



# AOTINGBOTS

Innovator of Smart Cleaning  
Solutions for Industrial and  
Commercial Spaces



# About Commercial Cleaning Robot



# Why should we focus on commercial cleaning robots?

--Higher costs and challenging quality management with human labor

## Human Labor



### Human labor costs keep rising

Per Zippia data, U.S. cleaners had an average annual salary of \$26,500 (hourly: \$12.73) in 2024. In 2025, this rose to \$28,075 annually (\$13.5 hourly), with average increases of ~5.94% (annual) and 6.05% (hourly). In addition to wages, additional costs such as social security contributions, training expenses, and overtime pay also need to be borne.



### Poor workforce stability and high risks

The cleaning industry has a high turnover rate (annual turnover exceeding 20%), which easily leads to fluctuations in cleaning quality. Meanwhile, manual cleaning is prone to incidents such as slips and injuries from handling heavy objects, forcing enterprises to bear high compensation costs.



### Uniform quality standardization is hard to achieve.

Due to individual differences among manual workers, their work attitudes are inconsistent, which often leads to issues like "missed cleaning areas and uneven cleaning quality". Moreover, implementing quantitative standards requires significant investment in human supervision costs.

# Why should we focus on commercial cleaning robots?

--Robots deliver cost savings, digital transformation, and enhanced cleaning quality

Enhances cleaning frequency and quality

More consistent cleaning quality

Support 24/7 operation

Upgraded data-driven management



Lower machine & maintenance costs

Reduces human work pressure

No negative emotions

ESG practice implementation

# How do commercial cleaning robots worked?

--Robots use multi-sensors and AI technology to achieve dynamic cleaning tasks

- 1 Push the robot around the building and scan to create a map via Lidar (implemented or assisted by technical engineers).
- 2 Set cleaning tasks in the corresponding area and generate a cleaning path plan (such as when to clean which area and the cleaning intensity, etc.).
- 3 The cleaning structure starts working and cleans the floor by means of sweeping, suction, wiping, mopping, etc.
- 4 During the cleaning process, the robot relies on combined sensors to identify and avoid obstacles.
- 5 Regularly push cleaning task reports to check the completion status of cleaning.
- 6 Periodically clean the robot's dustbin, dust bag, brushes, and so on.

# Sales Volume and Product Categories of Cleaning Robots

--Market Split Between Waterless and Scrubber cleaning robot Types



## Waterless Cleaning Robot

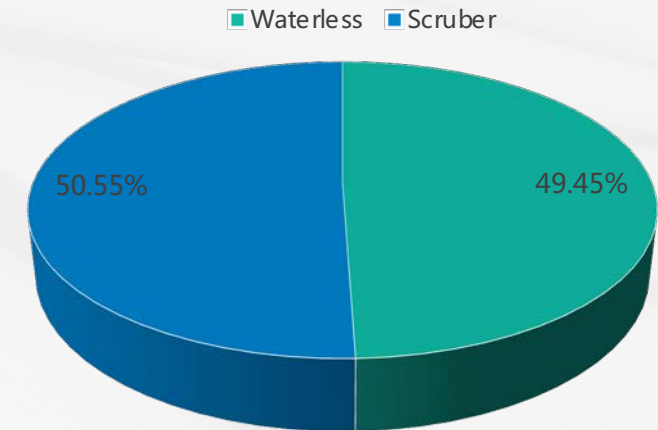
Waterless commercial cleaning robots that achieve cleaning by means of physical sweeping, suction, scrubbing, etc. They require no water or cleaning agents throughout the entire process and only remove contaminants such as surface dust and debris through physical action.



## Scrubber Cleaning Robot

Scrubber commercial cleaning robots with floor mopping function, which have the core functions of floor mopping, floor wiping, and water absorption & recovery. They are standard-equipped with a water tank (for storing clean water) and a suction rake (for collecting dirty water)

## Global Market share of commercial cleaning robots in 2025E

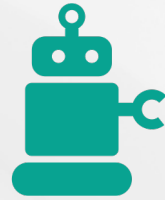


The global sales volume of commercial cleaning robots is expected to reach **518.50 million** US dollars in 2025, among which scrubber robot and waterless robots will each account for half of the market based on user preferences.

# How to handle the work relationship between robots and humans?

--Core value of commercial cleaning robots: collaborative efficiency over replacement

Robots and humans work in collaboration; there is no direct replacement relationship. Generally, one robot can handle the workload of 0.7 to 1 human worker (the larger the area, the stronger the economic applicability).



Large - area floor cleaning (A cleaning area of 5,000 to 10,000 square meters per day)  
Perform boring and repetitive cleaning tasks  
Provide more frequent cleaning times  
Ensure 24/7 cleaning standby

Supplement the edge cleaning that robots cannot reach  
Focus on high - quality detailed cleaning (such as door glass, etc.)  
Inspect unexpected cleaning situations (such as spilled coffee)  
Regularly maintain robots

~ 60%

~ 40%

Allocation of cleaning area responsibilities between the two parties

# About Aotingbots





Established in September 2019, Aotingbots is part of Dima Robotics Group. Our core team comprises experts and professors from prestigious institutions such as Harbin Institute of Technology, Beihang University, Beijing Institute of Technology, alongside seasoned professionals from the cleaning industry. They possess a deep understanding of the cleaning needs of commercial users and have assembled a team of outstanding talents in the robotics industry.

By focusing on the development and manufacture of commercial cleaning robots, we are dedicated to effectively addressing the cleaning needs of commercial users.

**Mission:** Serving society with technology, crafting cleanliness with intelligence.

**Vision:** Dedicated to providing 'Cleaning+' intelligent solutions for customers in the commercial and industrial sectors, redefining the standards of the intelligent cleaning industry, and becoming a global leader in the field of cleaning robotics.



Focus on the commercial cleaning sector.

Aotingbots inherits the advanced technology and experience gained by Dima Industry in the field of special vehicle manufacturing. Within the company, it collaborates with special vehicles, real estate, property services, and healthcare to develop core robotics technologies and product applications.



### Special Vehicle

Leading enterprise in China's special vehicle industry.



### Real estate

Leader in community development in China.



### Property services

Independent listing on Hong Kong Stock Exchange (HK.02352) Property Management Company.



### Healthcare and wellness

Chinese national Advanced Unit in Elderly Care Services

# Aoting solves the pain points of commercial cleaning robots

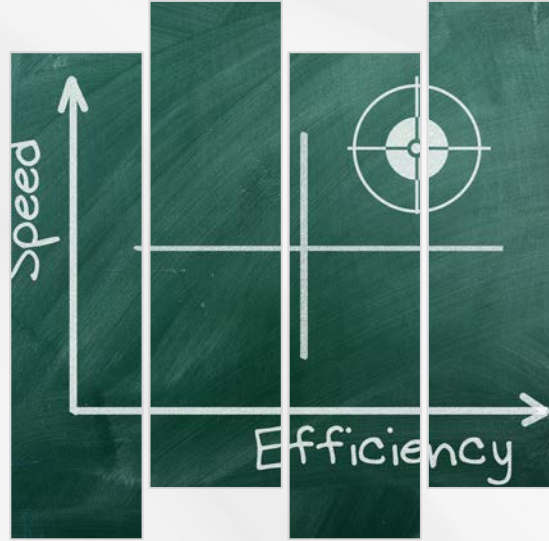
--Aoting's pioneering waterless cleaning technology has revolutionized the direction of the robot

Frequently add cleaning agents, clean rollers, sewage tank, and unclog blocked pipelines.



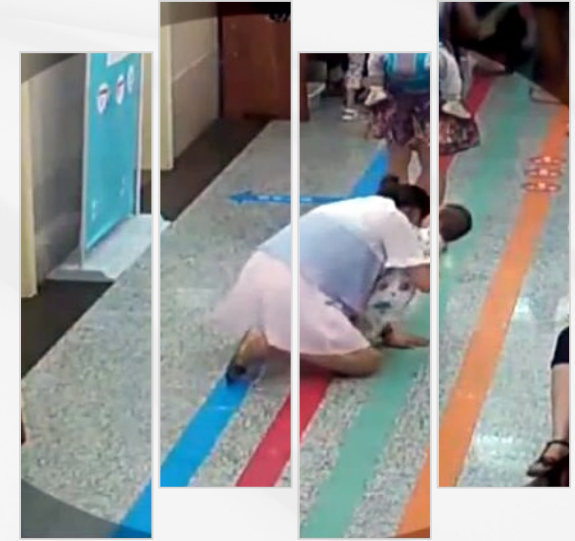
Excessive need for human assistance, with insignificant cost reduction and efficiency improvement!

Conflict between cleaning power and cleaning efficiency, with relatively low efficiency.



Frequent charging, water changing, and maxing out cleaning intensity affect the continuous operation of large - area places.

Frequent use of water in public spaces greatly increases safety hazards.



A woman slipped in a hospital corridor due to water on the floor and was compensated 15,000 USD.

# Principle of Our Globally Pioneering Waterless Cleaning Technology

--Realize an all-in-one cleaning method integrating sweeping, mopping, vacuuming, and dust pushing


- 1** Garbage gathering and sweeping
- 2** The ultra-high-speed roller brush exerts pressure to scrub the floor.
- 3** "Throw and fling" garbage into the trash bin
- 4** HEPA controls dust and purifies the air



According to Aoting's test , the glossiness of the floor can be increased by more than **5 GU** after a single cleaning.

# We provide cleaning robots with the global optimal solution

--Our product features simple maintenance, strong cleaning capability, and low-cost investment

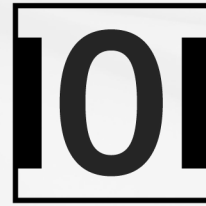
Cleaning Robot Type	Dry Vacuum Type	Mopping Type 	Scrubbing Floor Type
<b>Cleaning Principle</b>	Vacuum cleaner	Simulate human hand mopping and polishing	Scraper, water absorption
<b>Ease of Operation</b>	Replace dust bag	Empty trash bin, replace dust bag	Fill with clean water, drain sewage, clean roller brush, clean sewage bucket, flush pipes, add chemical foaming agent, defoamer, etc.
<b>Deployment Difficulty</b>	Simple, no need to renovate the site	Simple, no need to renovate the site	Complex, may need to renovate water supply and sewage pipes if necessary
<b>Noise Impact</b>	Relies on negative pressure vacuum, loud noise	Dust control and air purification, Low noise	Relies on negative pressure to absorb sewage, loud noise
<b>Endurance and Efficiency</b>	Slow charging, short endurance	2h Fast charge, 8h operation	Shuttles back and forth during charging, draining and water supply, low efficiency
<b>Cleaning Power</b>	★	★★★	★★★★
<b>Product Disadvantages</b>	Deviates from the essence of cleaning	Truly reduce costs and increase efficiency	Excessive manual assistance, difficult to reduce costs and increase efficiency

# Core technical points of our product

--Cleaner, More Worry-Free, Smarter



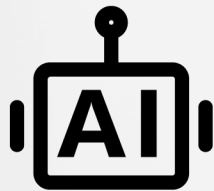
Waterless Cleaning Technology  
Spotless to the End



0cm Edge Cleaning  
Pushing the Limits of Cleanliness



Quick Deployment  
Easy Maintenance



Human-Robot Collaboration  
Uninterrupted 24/7 Operation



Intelligent Mapping  
Centimeter-Level Positioning



Real-Time Task Monitoring  
Automatic Cleaning Report Submission

# Product on sale

--Our products cover scenarios from small offices to large factories

## AOTINGBOTS SW55 A

Robot size(L*W*H)	615*585*650(mm)
Robot weight	93.5kg
Charging post size(L*W*H)	455*310*475(mm)
Trash bin capacity	2.5L
Highest cleaning efficiency	1200 m <sup>2</sup> /h
Cleaning path (w/ double side brush)	550mm
Battery capacity	50AH
Endurance time	Hard Flooring: 8 hours, Silent Mode: 10 hours
Propel speed(High/Medium/Low)	0.7m/s 0.5m/s 0.3m/s
Operating noise volume	≤62dB(A)



## AOTINGBOTS SW80 A

Robot size(L*W*H)	1025*850*975(mm)
Robot weight	190kg
Charging post size(L*W*H)	455*350*450(mm)
Trash bin capacity	3.5L
Highest cleaning efficiency	1600 m <sup>2</sup> /h
Cleaning path (w/ double side brush)	850mm
Battery capacity	100Ah
Endurance time	Hard Flooring: 8 hours, Silent Mode: 12 hours
Propel speed(High/Medium/Low)	0.6m/s 0.45m/s 0.3m/s
Operating noise volume	≤63dB(A)



# Applicable Scenarios for the Product

--Our products can be used in a wide range of indoor public spaces



Shopping malls/Supermarkets



Railway stations/Metros Airport



Factories



Exhibition Centres/Conference Centres



Hospitals/Medical centres



Hotels



Office buildings



Schools

Additionally, our products are widely used in casinos, casual dining restaurants, and indoor sports facilities

# Applicable Surface Materials for the Product

--Be it premium floor finishes or standard ones, our products deliver consistent performance

## Premium Floors



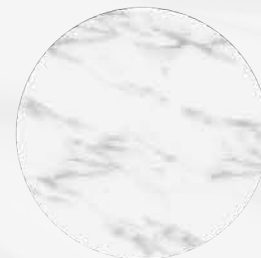
Short-pile Carpet



Long-pile Carpet

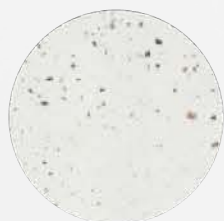


Wooden Floor



Marble

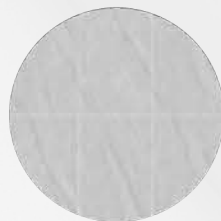
## Common Floors



Terrazzo



Cement Floor



Ceramic Tiles



Epoxy Resin



Sandstone



PVC



Plastic Flooring

# CORPORATE HONORS AND ACHIEVEMENTS



# Honorary Certificates Acquired

The company has received numerous awards, including the National High-Tech Enterprise Certificate, the 2024 CCE Best Intelligent Cleaning Equipment Brand Award, the 2023 ISSA INCLEAN Innovation Excellence Award, the Second Prize of the "Challenge Cup" Innovation and Entrepreneurship Competition, and the "OFweek" Artificial Intelligence Outstanding Investment Value Award.



# Patents and Product Certifications Acquired

## Core Patents

Holds over 70 intellectual property rights, including invention patents, utility models, design patents, and software copyrights.



## Qualification

Our company and products are certified with ISO quality management, environmental management, and occupational health and safety management systems, as well as a five-star service certification. We also hold EU CE, Saudi Arabia's SABER, Australia's C-Tick, US FCC, and Japan's PSE certifications.



# Business Layout Progress



**32 million** sqm

Total Cleaned Area

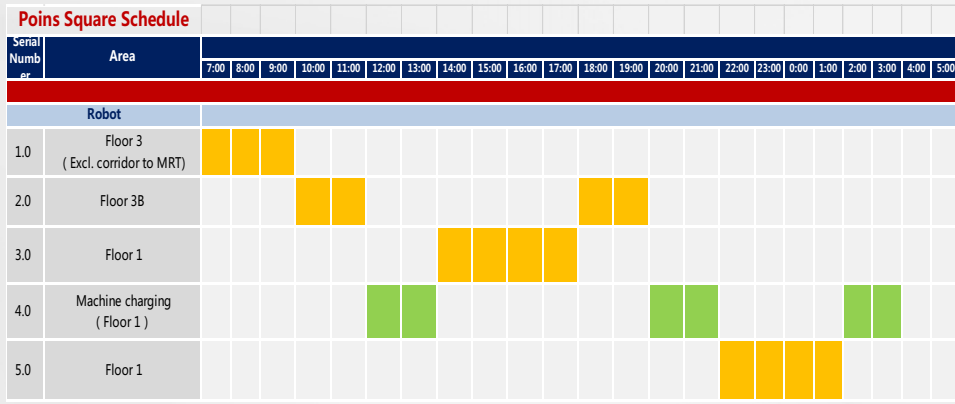
**147,000+** hours

Total Cleaning Time

**20+** countries / regions

Markets Entered

# Develop the "Human + Machine" Smart Cleaning Solution and Achieve Success in the Indonesia Project



## Operator Working Checklist

Lembar masuk pengoperasian robot pembersih SW55-November

Poins-Lantai

Tanggal	Operator	1. Dari lantai 3B ke lantai 1 2. Mulai mengisi daya	1. Berhenti mengisi daya 2. Mulai misi Lantai 1	1. Dari lantai 3B ke lantai 1 2. Mulai mengisi daya	Komentar
11-1		11:30	14:00	20:00	
11-2					
11-3					
11-4					
11-5					
11-6					
11-7					
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11-17					
11-18					
11-19					



**South Quarter**

Area	Staff	Duty
Shift I	Lobby A/B1/B2/C: Andri, Ronita	Ground, Others
	LG Floor: Fardo, Andica	Ground, Toilet, Others
	Lobby A/C: Apriansyah, Jamaludin	Ground, Others
	Lobby B1/B2: Ipsi Afrisal	Ground, Others
Shift II	LG Floor: Wahyu, Yudi Mulyadi	Ground, Others

8 staffs (after robot's working) + 0.5 staffs (robot's cost: 0.5 people) = 23% Cost Down: 1 - 11 staffs (before robot's working)

**90.2%** (on average)  
Robot Coverage Rate

**4427** Planed Square(m<sup>2</sup>)      **3994** Working Square(m<sup>2</sup>)

**13h** (on average)  
Robot Working Period on average

**4h x 2** Floor 1      **3h** Floor 3      **1h x 2** Floor 3B



# Case Studies in Collaboration



Shanghai French School



Van der Valk Hotel, Belgium



Chongqing Zengjiayan Metro Station



Marina Bay Sands, Singapore



Vent-unique Warehouse, France



Beijing Oriental Financial Center



A Casino Group, France



South Quarter Tower, Jakarta



Malaysia International School Gymnasium



Xi'an Minsheng Bank



Shanghai Grade A office building



NOI Hotel, Chile

# Aoting leverages robotic technology to build a future of peace and happiness for global users



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