
PUDU MT1 Operation Guide

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Model: MTBC01

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Purpose





This manual introduces how to use and maintain the PUDU MT1. It is intended for users, sales personnel, technical support engineers, and installation and commissioning engineers.

Revision History

Date	Revision History
2026.02.27	Initial release

Symbol Conventions

The following symbols may appear in this manual, and their meanings are as follows.

Symbol	Description
 Danger	Indicates a high potential hazard that, if not avoided, will result in death or serious injury.
 Warning	Indicates a moderate or low potential hazard that, if not avoided, could result in minor injury to personnel, damage to the robot, etc.
 Caution	Indicates a potential risk that, if these texts are ignored, could result in damage to the robot, data loss, or unpredictable results.
 Notes	Indicates additional information to the main text, emphasizing and supplementing the main text.

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1、 Intended Use



The PUDU MT1 robot is a professional sweeping robot targeted at large scenarios, supporting autonomous charging. The core advantage of the product lies in its ability to meet the cleaning needs of various hard floors. Its main target scenarios are indoor environments with large debris, such as warehousing and logistics, factories, home furnishing and building materials malls, airports, and stations. While reducing costs and increasing efficiency for customers, it improves the cleaning quality of the overall environment.

2、 Safety Instructions

2.1 Usage Precautions

1. This product is a wheeled automatic cleaning robot, limited to use in flat indoor environments. Do not use it outdoors (such as open balconies), on rugged grounds (such as stairs), or in environments above 40°C or below -10°C.
2. Cannot be charged below zero degrees Celsius (the robot automatically protects and cannot be charged).
3. Charging in dynamic temperature environments (e.g., medium-temperature cold storage, working inside, charging outside the cold storage) requires corresponding software versions. If the robot enters the wrong position accidentally due to obstruction or other factors, please pause the task in time and push it to the correct route before continuing the task.
4. Do not drag the robot during operation. If you need to push or move the robot, please tap the screen to pause it first.
5. Do not push the robot in reverse while it is powered on.
6. Do not block the robot's sensors, otherwise it may cause abnormal movement or loss of positioning.
7. Do not pat the device or forcefully press/knock on the screen, otherwise it may cause damage to the device.
8. Do not place loads on the robot, do not place open flame stoves, and do not place any combustible solids,

gases, or liquids.

9. Do not make temporary setting adjustments while the robot is moving. All operations should be carried out after tapping the screen to pause the robot's driving.
10. Cleaning and maintenance work are prohibited while the machine is powered on and running.
11. Before use, please put away various wires on the ground in the environment to avoid dragging during the host's operation.
12. For safety, please ensure the robot runs at a speed of 1.2m/s or below. Playing and fighting in front of the robot is prohibited to avoid unnecessary injuries. The robot has an automatic obstacle avoidance function, but there are blind spots in recognition. Therefore, it is strictly prohibited to suddenly block the robot while it is traveling at high speed, otherwise it may cause safety accidents.
13. When transporting the robot, be sure to empty the trash in the dustbox. Tilting the machine is strictly prohibited during transportation, otherwise the body may be damaged.

2.2 Environmental Precautions

1. This robot is suitable for flat ground environments. It is not suitable for use in environments with steps, excessive slopes, or overly tight spaces.
2. It is not recommended to use the robot on heavily oil-stained floors.
3. Debris such as power cords scattered on the ground may trip or entangle the robot. Please remove them before use.
4. When using this product with obvious ground protrusions such as thresholds, please ensure the height of the protrusions is within 20mm.
5. The optimal passage width for the robot should be greater than 75 cm; for long corridors, a width greater than 80 cm is recommended for the best fluid movement.



Ground Conditions	Illustration
<p>The maximum climbing angle designed for the robot is 8° (in non-cleaning status). To prevent potential risks caused by the robot slipping backwards, you should avoid pausing the machine while the robot is going uphill.</p>	
<p>The robot only supports cleaning operations on flat surfaces. Do NOT perform cleaning tasks on visible slopes exceeding 3°.</p>	
<p>Environments with solid black surfaces (e.g., baseboards), mirrored surfaces (e.g., walls), or full transparency at a height of 14–22 cm may interfere with lidar reflections, causing abnormal navigation. These scenarios require assessment by technical support and may necessitate site modifications, such as applying stickers, to ensure proper reflection.</p>	

2.3 Power Supply Precautions

1. Fully charge the robot to 100% before its first use.

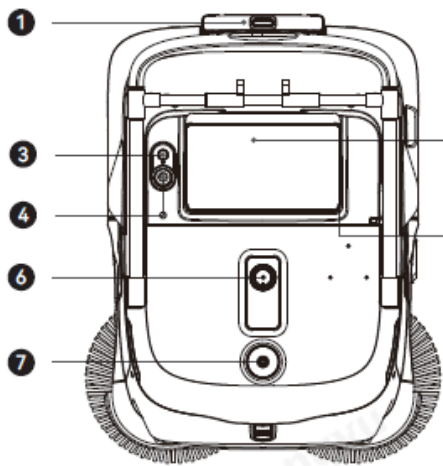
-
2. To ensure operational efficiency and battery longevity, always maintain the battery level above 10%.
 3. When the battery drops below 10%, the robot enters a low-battery state and must be charged as soon as possible.
 4. When the battery drops below 2%, it enters battery protection mode; the robot will be unable to perform tasks and must be recharged before use.

3、 Product Components

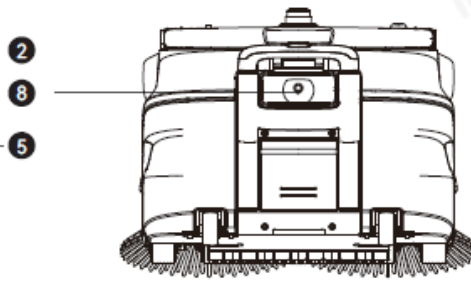
3.1 Packing List

Main unit x 1, Charger x 1, Sweeping side brush x 2, Sweeping roller brush x 1, "PUDU MT1 User Manual" x 1, Certificate of Conformity x 1, Positioning code x 1, Warning flagpole x 1.

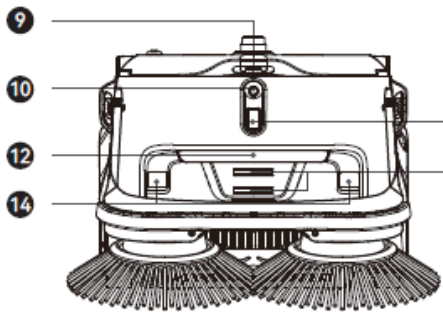
3.2 Appearance and Parts



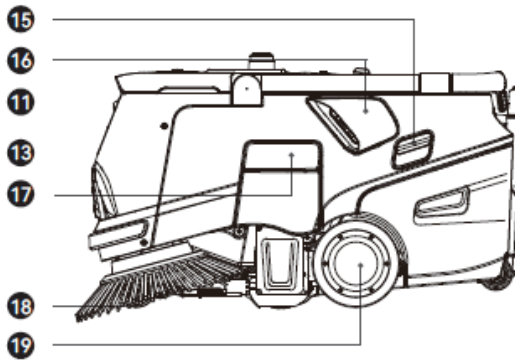
Top view



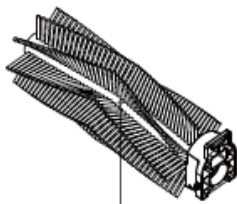
Back view



Front view



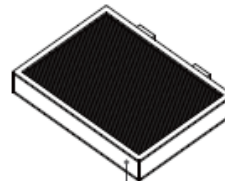
Side view



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Accessories

No.	Description
1	Handlebar / Handrail
2	LCD Screen
3	Power Button (On/Off)
4	Emergency Stop Switch
5	Screen Protector / Screen Cover

6	LiDAR
7	VSLAM Camera
8	RGB Camera
9	RGB-D
10	RGB Camera
11	Line Laser Sensor
12	Fill Light
13	Charging Electrode / Charging Contact
14	Line Laser Sensor
15	Dust Scraper Handle
16	RGB-D
17	Charging Port Cover / Flip Cover
18	Universal Wheel / Caster
19	Driving Wheel
20	Roller Brush / Main Brush
21	Side Brush
22	Air Filter
24	Side Brush

3.3 Performance Parameters

Product Features	Description
Product Model	MTBC01
Working Voltage	DC 23V~29.2V
Power Input	AC 100 V ~ 240 V, 50/60 Hz
Power Output	Max: 29.2 V, 20 A
Battery Capacity	45Ah
Charging Time	Approx. 3h
Runtime / Battery Life*	4-8h
Cleaning Capacity	Paper scraps, plastic film, and other debris
Net Weight	Approx. 75kg
Dimensions	840600490mm

Housing Material	PC+ABS
Screen Specifications	10.1-inch LCD Screen
Navigation Method	LiDAR and Vision Fusion Positioning
Cruising Speed	0.2 m/s ~ 1.2 m/s (Adjustable)
Operating Noise	<75 dB
Minimum Passage Width	75 cm
Maximum Obstacle Clearance Height	20 mm
Maximum Climbing Angle	8°
Maximum Gap Width	30mm
Cleaning Width (including side brushes)	Approx. 70cm
Dustbin Capacity	Approx. 35L
Operating System	Android
Communication Network	Supports 4G, Wi-Fi, Bluetooth, Lora or 2.4G (Optional)
Mobile App	Supported
Operation Mode	Manual Mode, Auto Mode
Automatic Charging	Supported (Charging station required)
Operating Environment (including charging)	Temp: 0°C ~ 40 °C; Humidity: ≤ 90% RH
Storage Environment	Temp: -20 °C ~ 70 °C; Humidity: ≤ 90% RH
Operating Altitude	< 2000 m
Applicable Flooring	Polished concrete, epoxy resin, rubber, regular masonry, ceramic tile, and other hardened floors
Protection Rating / IP Rating	IPX3

(* The battery life of each cleaning mode is calculated under the standard gear, with the battery level from 100% to 10%.)

4、Product Usage

4.1 Power On, Power Off, Pause, Start

4.1.1 Power On, Power Off

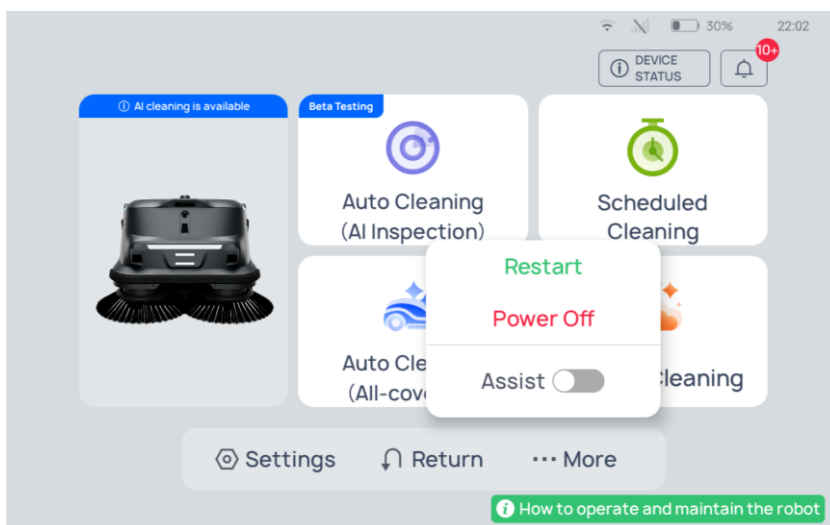
Power On:

Press and hold the power button for about 3 seconds, the bottom strip light will show blue.



Power Off, there are 2 methods:

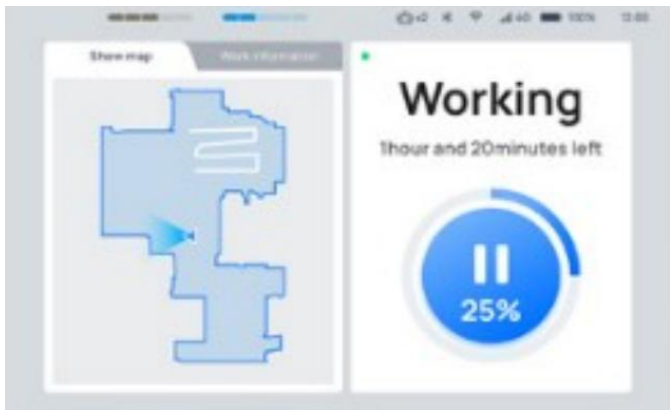
- 1) Press and hold the power button for about 10 seconds to start the power off operation. A black screen indicates successful power off.
- 2) Tap "More" on the home page to select "Power Off" or restart the robot.



4.1.2 Pause

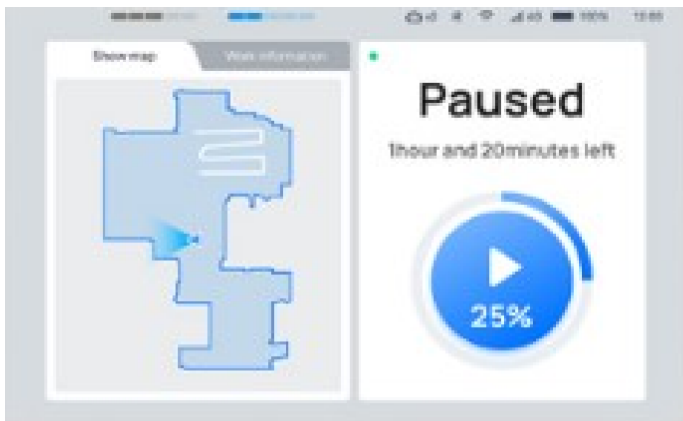
During the robot's Auto-Cleaning operation, touch to wake up the screen, and tap the Pause button to stop

the robot.



4.1.3 Start

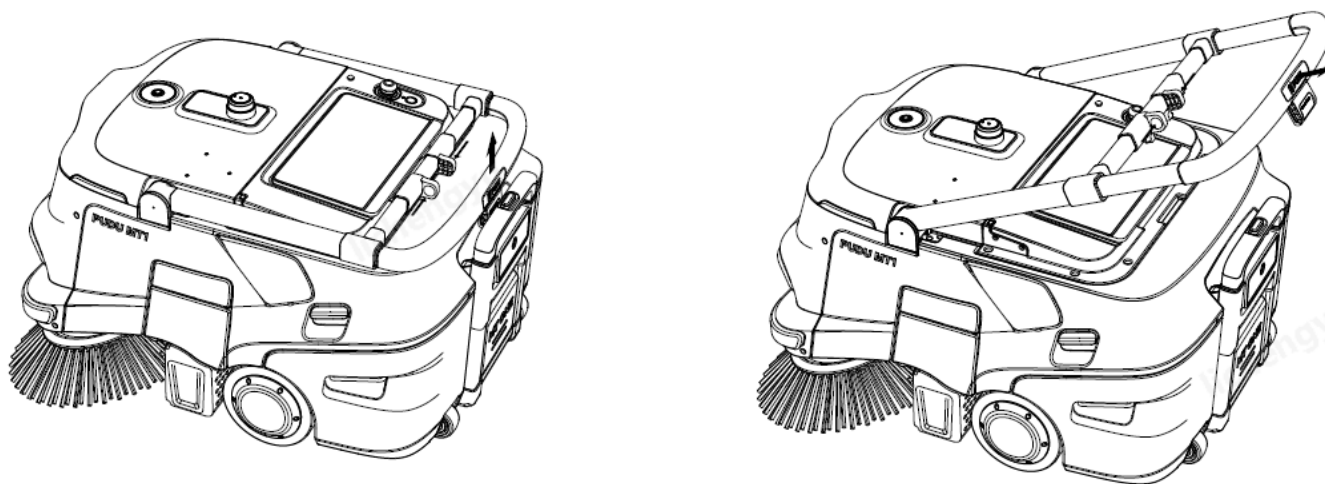
If you need to continue running, tap the Start button on the screen, and the robot will resume the task.



4.2 Handle Usage

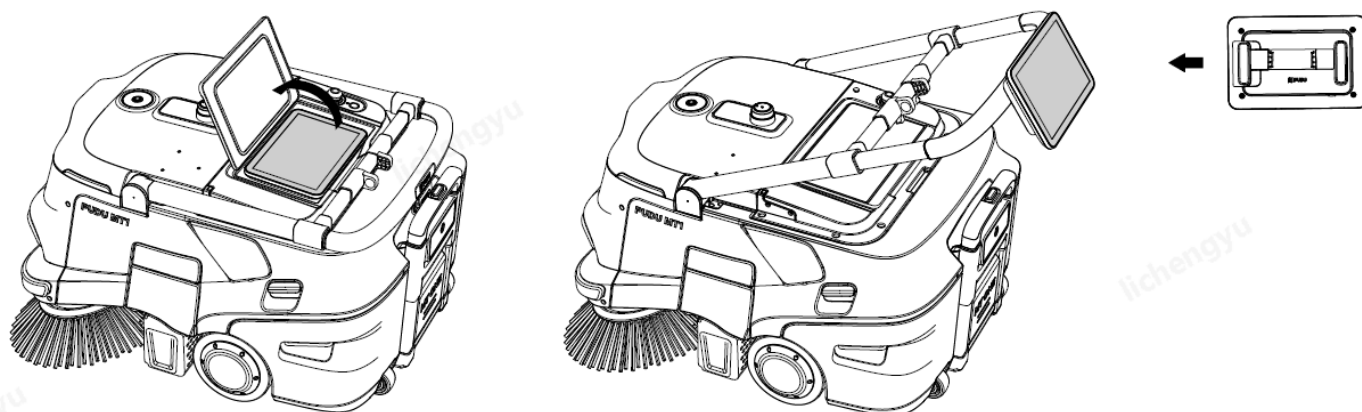
When you need to push the robot, please lift the handrail.

When the robot is idle or operating automatically, please put the handrail down.



When you need to operate the screen, you can open the protective cover and operate it directly, or

detach the screen from the top of the body and hold it or fix it on the handrail to operate.

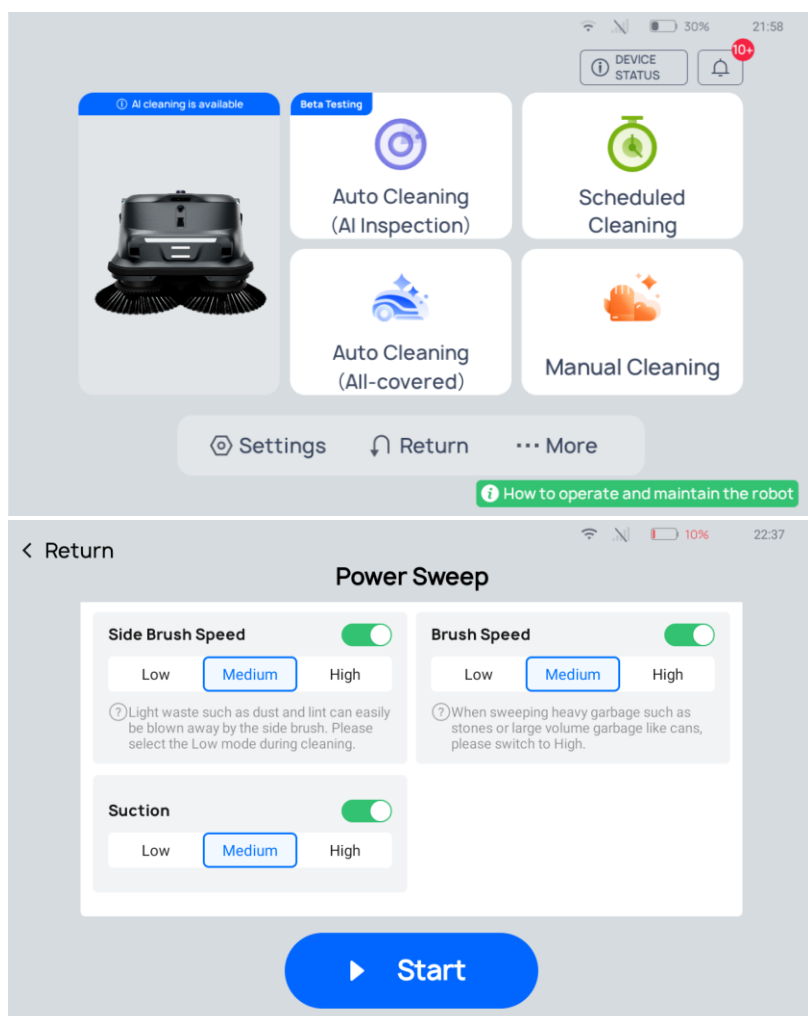


* The robot handle and screen feature a detachable design.

4.3 Work Modes

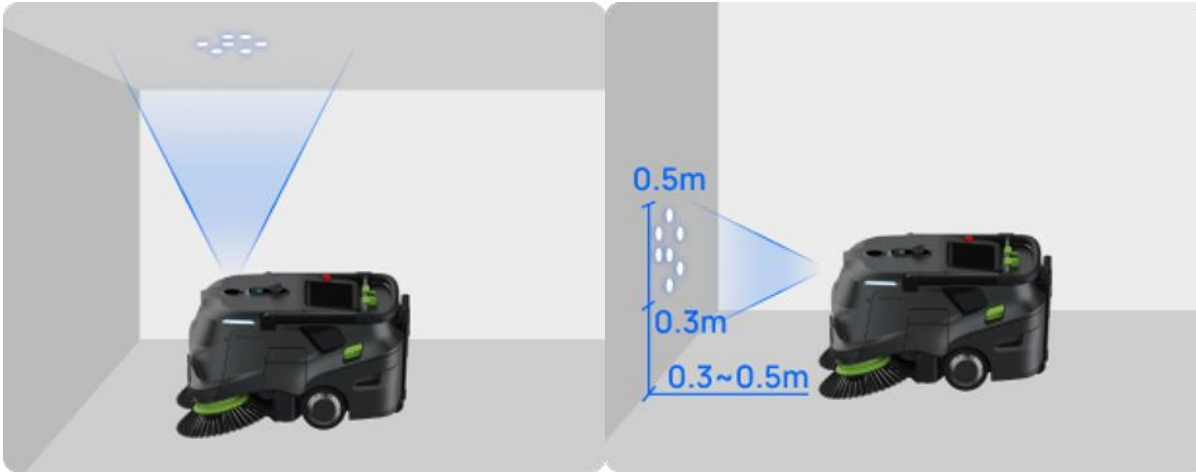
4.3.1 Manual Cleaning

After clicking "Manual Cleaning" on the homepage, adjust the desired cleaning gear, click "Start Cleaning", and you can push the robot to perform the cleaning task.

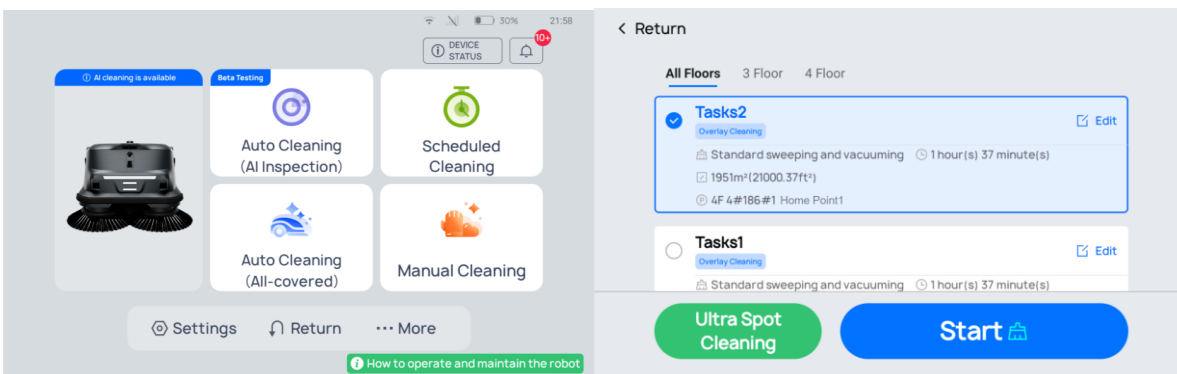


4.3.2 Automatic Cleaning

Before starting an automatic cleaning task, ensure the robot is powered on and positioned directly below or in front of the visual marker (depending on the marker's placement) to ensure successful positioning at the starting point.

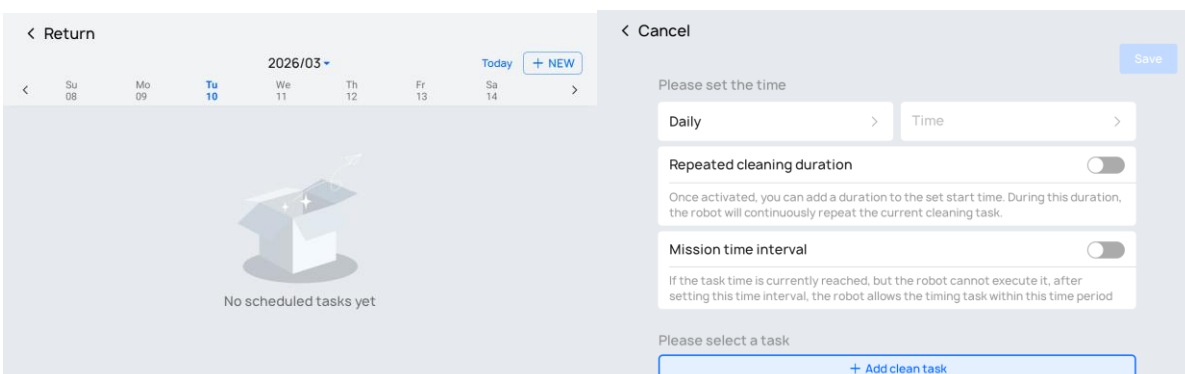


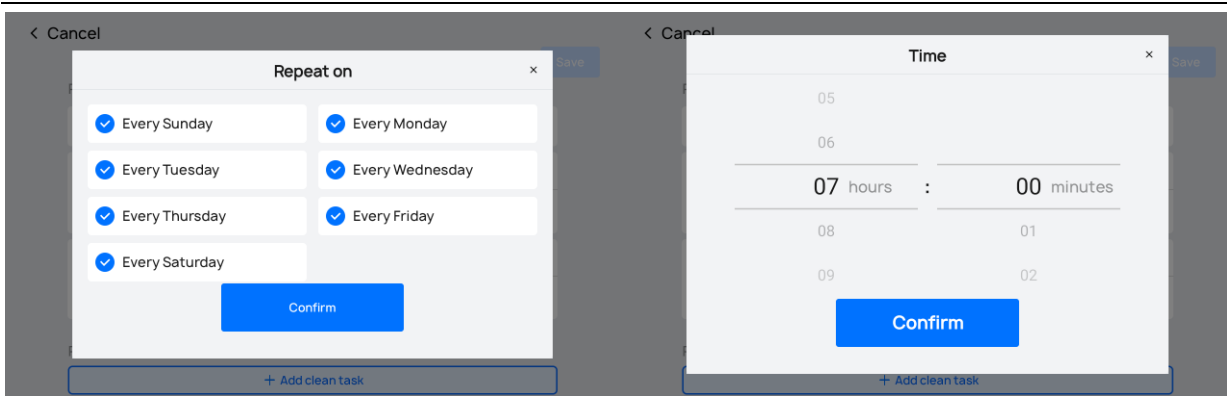
After clicking "Automatic Cleaning" on the homepage, select the cleaning task to be executed (pre-configured by delivery personnel). If no selection is made, the default task will be executed. Click "Start Cleaning" to begin the task. (Note: For automatic cleaning, the handle must be lowered and the screen returned to the screen compartment; otherwise, the task cannot start normally.)



4.3.3 Scheduled Task Settings

The robot supports scheduled task settings. Once configured, the robot will automatically execute tasks at the set time, provided that positioning is normal and the battery level is sufficient.





4.4 Cleaning Modes

The PUDU MT1 robot is an AI-powered sweeping robot designed for large-scale scenarios and ultimate cleaning performance. It uses side brushes to sweep in debris and a roller brush to throw it into the dustbin. Before cleaning, please ensure the robot has the corresponding cleaning components installed:

1. Side brushes
2. Roller brush



4.6 Robot Charging

MT1 supports both manual and automatic charging.

Charging Method	
-----------------	--

Manual Charging

Connect the robot's charging interface to the charging cable. Ensure the body's charging port is connected to the charging cable. If successful, the robot will prompt that it is charging.



Automatic Charging

The robot supports automatic charging, which requires the optional purchase and installation of a workstation or charging pile, deployed according to the corresponding equipment's instructions. Once deployed, the robot can perform fully autonomous recharging throughout the entire process.



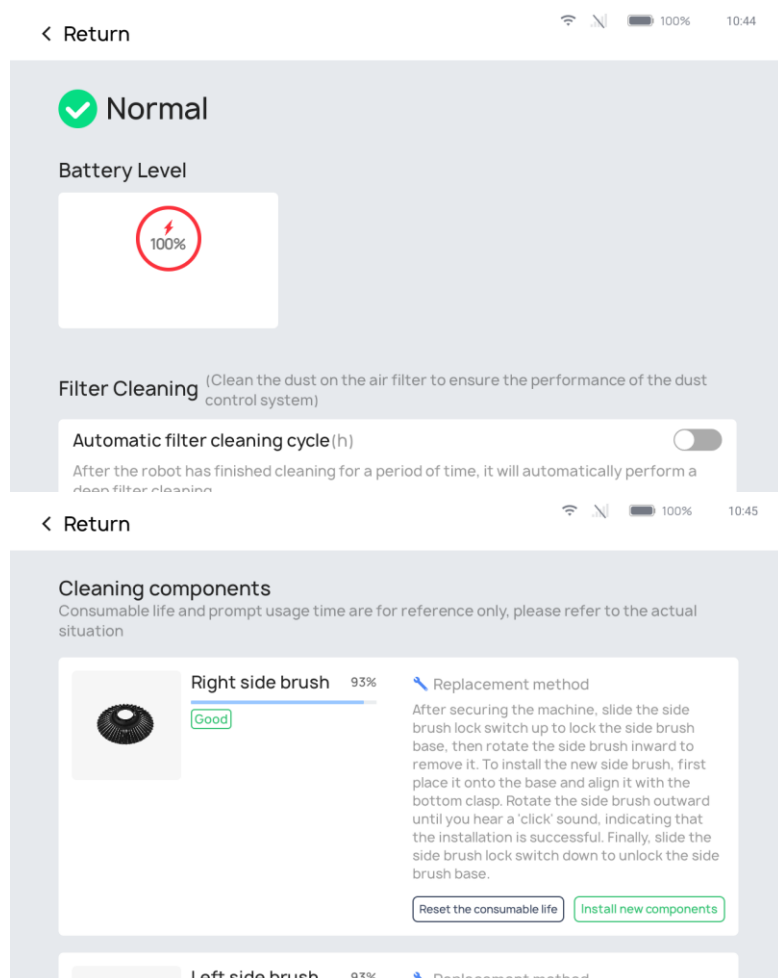
Robot docking with the charging station.



4.7 Viewing Device Status

Tap "Device Status" on the home page to enter the Device Status page.

On this page, you can check the robot's battery level and the remaining usage time of the corresponding consumables.



4.8 Settings

Settable items include the following:

Settings Item	Description
Task Management	Add, modify, and delete cleaning tasks.
Cleaning Report	View records of the robot's past cleaning reports.
Network	Configure network settings and connections.
Map	Create new maps, edit existing maps, etc.
Language	Select the corresponding national language.
Version Upgrade	Check for the latest software version upgrades.
Speed	Set speeds for different cleaning modes; default speed is 0.5 m/s.
Screen Lock Protection	Enable or disable screen lock; modify screen lock password and duration.
Debugging	Adjust internal parameters (accessible only to technical support personnel). The company assumes no responsibility for accidents caused by unauthorized operation.
Voice / Audio	Enable or disable voice broadcasts during cleaning; configure content and volume.
Time	Set the robot's system time.
Version Upgrade	Display and click to update the robot's software version.
Debugging	Adjust internal parameters (accessible only to technical support personnel). The company assumes no responsibility for accidents caused by unauthorized operation.
Others	Other robot settings.

4.9 Common Functions

4.9.1 Cleaning Task Settings

01 Confirm the minimum sum of length and width for RGBD obstacle determination

Based on the site conditions, confirm the sum of the height of common debris and the length and width of low obstacles in the site to ensure that larger debris is not falsely detected as an obstacle.

Obstacles Height Detection Value 7.5cm

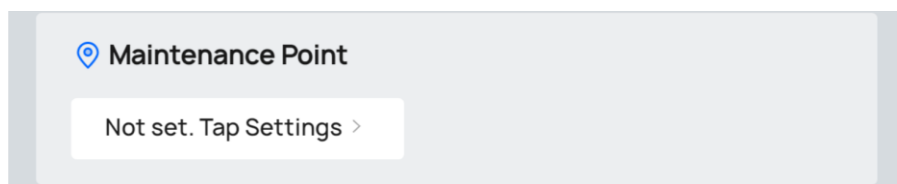
3.0-10.0cm (1.18in-3.94in) 2.95 in

The robot will only classify an object as an obstacle if the height detected by the RGBD is greater than this value... ∨

02 Select maintenance point

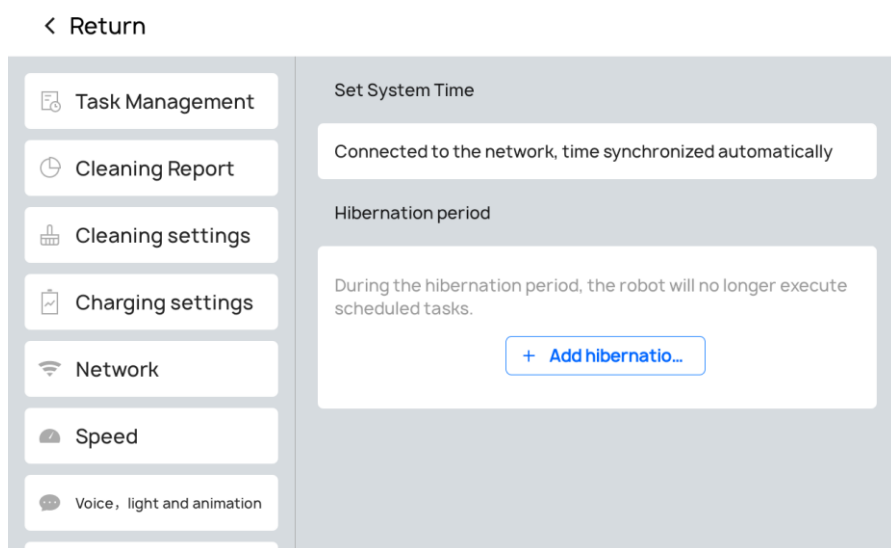
Add maintenance points during mapping, and select them when editing tasks. After setting, when the robot

encounters exceptions or errors where it cannot continue cleaning but can move normally, it can go to the maintenance point automatically and wait for manual assistance.



03 Sleep time period

Supports configuring sleep time on the robot end by date. Scheduled tasks set within the sleep time will not start automatically. Also supports batch setting of sleep time for robots in the same store on Pudulink and merchant platforms.



04 AI Cleaning

(1) Supports recognition of debris and stains with automatic adjustment of cleaning mechanism parameters. In patrol cleaning mode, it supports proactive navigation to identified debris for cleaning; specific types of debris and stains for proactive recognition can be selected from a list.

(2) Supports obstacle recognition and avoidance; specific obstacle types for avoidance can be selected from a list.

AI Cleaning

AI adaptive cleaning

Automatic adjustment of cleaning mechanism parameters based on identified debris during inspection and coverage cleaning processes is available

AI trash and dirt recognition list >

Obstacles recognition

Take effect in all cleaning tasks, the robot will recognize objects in the list as obstacles and go around to avoid entanglement or collision.

Obstacle list >

AI Identification Exemptions

During the cleaning process, the robot may also identify ground

< Return

AI trash and dirt recognition list

Save

Once selected, this type of waste will be identified and cleaned during inspections. If there are frequently occurring types of waste in your area that are not listed, we welcome you to provide feedback to the regional agent.



White paper



Paper box fragments



Plastic film



Beverage bottle



Paper board container



Leaf



< Return

Obstacle list

Save

Effective during cleaning tasks and inspection cleaning tasks, the system will identify obstacles and navigate around them to avoid entanglement or collisions. If there are frequently occurring types of obstacles in your area that are not listed, feel free to provide feedback to your regional agent, and we will consider whether to add these types.



Cable



Shoes



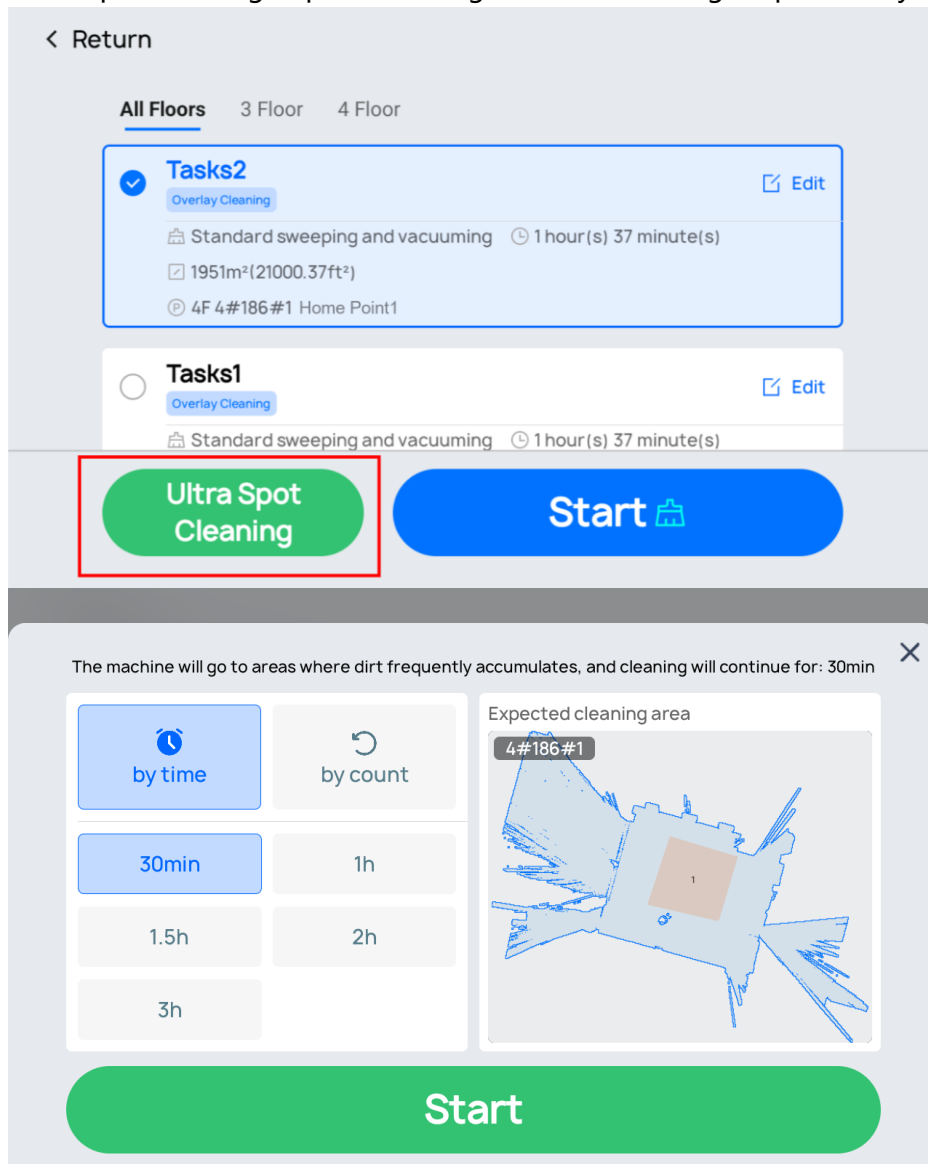
Floor mat



Base



Supports Ultra Spot Clean for automated tasks. Based on debris/stain recognition heatmap data from the task, it performs high-speed cleaning in areas with a higher probability of generating waste.



06 AI Auto/Manual Exemption

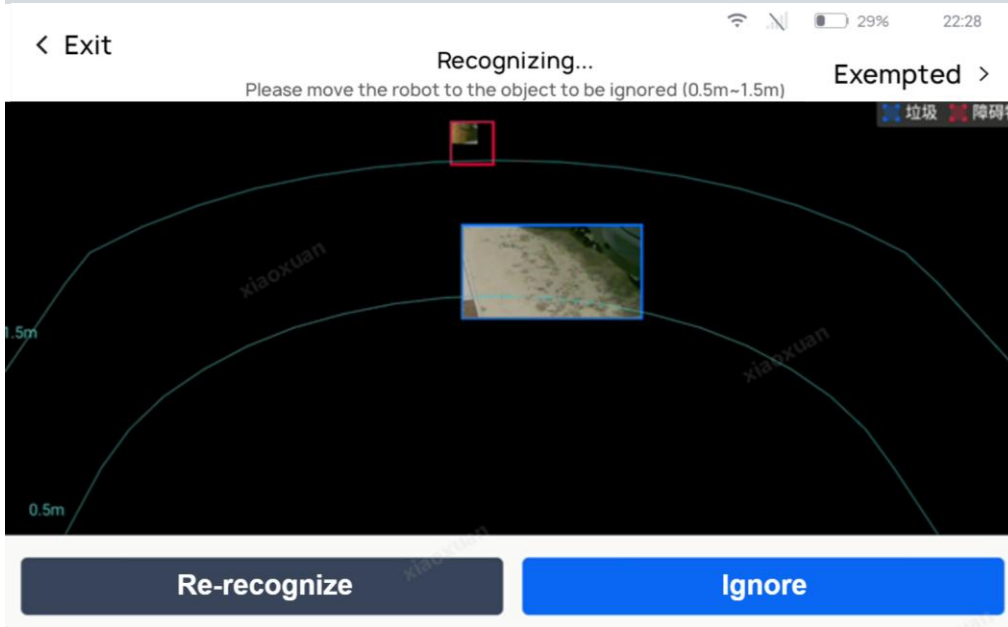
Supports "exemption" processing for floor patterns or designs prone to being misidentified as stains through two methods: manual validation or automatic learning. Once exempted, the robot will no longer trigger false identifications at that location in subsequent cleaning tasks.

AI Identification Exemptions

During the cleaning process, the robot may also identify ground wear, markings, decorations, etc. as dirt. After turning on this function, the targets that have been repeatedly identified as dirty but cannot be cleaned will be automatically exempted. The spot-cleaning and AI adaptive adjustment of cleaning parameters functions will not take effect on exempted targets.

Manual Exemption >

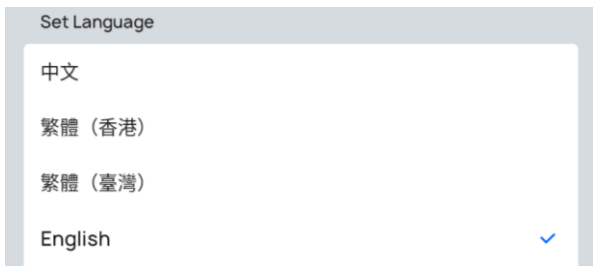
Exempting misidentified trash and obstacles will allow the robot to automatically ignore them during subsequent cleaning, making the cleaning process smoother.



4.9.2 Product Interaction Settings

01 Multi-language Switching

Switch the language of the operating system



02 Metric and Imperial Unit Switching

When enabled, imperial units will be displayed

Units

Display both metric and imperial units concurrently

Default: Off; in the off state, only metric units are displayed. When enabled, both metric and imperial units will be displayed simultaneously.

03 Play voice and music during operation

< Return

Cleaning settings

Charging settings

Network

Speed

Voice, light and animation

Maps

Language and Units

Password and Security

Volume

Voice/Music

Sound Playback Interval(s)

Play voice when cleaning

The robot can play the custom voice while cleaning automatically

Play music when cleaning

The robot can play the custom music while cleaning automatically
No music, please import the music firstly

< Return

Cleaning settings

Charging settings

Network

Speed

Voice, light and animation

Maps

Language and Units

Password and Security

Broadcasting bee sounds during cleaning

When the robot is automatically cleaned, the bee sound can be broadcast

Buzzing sound 1.mp3

Buzzing sound 2.mp3

Play music when returning to the pile

When the robot returns to the pile, you can play music
No music, please import the music firstly

5、Product Maintenance & Troubleshooting

5.1 Daily Cleaning

5.1.1 Cleaning Sensors and the Underside of the Robot

Sensors are the robot's eyes. If they are obscured by dust, the robot will clean blindly; therefore, regular cleaning is required.

Cleaning	Wipe with a soft, clean cloth
----------	-------------------------------

Method	
Period	3-5 weeks
Body Sensor Diagram	

5.1.2 Cleaning the Dustbox and Air Filter

Accumulation of garbage and dust can breed bacteria and affect cleaning effectiveness. Please clean it in time.

Cleaning Method	<ol style="list-style-type: none"> 1. Dustbox: Take out the dustbox to empty the garbage when it is full or regularly. 2. Air Filter: Use the dust scraping handle for daily cleaning. Put a garbage bag over it and pat it gently on a regular basis. Replace it directly if it is too dirty. Washing with water is not recommended.
Period	Clean every 2 days, or clean once or multiple times a day depending on the degree of dirt.
Cleaning	Dustbox

Illustration



Fan Filter

(1) Manual Dust Shaking



(2) Remove and Clean



5.1.3 Cleaning the Side Brush and Brush

Hair and fine fabrics will entangle on the side brush and brush during operation. Failure to clean them for a long time will affect the cleaning effectiveness and even the service life of the motor.

Cleaning Method	Use a brush or hands to clean the side brush and brush, and remove tangles.
Period	Clean every 2 days, or clean once or multiple times a day depending on the degree of dirt.
Cleaning Illustration	<p>Side Brush Cleaning</p>  <p>Roller Brush Cleaning</p>



5.2 Consumable Replacement

Part Illustration	Location	Part Name	Maintenance Method	Maintenance Period
		Side Brush	Clean	1 time/day
			Replace	6-12 months
		Brush	Clean	1 time/day
			Replace	6-12 months
	 	Air Filter	Scrape Dust	1 time/day
			Clean	1 time/day
			Replace	3-6 months
		Front Rubber Strip	Replace	6-12 months
		Rear Rubber Strip	Replace	6-12 months

(The replacement timing for the aforementioned consumables can be determined by referring to the "Consumables" status page on the robot's status screen.)

5.3 Troubleshooting

Fault	Troubleshooting Steps
Unable to power on	<ol style="list-style-type: none">1. Check if the robot's battery is too low, and use the power adapter to charge the robot;2. If the power adapter cannot charge, the battery may be exhausted (left for more than 30 days), take out the battery and use the battery direct charging cable to charge the battery.
Unable to sweep garbage	<ol style="list-style-type: none">1. Check if the dustbin is full. If so, pull out the dustbin and empty the debris before proceeding operation.2. For heavier debris, the side brush gear can be adjusted to "Powerful" mode.
Garbage being scattered	If the debris is lightweight and being blown away by the airflow from the side brushes, the side brush gear can be adjusted to "Eco" mode.

After-Sales Policy

Shenzhen Pudu Technology Co., Ltd. promises to provide free product warranty services starting from the date of product activation within the valid warranty period (warranty periods may vary for different components), and customers are not required to pay after-sales service fees. For cases exceeding the warranty period or not falling under the free warranty service, fees will be charged according to standard prices. Customers should contact the official after-sales service hotline to arrange repairs.

Pudu Technology will provide warranty service if the following conditions are met::

1、 Within the product warranty period:

- 1) Non-human quality issues occur under normal use.
- 2) No unauthorized disassembly or repair; no water or foreign object ingress; no collision or drop.
- 3) The product serial number, factory labels, and other markings show no signs of tearing or tampering.
- 4) Valid proof of purchase, receipts, and order numbers are provided.
- 5) Damaged spare parts replaced during the warranty period belong to Pudu Technology.

2、 Pudu Technology will charge for repairs in any of the following situations:

- 1) The product exceeds the warranty period.
- 2) The product serial number, factory labels, or other markings are torn, tampered with, or unrecognizable.
- 3) Quality issues caused by collisions or burning not resulting from the product's own quality, or ingress of foreign objects (water, oil, sand, etc.).
- 4) Damage caused by unauthorized modification, disassembly, opening of the shell, or repairs not guided by official instructions.
- 5) Damage caused by incorrect installation, use, charging, or storage not in accordance with the product

manual and installation guide.

- 6) Damage caused by using cleaning detergents not specified in official instructions.
- 7) Failure of accessories or components other than the main warranty parts.
- 8) Faults or damage caused by force majeure (such as earthquakes, fires, or wars).

After-sales Service Consultation:

If you have any questions, please contact Pudu Technology Headquarters:

Official After-sales Email: techservice@pudutech.com

Official After-sales Hotline: 400-0826-660