any objects (including children and pets) on the robot's main body, whether it is moving or staying still.
- Avoid sudden approaching or blocking the robot from people or pets during operation. Sudden approaching or blocking might cause damage from collision.
- Do not use the product to clean any ignited objects (such as burning cigarette butts), hard objects or sharp objects (such as decoration wastes, glass, and nails).
- The product is not applicable for scenarios with poor floor conditions, such as uneven surface and floor with large potholes. Do not use it in these scenarios and bypass these dangerous areas when planning a working area.
- Do not use the product on soil surfaces, grasses, artificial turfs

- Do not deploy and use the product in damp and humid environments. Excessive humid environment may cause damage to circuits or electronic modules in the product.

2) Safety Tips

- The product can only be used and kept by full-time staff that have received training. Operators must be familiar with the User Manual before using the product.
- The transportation of the product shall comply with the requirements in GB/T 4857.23-2012 Requirements for Road Transportation with Steel Spring Damping Trucks.
- This is a Class A product. In a domestic environment, the product may cause radio interference in which case the user may be required to take adequate measures.
- The product's sensors may not work in an environment surrounded by glass walls or other high-transmittance materials. In-order to avoid unnecessary risks, it is not recommended to use the product in these environments.
- Users can press the emergency stop button to stop the robot in any emergency (such as abnormal running status or accident) that may cause harm to surrounding environments.
- Make sure the robot is powered off during transportation. It is highly recommended to pack the robot in the original packing box before transporting. Make sure the robot is powered off during transportation.
-

NOTE : It is highly recommended to pack the robot in the original packing box before transporting.

3)

4) Battery & Charging

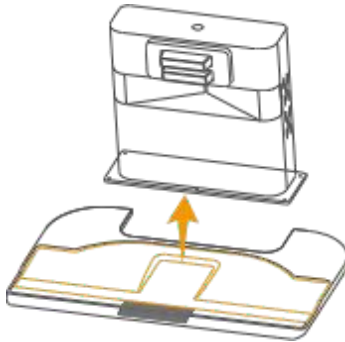
- Be sure to use a power supply that is correctly grounded in compliance with local regulations and requirements in the User Manual to avoid eclectic shock and damage to the robot.
- Clip the charging dock into the bottom groove and lock the five screws at the bottom of the charging dock tightly before using the product.
- Make sure that the charging station is in good condition connecting the product to the power supply through the charging station.
- Place the charging station against the wall on a level floor and reserve a space above 1m on both sides and above 1.5m at the front of the charging station.
- Keep the charging station away from heat sources (such as radiators).
- Only charge the robot with the original charging station provided.
- Place the charging station close to the wall to avoid charging station being moved.
- Do not drop or crash the charging station.
- Do not touch the power cable with wet hands; do not grasp the power cable to pull the charging station out of the charging dock.
- Protect the charging station against rain, liquid immersion, and dampness.
- Do not use the battery with other devices.
- Do not touch the power outputs of the charging station and robot charging port to avoid potential risks.
- Do not disassemble, repair, or modify the battery or charging station without permission.
- Do not use damaged or broken power cable and contact customer service staff.

- If the product is to be idle for a long time, charge it fully and power off the robot, then store it in a cool and dry place. Charge the product at least once every three months to avoid battery over-discharge.

2. Initial Deployment

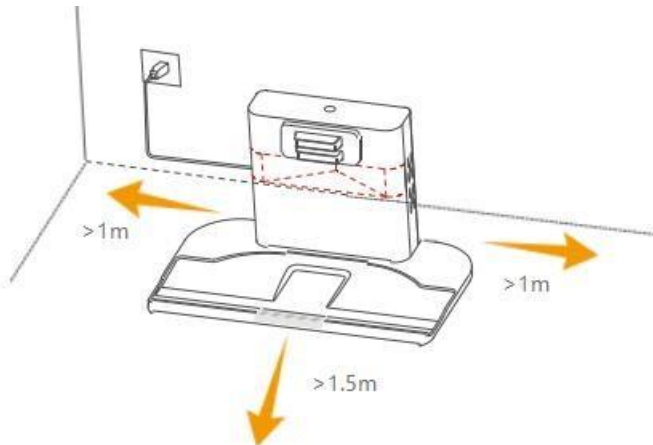
1) Install the charging station

Clip the charging station into the bottom groove and screw the six screws at the bottom of the charging station tightly.



2) Fix the charging station

Place the charging station against the wall on a level floor and connect the power cable to the charging station. The indicator light will turn on when the charging station is connected.

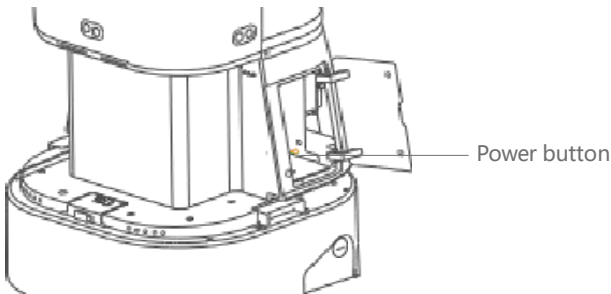


Tips:

- Reserve a minimum distance of 1m on both sides and a minimum distance of 1.5m at the front of the charging dock. Place the charging station by the wall as close as possible to avoid displacement.
- Avoid blocking the charging station's recognition zone in any scenario. The indicator light will light up when the charging station is powered on and will be off when the charging station is powered off.

3) Power on the machine

Press the power button on the robot's right side to power the robot on. At this point, a boot screen will be displayed on the touch screen. Once start-up the machine, the screen shows the lock page, input the password to enter (The initial password is 1234). Till the battery icon appears the machine successfully start-up.



Tips:

- The robot may not be powered on when the battery level is low. In this scenario, please charge the battery or replace the battery.
- The robot comes with built-in high-performance lithium iron phosphate batteries. In order to maintain the battery performance, the battery needs to be charged during daily operation.

4) Connect to the AllyBot APP

The machine can be operated through Allybot APP, supporting Android system. (iphone is currently under development 2024)

a. Installing APP

User will receive the installation package file of the mobile AllyBot app from our company and install it directly on an Android mobile device; user can also enter the download interface directly by scanning the QR code below.

Tips: Due to product constant upgrading, please contact our technical person to confirm the soft version of the device before downloading.



b. APP Using

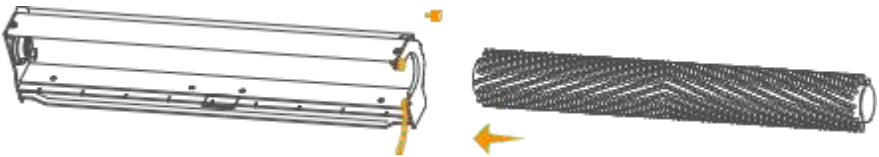
User can launch the AllyBot app and log in with a user account. After login, add a robot by scanning the robot's QR code using the app. Common users need to apply to the administrator for permission before using the robot.

New users need to register an account first and then log in with their account to use the app.

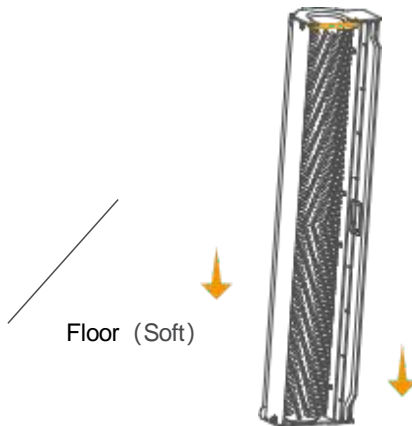
3. Parts Installation

1) Install the roller brush

- a. Loosen the screws at the chamber right sides of the right cover of the scrubbing module chamber/vacuum module chamber to remove the chamber cover.
- b. Install the roller brush in the correct direction into the scrubbing module chamber/vacuum module chamber to form a roller brush module.

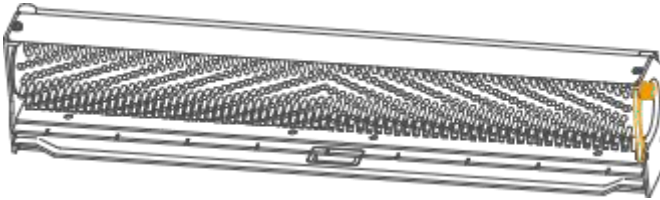


- c. Vertically placing the roller brush like the arrow direction, gently tap the chamber on the soft floor to have it installed in place.



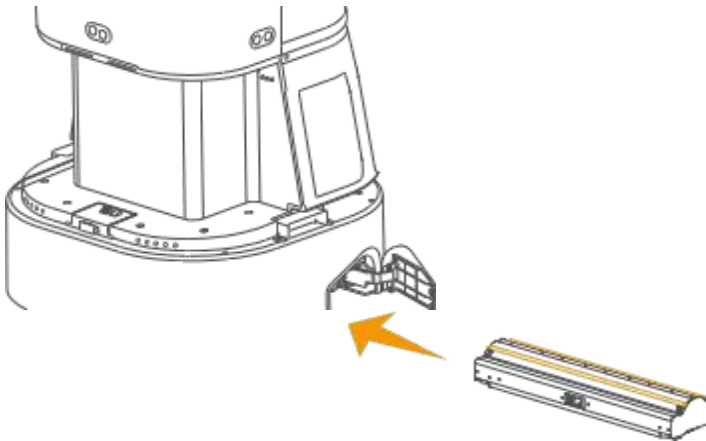
Tip: When to tap down the chamber as step c instructed, please find a soft floor, like carpet, or place a heavy towel on the floor before tapping to avoid damages.

- d. Gently pull the brush to check if it is tightly fixed to the position, and try to rotate the brush to make sure it works.
- e. Finally, reinstall the brush limit bar back to its original place, and insert screws to fasten the module.



2) Installation of scrubber module

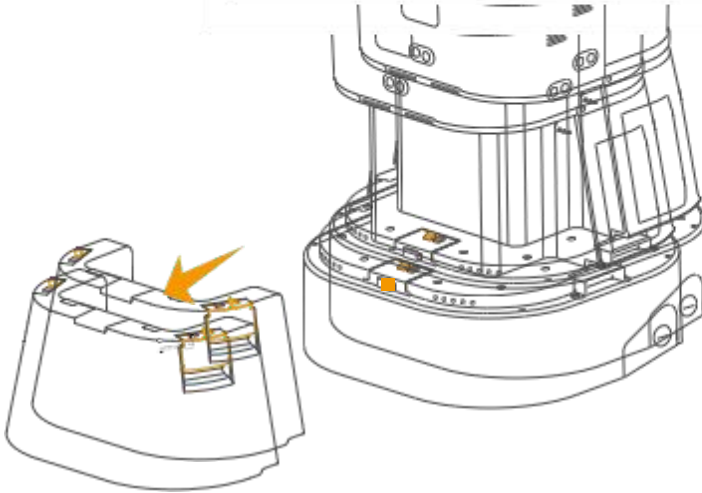
- a. Open the right flip cover at the bottom of the robot and slide the scrubbing module chamber/vacuum module chamber into the groove along the top slide rail.



Tip: Before starting the floor scrubbing operation, please be sure to complete the above roller brush and chamber installation to ensure that the robot can wash the floor normally.

3) Filling clean water

- a. Press the lock button on the clean water tank base gently to unlock the water tank.
- b. Press the handles on both sides of the clean water tank, upward with hands to unlock the left and right buckles, and pull the water tank out backward horizontally.



- c. Open the water tank cover and fill in the water tank with cleaning water.



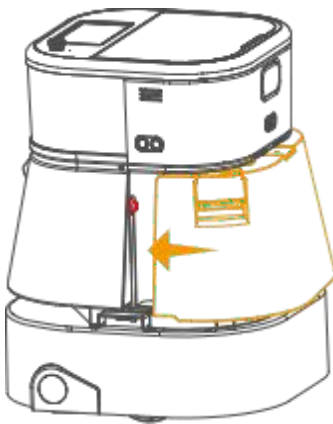
Tips:

- When the water volume in the clean water tank decreases to 1%, the robot will stop operation and stay in place automatically and send a low clean water level alarm. User can remotely control the robot to move to a water filling area. Afterwards, remove the clean water tank to refill .
- When installing the clean water tank, make sure that the bottom buckle has been locked successfully and the handle buckles on both sides have been fastened to avoid water tank fall off during operation.

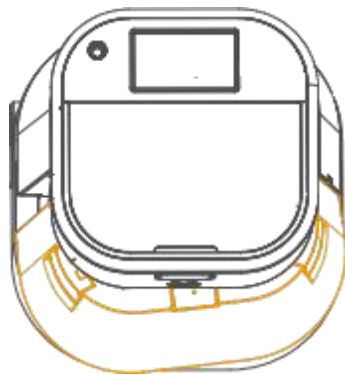
4) Installing clean water tank

Grasp the left and right handles of the water tank with both hands, push the water tank into the position along the horizontal direction, and the bottom buckle locks itself. Mean time, the onboard interface displays "the water tank has been correctly installed", indicating that the water tank has been installed in place.

Tip. When sliding the clean water tank horizontally into to position, install the right side of the clean water tank first, and then install the left side in place.



▲ Side view



▲ Top view

Tips:

- When installing the clean water tank, be sure to align the connection of the water outlet on the left side of the clean water tank, to avoid failure to discharge water or leakage at the water outlet.
- When installing the clean water tank, ensure that the bottom buckle is successfully self-locked, and the buckle on both sides of the handle is tightly locked, so as to avoid the displacement of the water tank when the robot is working.
- Before starting the cleaning operation, be sure to complete the above cleaning tank water filling and installation of the cleaning tank to ensure that the robot can be cleaned normally.
- When the water level of the water tank drops to the lowest level, the operation will be automatically suspended and stopped in place, and the alarm will be issued that the water amount is too low. You can remotely control the robot to the area where water can be added to remove the water tank and add water.

5) Discharging sewage water

- a. After opening the flip cover at the top of the robot gently, user can see the sewage tank inside. Flip the sewage tank handle to a vertical angle and take the sewage tank out.
- b. Open the sewage tank cover and discharge sewage from the sewage tank, rinse the sewage tank with clean water or brush.
- c. Put the sewage tank cover back along the right direction.
- d. Align the sewage tank in the opposite direction of the arrow and put it back.

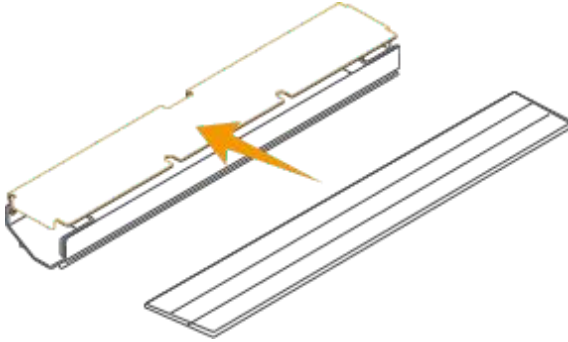


Tips:

- Before starting the floor washing/vacuuming operation, make sure that the sewage tank cover and the sewage tank are installed in place to ensure tightness for normal floor washing/vacuuming cleaning.
- During operation, keep the surface of the water sensor pin/copper column dry and clean.
- When the water volume in the sewage tank reaches the 100% limit level, the robot will stop operation and stay in place automatically and send a high sewage level alarm. User can remotely control the robot to move to a water discharging area and remove the sewage tank for discharging.
- If clean water is not filled in or sewage is not discharged for a long time, the robot will stay in place and wait for water filling/discharging. It will automatically return to the charging station if no operation is done after 10 minutes.

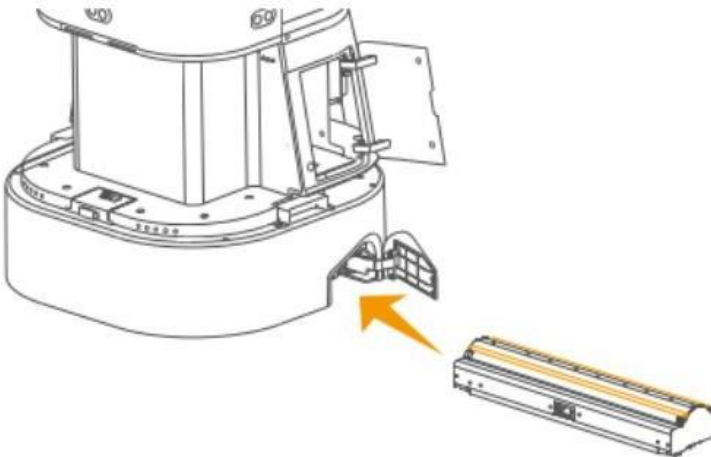
6) Install the dust mopping pad

Insert the three grooves on the back of the dust mopping pad into the dust mopping base and attach the rest part of the dust mopping pad flatly onto the hook and loop of the dust mopping base to form a dust mopping module chamber.



7) Installing dust mopping chamber

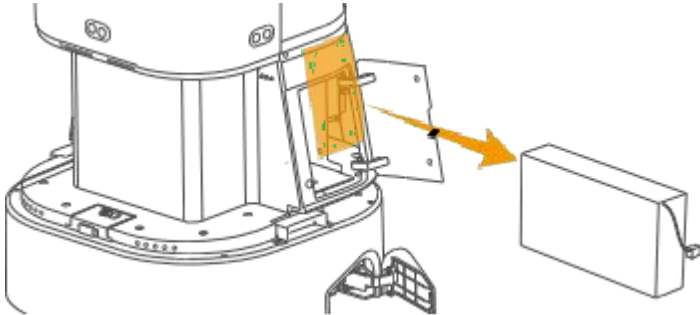
Open the right flip cover at the bottom of the robot and slide the dust mopping module into the groove along the top slide rail.



Tip: Before starting the dust mopping operation, please be sure to complete the above dust pad and chamber installation operations to ensure that the robot can normally work.

8) Battery replacement

Replace the battery when the robot is idle. Turn off the power switch and remove the battery. Afterwards, install a new battery to the battery position inside the battery compartment and turn on the power switch.

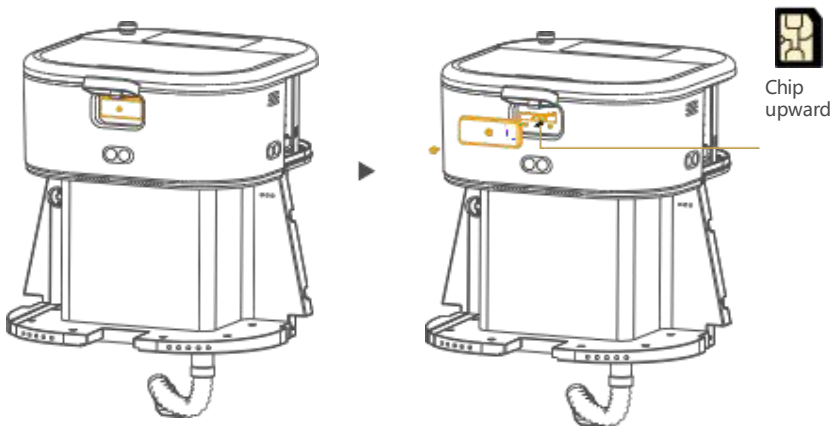


Tips:

- Replacing batteries during the robots automatic cleaning will terminate the current cleaning task, which cannot be resumed.
- The robot will shut down instantly if the battery is replaced when the robot is powered on. Power off the robot before replacing the battery as much as possible.
- Plug version battery, please pull out the plug first when taking out the battery; Buckle version battery, please press the buckle first when removing the battery.

9) SIM card installation

- a. The robot needs to be powered off before installing the SIM card, so please shut down the power first and make sure the robot is in shutdown state.
- b. Open the silicone flap on the back shell of the robot head, use a screwdriver to loosen a fixing screw on the protective cover, remove the protective cover, and store the screw and protective cover.
- c. Align the chip upward with the sim card slot as shown in the figure and insert the chip into the sim card slot.



- d. Finally, re-align the protective cover, lock the screws, and cover the silicone flap.

Tips:

- Remove or install the sim card, please make sure that the robot is turned off.
- If the sim card is not installed, the device may be offline and the mobile app cannot be used to operate the robot. In this case, you can use the man-machine interface or web tool software to operate the robot.



10) Matching remote control

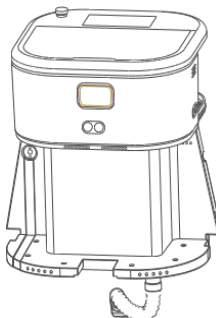
- a. The machine needs to be turned on before matching, while meantime the remote control needs to be in shutdown status.
- b. Open the silicone clamshell at the back of the machine head, use a screwdriver to loosen a fixing screw on the protective cover, remove the protective cover, and store the screw and protective cover.
- c. Press the receiver button with the auxiliary tool, and you can see that the indicator light of the receiver flashes quickly. At this time, turn on the remote control and the indicator light returns to steady on, that is, the code alignment is completed. (Check the upper face of the diagram to see the receiver indicator, and the lower face is the reset button of the receiver).



- d. Finally, re-align the protective cover and lock the screws to fix it. Cover the silicone flap tightly.

Tips:

- When there is remote control connection problems, please repeat above steps to rematch.
- When pressing the receiver button of the remote control, it is recommended to press it gently with a fine-headed tool to avoid damage to the shell or receiver.



4. User Guidance

1) Power on/off

Press the power button on the battery compartment on the robot side to power the robot on. The button light will turn on if the robot is powered on successfully. At this point, a boot screen will be displayed on the touch screen. When the robot is not being charged after it is powered on, pressing the power button in the battery compartment door, or directly removing battery will power the robot off. At this point, the power button light and screen will be off.

2) Use the remote controller

Press the "ON" button on the remote controller to turn on/off the remote controller. The red power light will turn on after the remote controller is powered on and will turn off after the remote controller is powered off. After the remote controller is powered off, press "Automatic/Remote Control 5" on the remote controller to switch the robot from automatic mode to remote control mode. Afterwards, toggle the joystick to move the robot forward, backward, and rotate left and right.

Tips:

- A cleaning task in progress will be automatically paused when the robot is switched from automatic mode to remote control mode and the task will continue only after the robot is switched back to automatic mode.
- Only when the robot is in remote control mode can remote control of cleaning, mapping and planned recording be performed on the robot interface or by using the mobile app.

3) Emergency stop and reset

The moving robot will brake and lock immediately when the emergency stop button is pressed and the top light band will blink slowly in red. The emergency stop button will lock, which can be reset by rotating it clockwise to released mode. After reset, the robot will unlock and the light band will blink in white slowly.

Tip: If a cleaning task is being executed in the automatic state, the task will be automatically paused when the emergency stop is captured. The task will be automatically resumed after the emergency stop is restored.

4) WiFi Settings

Users can turn on the WiFi from the General settings in the onboard interface, searching surrounding available WiFi and inputting passwords. Once connected there will be notifications saying connect on, and there will appear WiFi icon in the interface status bar. When the WiFi is disconnected, it will automatically switch to 4G Internet access, and the 4G icon will be displayed in the status bar of the onboard interface.

Tips:

- Before using WiFi function, please confirm the robot hardware configuration with technician or sales. Only when the hardware configuration supports the WiFi function, can it be set manually.
- Only 2.4GHz Wi-Fi is supported.

To ensure that the robot can access the Internet normally once WiFi is disconnected, please ensure that the SIM card is installed correctly.

5) Robot interface operation

After the robot is powered on and starts up, the screen interface will enter the lock screen password page. After logging in successfully by entering a correct lock screen password, user can operate the robot through the screen interface. The main robot interface functions are as follows:

Robot mode viewing	Mapping and upload	Error alarm
Timed cleaning and distribution of quick cleaning tasks	Remote control of cleaning	Cleaning record viewing
Device update	Device self-check	Voice volume and multi-language

6) Mobile APP Operation

Connect an Android device to the Internet. After logging in the AllyBot app successfully, add a robot by scanning the robot's QR code and use the app to operate the robot. The main mobile app functions are as follows:

Robot mode viewing	Mapping and editing	Message notification & error alarm
Timed cleaning and editing and distribution of quick cleaning tasks	Remote control of cleaning	Download of cleaning records and reports
Remote control (virtual joystick in the app)	Device maintenance	Voice volume and multi-language
Editing of cleaning areas and virtual walls	Power parameter setting	User management

7) Web-End Software Operation

Use a laptop or tablet computer to connect the robot WiFi, open the browser and enter the IP address of the tool software. Users can use the tool software to operate the robot after successfully log in. The main functions of the Web-End software are as follows:

Robot status viewing	Mapping and editing	Map revising
Fine marking and point marking	Plan editing and management	Zoned cleaning
Cleaning task edit and deliver	Download of cleaning records and reports	Device maintenance
Advanced settings	Message notification and error alarm	Map enlargement

8) Mapping with a charging station

When selecting "Mapping" with a charging station", fix the charging station position first and move the robot to the front of charging station to start mapping. Make sure that the robot is in remote control mode during map recording. Set mapping on the robot interface or by using the mobile app and use the remote controller to remotely control the robot to move in a target scene. A high-accuracy map for the scene can be obtained after surroundings are recorded.

9) Mapping without charging station

When selecting "Mapping without charging station", please align the robot front middle position with the ground charging station mark and keep perpendicular to the arrow pointed direction. To create a map, users could set from the robot onboard interface, mobile APP, web-end tools, starting from the pointed position to remote control the robot to walk on the targeted scene. After finishing the scanning it will automatically create a high accuracy map.



Tips:

- When "Mapping with a charging station" is selected, wait until the robot automatically recognizes the charging station. At this point, do not move the robot until it reports recognition results. Start
- recording after successful recognition. If recognition failure is reported, move the robot and re-start mapping.
- When creating or viewing a map, if the long side of the map area exceeds 300 meters, the app/ onboard interface will not load. Please go to the web-end tool software to view the map.

- After map saved, the robot will automatically identify the charging point, no need to manual add.. When choosing mapping without charging station, the robot will automatically “save” the start position as the charging station location; While when choosing mapping with a charging station, the robot will automatically form the charging point (About 0.5m in front of the charging station).
- During recording, make that the robot’ s moving trajectory can cover the target application scene as much as possible.
- During recording, make that the robot’ s moving trajectory can cover the target application scene as much as possible.
- A map has and only one charging point. If the position of the charging point is changed, please be sure to adjust the position of the charging point on the map accordingly. If not, it will affect the positioning and return of the robot.

10) Map fine marking

Users can use the mobile APP or web tool software to divide the polygon function area on the map, including forbidden area, slope area and passable area. Among them, the forbidden area contains polygon, rectangle, circle and line drawing functions, and the passable area and slope area contain polygon and rectangle drawing functions.

Tips:

- Please note: When doing fine map marking, please ensure that each function area does not overlap. If any overlap contains forbidden area, slope area, as well as a passable area, the entire overlapped area shall be regarded as forbidden.
- If not fine marked the map, the robot will plan based on the original map, which may caused the noise point on the original map be filtered .

11) Map area/point marking

Use the mobile app to divide polygonal functional areas on the map, including forbidden areas, carpet areas, and slope areas. At meantime, charging points, water filling points, elevator waiting points, and elevator riding points can be marked on the map.

Tips:

- A map can have only one charging point. If the position of the charging point is changed, please be sure to adjust the position of the charging point on the map accordingly. If not, it will affect the positioning and return of the robot.
- After map is saved, the robot will automatically born the charging point, no need manual adding.
- Set charging points within 0.5-1m at the front of the charging dock and make sure that this area is not blocked by obstacles.
- Set elevator waiting points near the elevator door on the map and elevator riding point at the center of elevator on the map.

12) Map increment

When the scene changes greatly or the map needs to be expanded, you can select a map need updated from the map list of the mobile APP/web-end tool to do map increment. After map incremented, the coordinate system will not change and will not cover the original map points, fine marks, and planning etc. data. Instead it will add a new map , and the default map name will be “_increment00n”. Users can also change the map name by self.

Tips:

- The incremental map will retain the point information, fine marks such as forbidden area and planning data on the original map, but if the map changes greatly, please re-edit fine marks and planning such as forbidden areas.
- After the map is recorded, the newly generated map png, robot trajectory, point cloud information, etc. will be displayed in real time on the basis of the original map.
- When creating incremental maps, make sure that you pass through the original map area; otherwise, maps cannot be merged. (You are advised to start recording from the original map area.)
- During incremental map creation, map merging status is displayed on the interface. When maps are not merged (merging), the real-time map and the original map are misaligned. You are advised to move the recording to the original map.

13) Area divided cleaning

Use the mobile app to divide the robot's cleaning areas or routes on the map or use the remote controller to remotely control the robot to move and record target cleaning areas or routes. After finishing the cleaning area division, the robot will automatically create a full coverage route (rectangular ambulatory shape).

Tip: For a map with a charging station, if the user divided clean area includes a charging station, the robot will automatically avoid the 1m*1m area directly in front of the charging point when planning, so as to avoid the displacement of the charging station.

14) Area divided cleaning

After a cleaning area or route is planned, users can deliver a cleaning task immediately or select any plan in the plan list.

Tips: Before delivery any cleaning task, ensure that the current location of the robot is consistent with the map planned.

15) Cleaning task-Immediate start

When the robot is in the automatic state, click the "Cleaning task" button on the robot interface or the home page of the mobile APP, select the cleaning task to be performed and click the "Start immediately" button, and the robot will clean according to the settings of the cleaning task.

Tips:

- If the battery is too low (less than the low power threshold), the cleaning task will not start. Please charge the battery before starting the cleaning task.
- When the power is too low, the robot will automatically return and charge, and it will resume cleaning from where it suspended when it reaches high power.
- Before delivering the task, ensure that the current location of the robot is consistent with the map planned in the first task.
- Before starting the floor scrubbing/vacuuming operation, ensure that the sewage tank cover, sewage tank, and cleaning tank are installed in place, and that the correct cleaning module are installed to ensure normal floor scrubbing/vacuuming cleaning.
- Before starting the dust mopping operation, make sure that the mopping cloth and dust mopping module are installed in place to achieve normal dust mopping cleaning.

16) Timer Cleaning

You can use the mobile APP or web tool to set the cleaning time, cleaning area, cleaning mode, and cleaning frequencies. You can add multiple tasks and adjust their execution sequence. The robot will automatically start cleaning when it reaches the target cleaning area at the specified time, and automatically return to the charging station to charge after cleaning done.

Tips:

- When reaching the scheduled task start time, the current task will be automatically canceled and execute the scheduled task.
- When adding multiple tasks, ensure that the maps where the tasks are based are connected. For example, when adding a multi-floor task, ensure that the passenger and waiting points have been created on the corresponding maps and are bound to the same elevator.
- When multiple tasks are added, such as adding tasks with different maps on the same floor, the robot cannot execute and the task cannot be saved.

17) Suspended/Continue/Terminate

When the robot is performing the cleaning task, users can click [Pause/Continue] button in the robot interface or the current task page of the mobile APP/web tool software to Pause/Continue the current cleaning or click [Terminate] button to terminate the current task.

Tip: When doing floor scrubbing task, click [Terminate] button, the robot will automatically start self-cleaning, about 5-7s, please wait patiently.

18) Cleaning Modes

The robot has three cleaning modes: floor scrubbing, vacuuming and dust mopping. The floor scrubbing and vacuuming modes have two cleaning strengths: standard and strong, while the dust mopping mode only has one standard cleaning strength. In the automatic cleaning state, the robot works according to the mode and intensity selected by the cleaning task. In the remote-control state, the cleaning mode and intensity can be switched on the robot interface or by using the mobile APP/web tool software.

Tip: The robot operates automatic cleaning according to the cleaning mode and intensity selected by the task, and the mode or intensity cannot be changed while the task is in progress.

19) Remote control cleaning

In the remote control state, the remote cleaning operation can be started on the robot interface or using the mobile app/web tool software, and the cleaning mode and intensity can be changed.

Tips:

- Before starting the floor scrubbing/vacuuming operation, ensure that the sewage tank cover, sewage tank, and cleaning tank are installed in place, and the correct cleaning module are installed to achieve normal floor scrubbing/vacuuming cleaning.
- After the floor scrubbing operation, please click [one-click water absorption] in the robot onboard interface [Remote cleaning] to avoid water residue in the pipeline and water accumulation after quiescence.
- Before starting the dust mopping operation, make sure that the mopping cloth and dust mopping module are installed in place to achieve normal dust mopping cleaning.

20) Troubleshooting and error alarm

The message notification module on the robot interface and the mobile app will send an error alarm prompt in the event of any error during running. At this point, the top light band will blink in red slowly. If it is determined that the error is resolved after self-check and no other errors are received, the alarm will be released promptly, users could check the history alarms in the abnormal alarm lists.

21) Automatic recharge

The robot in automatic mode will automatically return to the charging point for charging if the battery level is too low and can automatically resume the cleaning from where it stopped when a higher battery level is reached; Selecting "Automatic Recharge" on the robot interface or by using the mobile app when the battery level is not too low, and the robot can automatically return to the charging station for charging. The light band will blink in green slowly when the robot is being charge.

Tips:

- The robot cannot recharge automatically in remote control mode.
- If automatic recharge fails for several times, it is recommended to remotely control the robot to return to the charging station for charging using the remote controller.
- When doing floor scrubbing task, click [Terminate] button, the robot will automatically start self-cleaning, about 5-7s, please wait patiently.

Product Specifications

1. Robot

Item	Specifications
Dimensions	503*503*629mm
Weight	Net weight: about 40kg ; Operating weight: about 50kg (with the tank fully filled)
Sensor configuration	2D LiDAR, ultrasonic sensor, and structured light sensor
Moving speed	0~0.8m/s
Water tank capacity	Clean water tank 10L/sewage tank 10L
Cleaning width	440 mm
Cleaning efficiency	800m ² /h
Battery	Lithium iron phosphate battery 25.6V 42Ah
Battery life	5~12h
Charging time	It takes approximate 3h to fully charge a battery.
Network communication	4G/ Wi-Fi
Quick-detaching design	The roller brush, battery, clean water tank, and sewage tank adopt a quick-detaching design.

2. Charging Station

Item	Specifications
Dimensions	302*90*312mm
Maximum power	380W
Rated input	100-240V~50/60Hz 5A 500VA
Rated output	29V-13A

Trouble shooting

1. FAQ

Issue types	Specific issues	Possible causes	Solutions
APP installation on the mobile phone	Fail to install the app on a mobile phone.	*The mobile phone's operating system version is out of update. *The operating system is not Android.	*Update the mobile phone's operation system. *Download the app to an Android system mobile phone.
	Fail to log in and register an APP account.	The app is not authorized to access to network.	Allow the app to access to network in the mobile phone settings.
Robot offline	The app displays that the robot is offline.	*The app cannot be connected to the robot when it is powered off. *The network signal in the robot's location is weak or unstable.	Allow the app to access to network in the mobile phone settings.
Unable to Power on/off the robot	The robot is unable to power on/off after the power button is pressed.	*The robot battery level is too low. *There is an error with the robot power system.	*Move the robot to the charging station to charge or replace the battery. *Contact the customer service staff for handling
Abnormal sound	The robot produces high noise during working.	*The wheels/roller brush is entangled with hair or other foreign agents. *The cleaning module is not installed correctly or the right flip cover of the bottom cleaning module is not closed correctly.	*Check whether the wheels/roller brush is entangled with foreign matter. If abnormal sound persists after cleaning, contact the customer service staff for handling *Reinstall the cleaning module and close the chamber door tightly.
Robot moving error	The robot fails to follow the preset route.	*The robot's LiDAR and structured light sensor surfaces are attached with foreign matter. *The drive motor Triggers over temperature, protection. The robot is skidding.	*Clean the sensor surface with a dust-free cloth. If the issue persists after cleaning contact the customer service staff. *Pause the task and wait until the drive motor temperature returns to normal. *Move the robot to a relatively dry floor for cleaning.

2. Fault Prompts

Onboard screen pop-up texts	Solutions
2D LiDAR error	<p>*If occasionally prompted, this error does not affect normal operation and can be ignored.</p> <p>*If frequently prompted, this error may be caused by a high LiDAR temperature. Power off the robot and let it stand still for a while.</p>
Check the 2D LiDAR for foreign matter	<p>*If occasionally prompted, this error does not affect normal operation and can be ignored.</p> <p>*If frequently prompted, this error may be caused by dirt on the 2D LiDAR surface. Wipe it with a dust-free cloth.</p>
Check the structured light sensor surface for foreign matter.	<p>*If occasionally prompted, this error does not affect normal operation and can be ignored.</p> <p>*If frequently prompted, this error may be caused by dirt on the structured light sensor surface. Wipe it with a dust-free cloth.</p>
IMU Error	<p>*If occasionally prompted, this error does not affect normal operation and can be ignored.</p> <p>*If frequently prompted, this error may be caused by an IMU drive error. Reboot the robot.</p>
Check the ultrasonic sensor surface for foreign matter.	<p>*If occasionally prompted, this error does not affect normal operation and can be ignored.</p> <p>*If frequently prompted, this error may be caused by dirt on the ultrasonic drive surface. Clean foreign matter promptly.</p>
Ultrasonic sensor error	<p>*If occasionally prompted, this error does not affect normal operation and can be ignored.</p> <p>*If frequently prompted, this error may be caused by an ultrasonic drive error. Reboot the robot.</p>
Check whether the has been installed clean water tank correctly.	<p>*The buckles on the left and right sides or at the bottom of the clean water tank are not clamped tightly. Remove and reinstall them.</p> <p>*The clean water tank's copper column and opposite needle surfaces are attached with foreign matter. Wipe and remove it with a dust-free cloth.</p>
The clean water tank's water level is too low. Fill in the clean water tank promptly.	The clean water tank's water level is too low.Remove the clean water tank and fill in water at least to the middle.
Check whether the sewage tank has been installed correctly.	<p>*The sewage tank is not installed correctly. Remove and reinstall it.</p> <p>*The sewage tank's copper column and opposite needle surfaces are attached with foreign matter.Wipe and remove it with a cloth.</p>
The sewage tank's water level is too high. Discharge it promptly.	The sewage tank's water level reaches the limit level. Remove the sewage tank to discharge sewage.

Onboard screen pop-up texts	Solutions
There is an error with the power connection. Check whether the battery has been installed correctly or whether the power switch has been turned on.	<ul style="list-style-type: none"> *The power switch is turned off. Turn on the power switch. *The power plug is not installed correctly. Re-insert it tightly.
Insufficient battery level	The battery level is lower than the low battery level threshold. If the robot does not return automatically, remotely control it to the charging station for charging or replace the battery.
Emergency stop button is pressed	The emergency stop button is pressed. Open the rear flip cover and rotate the emergency stop button to the right for resetting.
Check whether the drive motor is entangled with foreign matter(resulting in over-temperature) .	<ul style="list-style-type: none"> *The drive motor is over-temperature. Power the robot off and let it stand still for a while. *The drive motor is entangled with foreign matter,such as hair. Clean it with tools.
Check whether the drive motor is entangled with foreign matter(resulting in a too high driver bus voltage) .	<ul style="list-style-type: none"> *This is caused by strong pushing or a sudden brake. Let the drive motor stand still and wait until it is enabled again. *The drive motor is entangled with foreign matter,such as hair. Clean it with tools.
There is a lifting error. Stop the lifting motor and wait until it is restored.	The lifting motor is malfunctioning. Wait until it is restored.
Check whether the roller brush is entangled with foreign matter.	The right cover bearing of the roller chamber is entangled with garbage. Use a tool knife to clean up it.
Check whether the air inlet is blocked by foreign matter.	<ul style="list-style-type: none"> *The sewage tank cover float blocks the air inlet. Discharge sewage and put the float back to its original position. *The long sewage suction pipe of the sewage tank is blocked by foreign matter. Use a tool to clean up garbage inside. *The sewage suction port at the bottom roller chamber is blocked by foreign matter. Use a tool to clean up garbage inside.
There is an error with the mapping system. Reboot the device.	There is an error with the software. Reboot the robot.
Mapping failed. Re-try mapping.	<ul style="list-style-type: none"> *For mapping with a charging station, log out and move the robot to the charging station and re-map. *For mapping without a charging station, log out and re-map.

Onboard screen pop-up texts	Solutions
There is an error with the positioning system. Reboot the device.	There is an error with the software. Reboot the robot
Positioning failed. Remotely control the robot to move to the charging station.	Positioning is lost. Move the robot to the charging station.
There is an error with the global planning module. Reboot the device.	There is an error with the software. Reboot the robot.
There is an error with the communication module. Reboot the device.	There is an error with the software. Reboot the robot.
There is an error with the local planning module. Reboot the device.	There is an error with the software. Reboot the robot.
There are too many obstacles around. Move the robot to a safe area.	The robot is trapped. Clean up the surrounding obstacles or move the robot.
There is an error with elevator control and the elevator cannot be used .	There is an error with elevator control. Contact Intelligence.Ally Technology custom er service staff for handling.
There is an error with the recharging module communication.	There is an error with the software. Reboot the robot.
Automatic recharge failed. Remotely control the robot for charging.	*The charging station is not powered on. Connect to the charging station power supply. *There are obstacles in front of the charging station. Remove the obstacles or remotely control the robot for charging.
Automatic recharge failed. Remotely control the robot for charging.	*The charging station is not powered on. Connect to the charging station power supply. *There are obstacles in front of the charging station. Remove the obstacles or remotely control the robot for charging.

Cleaning & Maintenance

1. Parts maintenance

Parts Name	Recommended maintenance period
Scrubbing module - Stiff bristle roller brush	To be cleaned once every week and replaced every three to six months
Scrubbing module-Squeegee	To be cleaned after each scrubbing and replaced every three months
Scrubbing module - Filter bag	To be cleaned after each scrubbing and replaced every month
Vacuum module - Soft bristle roller brush	To be cleaned every week and replaced every three months
Vacuum module - dust collect bag	To be cleaned after each scrubbing and replaced every month
HEPA filter	To be cleaned every two weeks and replaced every three months
Dust mopping module - mopping pad	To be cleaned after each dust mop and replaced every month
Sewage tank	To be drained everyday, and cleaned every week

Note: The maintenance period of the above consumables is only recommended, specific changing period relates with the ground dirt situation. Please adjust it according to the actual use.

2. Regular checking

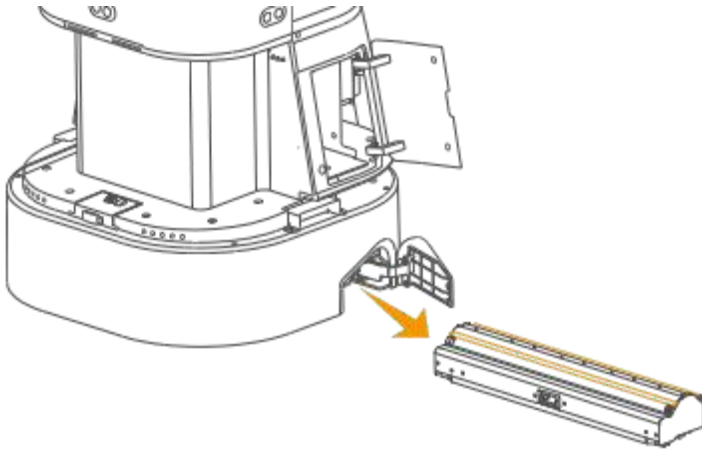
Inspection item	Recommended inspection period
Check the drive motor for foreign matter.	30 days
Check the wheels for foreign matter.	30 days
Check the roller brush for foreign matter.	15 days
Check the roller brush hair for wear and tear.	45 days
Check the bottom cleaning module's sewage suction port for blockage.	7 days
Check the bottom cleaning module squeegee for blockage.	7 days
Check the bottom cleaning module squeegee abrasion	15 days
Check the 2D LiDAR surface for dirt.	30 days
Check the structural light camera sensor surface for dirt.	30 days
Check the HEPA for dirt.	15 days
Check the sewage tank's sewage suction pipe for blockage.	30 days
Check the clean water tank's filter for blockage.	30 days
Cleaning/sewage water sensor pin/copper column abrasion(surface dirt)	15 days
Cleaning/sewage water sensor pin/copper column activity.	15 days

Tips:

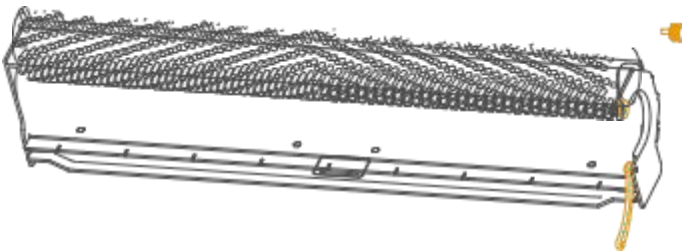
- During the regular inspection, if any foreign matters or dirt are found, timely use the appropriate tools to clean up or directly replace the parts.
- The above listed check period is only for reference, please adjust the period according to the actual usage.

3. Daily maintenance

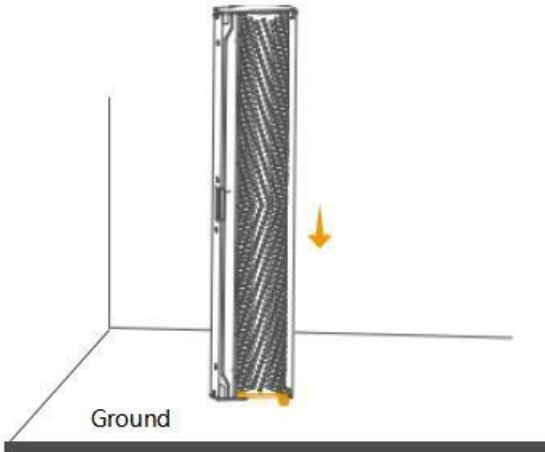
- 1) Roller brush *Suggested cleaning once per week
- a. Turnover the bottom cleaning module cover, pull out the module along the top rail.



- b. Remove the screws on the module limit bar, and save the screws carefully.



- c. Follow the arrow direction to hit downwards the module to take out the roller brush.
- d. Remove residual foreign matters or entangled hair in the roller brush and scrubbing module/vacuum module, or directly replace the roller brush with a new one.

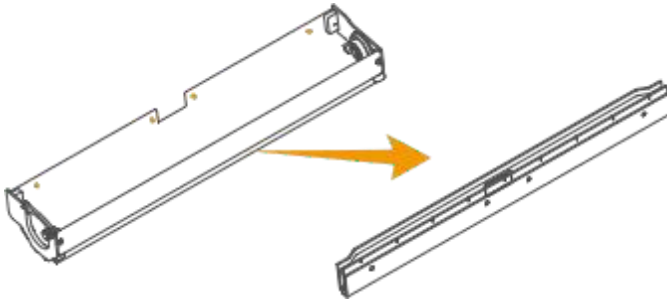


- e. Reload the roller brush to the module, users can in reference the steps guidance in "Installation of roller brush".

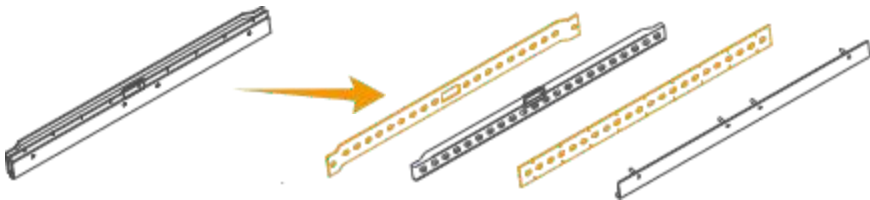
Tips: For a better cleaning effect, it is recommended to replace the roller brush per three to six months.

2) Squeegee *Suggested to clean after done every cleaning task

- a. Detach the cleaning module, check the squeegee and clean away the residues, if needed please replace with a new one.
- b. To replace the squeegee, please first remove the four screws, then take out the squeegees.



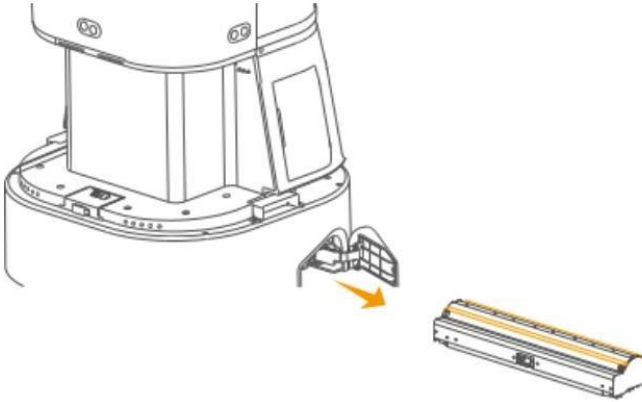
- c. Remove the front and back squeegees from the limit holes, turn them up and down or back and forth (or replace them directly).
- d. Insert the front and back rubber strips back to the limit holes in the original positions to form a new squeegee.
- e. Place the squeegees back into the floor scrubbing module in its original position and lock the four fixing screws.



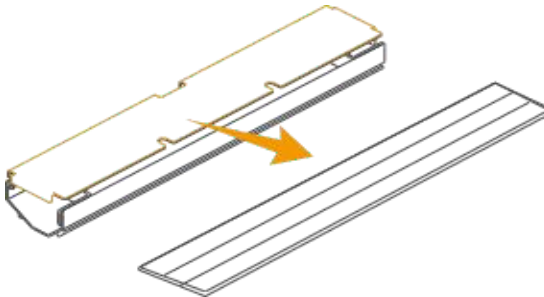
Tip: The squeegee rubber strip can be used for 3 more times after being turned up and down or back and forth. It is recommended to change its direction after 1 month and replaced with new one after 4-6 months to ensure the cleaning effect.

3) Mopping pad *Suggested to clean after every mopping

- a. Turnover the bottom cleaning module cover, pull out the module along the top rail.



- b. Turn over the dust mopping module and gently tear up the hook and loop on the dust mopping pad, then take the dust mopping pad out from the three grooves on the back of the dust mopping base to remove the dust mopping pad.
- c. Shake off the attachments on the pad, then wash and dry it.



- d. Paste the clean or new dust pad back to the module, users can in reference the steps guidance in “Installation of mopping pad”.

Tip: It is recommended to replace the mopping pad per month to assure the cleaning effect.

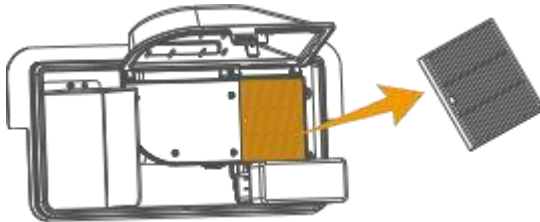
- 4) Filter bag/Dust collect bag *Suggested to clean after done every cleaning tasks
- a. Remove the sewage tank cover and loosen the filter bag' s pull rope under the sewage tank bellows, then remove the filter bag.
 - b. Clean it with clean water and dry it. Or, replace it with a new one. Afterwards, put the clean filter bag back and tighten the pull rope.



Tip: It is recommended to replace the filter bag every month to ensure the cleaning effect.

5) HEPA filter *Suggested cleaning every two weeks

- a. Turn over the removed sewage tank's upper cover and loosen the buckle of the HEPA filter flip cover, then turn over the flip cover.
- b. Take out the HEPA filter and clean it with clean water, then dry it. Or, replace it with a new one. Afterwards, put the clean HEPA filter back and fasten the flip cover.



Tips: For a better cleaning effect, it is recommended to replace the HEPA filter every three months.

Warranty

1. Warranty Scope and Warranty Period

If any damage or performance fault not caused by user error is found after receipt of the robot, and within the warranty period, the user may apply for warranty service by providing:

- a valid proof of purchase.
- a completed warranty card.

After testing and confirming, Robo-Tek will handle the warranty service.

Refer to the table below for the warranty periods of the entire device and its parts:

Name	Warranty item	Warranty period
Entire device	*Robot body; *Charging pile (station)	1 year
Core modules	*Navigation-related core components. *Drive-related core modules	3 years
Consumables	*Roller brush; *Water-absorbent rubber strip. *Filter bag/Dust bag. *HEPA filter. *Dust mopping pad.	Not covered

2. Paid repair services

The following circumstances are not covered by free warranty service. If necessary, charged repair can be provided:

- 1) The product damage is caused by improper use, maintenance, or storage by the user;
- 2) The damage is caused by disassembly or modification by a person not authorized by Robo-Tek;
- 3) The certificate for repair, replacement and refund is not presented or the warranty has expired;
- 4) The model on the warranty card does not match with the actual model to be repaired or the certificate is altered;
- 5) The damage is caused by force majeure, such as natural disasters and unexpected factors.

If you encounter any problem during using the product, please contact Robo-Tek customer service staff by the following ways:

- After reviewing the trouble shooting tips, identify the error message
 - call the service hotline 03 9357 5662, or
 - email service@Robo-tek.com.au and provide copies of the proof of purchase and warranty card.

Robo-Tek will arrange a customer service specialist to answer any question you have during using the product.