

CASUN Intelligent Robot GmbH  
Suzhou CASUN Intelligent Robot Co., Ltd.

# PRODUCT MANUAL

stock code . 834863

**CASUN Intelligent Robot GmbH**  
**Suzhou CASUN Intelligent Robot Co., Ltd.**

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Intelligent logistics project solution



Intelligent control system



Mobile robot

**casun**  
**佳 顺 智 能**



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# COMPANY PROFILE

Founded in 2007, CASUN is a listed company with AGV/AMR industrial mobile robot, intelligent control system and intelligent logistics system as its core business, and integrates R&D, production, sales, implementation and operation and maintenance (stock code: 834863). The business network covers the world and a wholly-owned subsidiary is established in Germany. After 17 years of accumulation and growth, CASUN has become a leading brand in the field of mobile robots in China. Up to now, CASUN has completed and delivered 3000+ projects solution to global customers.

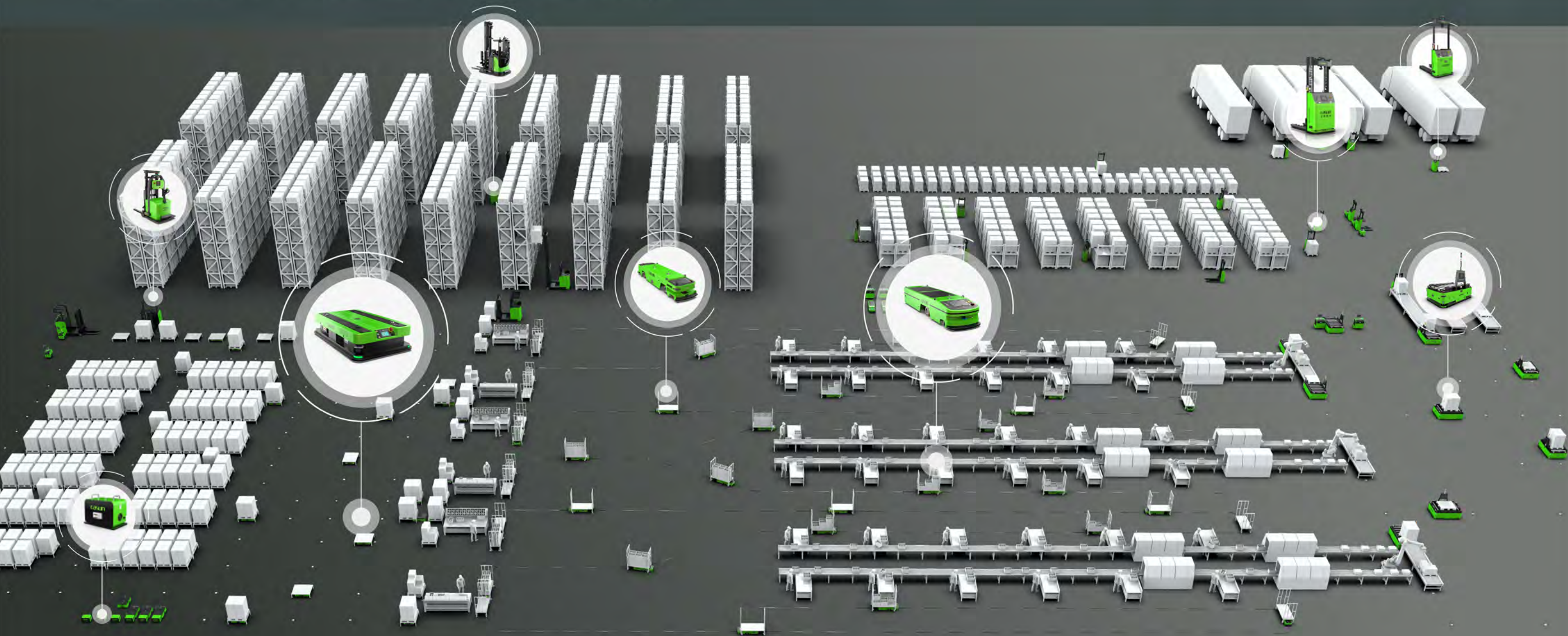
Adhering to the technical route of independent research and development, CASUN has accumulated more than 100 invention patents and various intellectual property rights, obtained a number of honors and qualifications, and successfully been on the national specialized, exquisite and particularly new "little giant" enterprise list. As a core member of the industrial mobile robot industry standard Committee, CASUN actively promotes the standardized development of the industry, and participates in the drafting and formulation of 9 group standards.

# 17<sup>Years</sup>

Established in 2007, CASUN has  
focused on the mobile robot industry for 17 years

# 3000<sup>+</sup>

3000+ of various projects  
have been completed and implemented







# START



- 2007 — CASUN Intelligent was established in Shenzhen;
- 2011 — Established Xian, Wuhan, Suzhou, Chongqing 6 offices nationwide, and set up domestic service network ;
- 2011 — CASUN's first generation "AGV Central Management System" has been successfully developed. ◦



## Development History

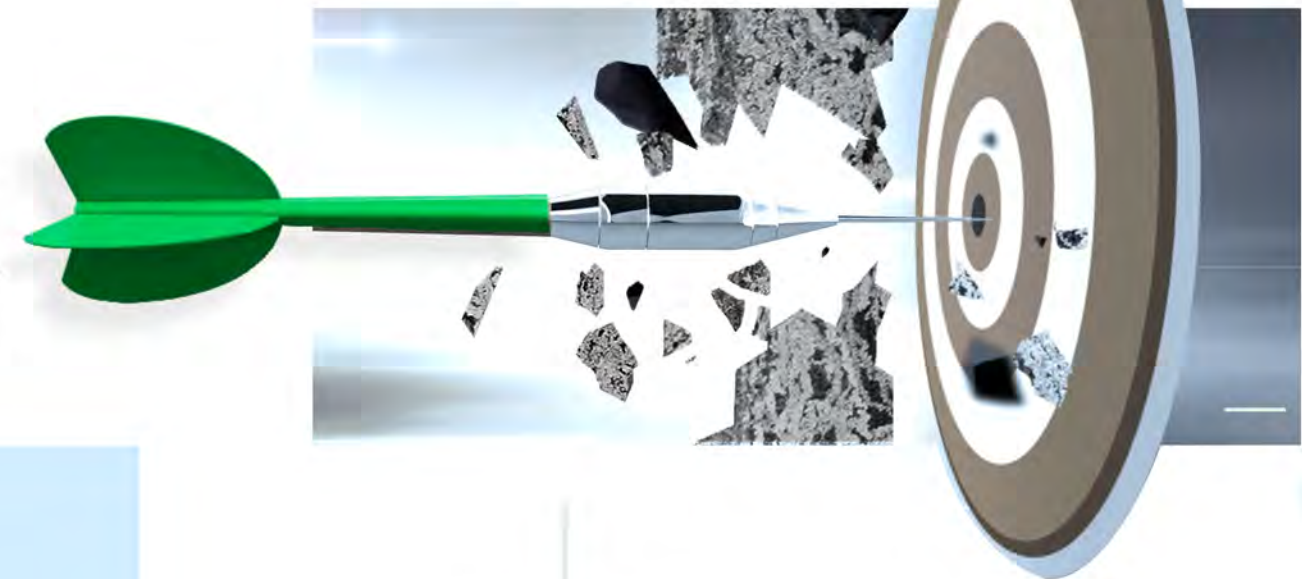
- 2012 — Entered the automobile industry, and reached cooperation with lots of related enterprises;
- 2016 — CASUN Intelligent successfully landed on NEEQ as the first stock of mobile robot field ;
- 2016 — Started to expand overseas markets and set up a German subsidiary in 2019;
- 2016 — The first flexible production line jointly developed with new energy leading enterprises was completed and implemented;
- 2018 — Established Xi 'an Software RESEARCH and development Center was, and launched the second-generation AGV intelligent management and scheduling system based on B/S architecture was in 2019
- 2019 — The project in Romania won the title of "Lighthouse Factory"
- 2019 — Launched "CASUN software Application platform", applied to digital floor logistics solutions.



# CULTIVATE

2020-2024

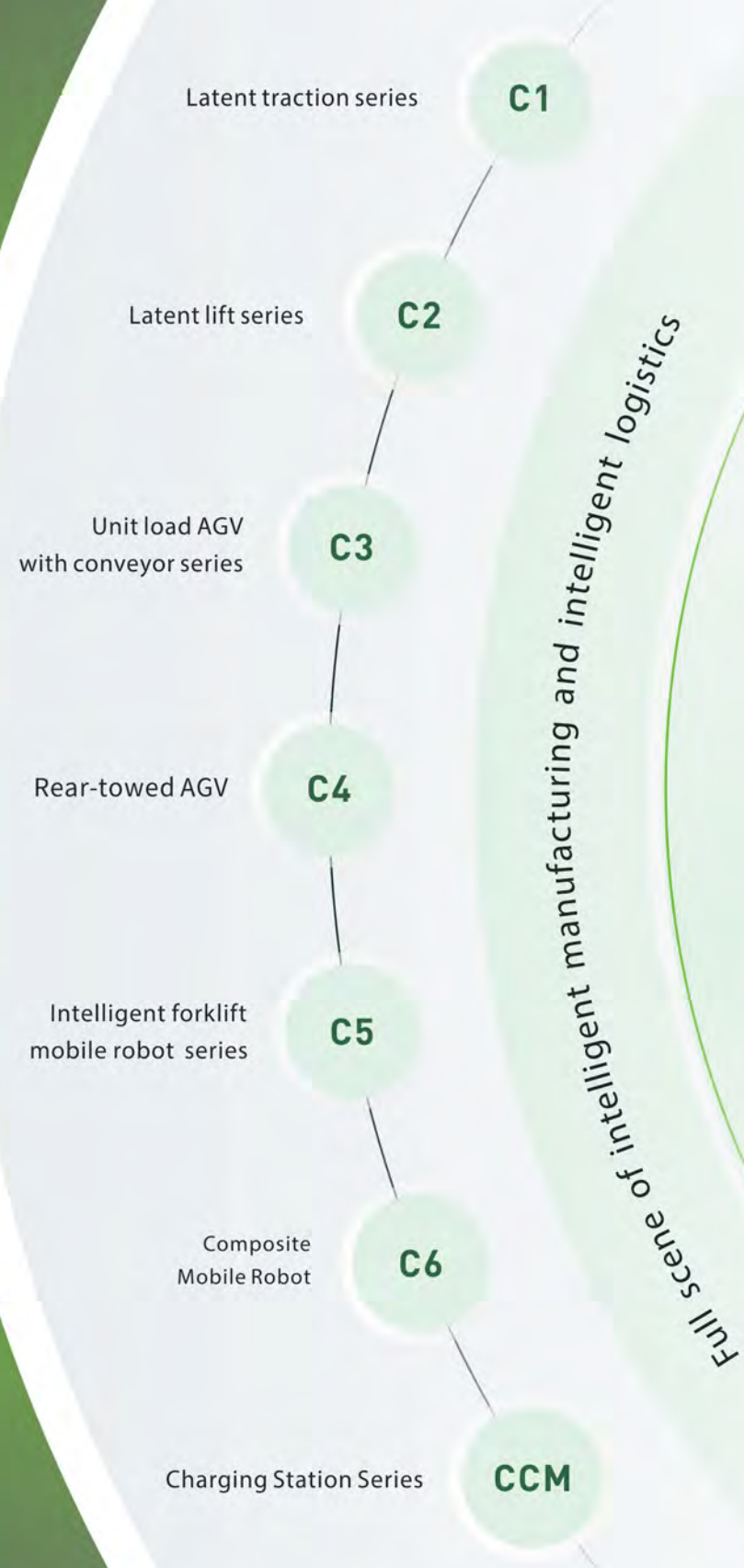
# BREAKTHROUGH



- 2020 — Won Shenzhen top ten robot enterprises.
- 2021 — Successfully selected into the list of "2021 Guangdong Engineering Technology Research Center";
- 2021 — Batch landing application of SLAM navigation based on Multi-line LiDAR
- 2021 — Favored by capital, CASUN got nearly 100 million RMB financing, which help the rapid development of the company;
- 2022 — CASUN moved to Suzhou, build a new headquarters base, optimize the company's strategic layout, and comprehensively enhance the company's comprehensive competitiveness;
- 2022 — Three types of AGV dedicated to the pre-process of lithium battery were released, deeply cultivating the new energy lithium battery industry
- 2022 — Selected in the list of "Jiangsu Province Specialized and new"
- 2023 — CASUN was selected as a national specialized and innovate 'little giant' enterprise



# CORE BUSINESS





# Honor and Certification



Supply Chain Logistics Value Contribution Award

2023 annual photovoltaic operation and maintenance and operation excellent enterprise

Top10 robot brands in Shenzhen

2022 Equipment Committee of China Federation of Things -Recommended brand of logistics technology equipment

China Robot Product Inspection Certification (CR Certification)

CE certification in the European Union

Exclusive title 《Blue Book of AGV/AMR Solutions for New Energy Industry》(2022 edition)

Joint participation (2022 Blue on Robot Application and Development in lithium Industry)

The planning solution for port transfer warehouse of Intelligent logistics won "Best Promotion and Application Award"

CASUN was selected into the list of "Suzhou Engineering Technology Research Center in 2023"

National high-tech enterprise

9 Industry Standards  
4 group standard drafting + 5 group standard editing

"Capek" Value Brand of the Year award

CASUN was selected in the list of "2023 Suzhou Municipal Enterprise Technology"

"Excellent Case Award" in 2023 Intelligent Logistics Industry

The 9th Annual Technology Innovation Product Award 2023 (C1-14)

Guangdong Intelligent AGV Mobile Robot Engineering Technology Research Center

It was listed as a state-level specialized, exquisite and particularly new "little giant" enterprise

Selected as a special new small and medium-sized enterprise in Jiangsu Province

Guangdong Robot Cultivation Enterprise

Passed the ISO9001 quality management system certification

ISO45001 Occupational Health and Safety Management System

ISO14001 Environmental management system certification

Suzhou Robot Excellent Case Award -CALB flexible Production Line Project;

Patents and other intellectual property rights



Selected as the "Industrial Application Mobile Robot Lithium Battery Industry Beacon Case Award"

Shenzhen enterprise innovation record







## R & D Center



Suzhou



Shenzhen



Xi'an



## After-sales Network

Suzhou, Shanghai, Changzhou, Qingdao,  
Jinan, Shenzhen, Guangzhou, Chengdu,  
Xi'an, Tianjin, Changchun, Wuhan ...



## Overseas Market

- German branch
- 30+ overseas agents





## Partner

CASUN has completed and implemented more than 3,000 projects of various types, covering more than 50 large comprehensive industries, including new energy lithium electricity, new energy photovoltaic, energy storage, automobiles and parts, 3C semiconductor, flat panel display, household appliances, food and beverage industries.

At the same time, CASUN has developed the global market since 2011, and has more than 30+ subsidiaries and offices at home and abroad, forming a huge global service network.

# 50+

More than 50 large comprehensive industries

# 1000+

The number of more than 1000+

# 3000+

3000+ of various projects have been completed and implemented

## New Energy Industry



## Automobile and Parts



## 3C & Semiconductor



## Home appliances & Flat panel display



## Others





# C1

## Latent Traction Series Mobile Robots



### Series Introduction

Latent traction series mobile robots can lurk under the material truck, use the traction rod to automatically lift, hook or drop the material vehicle. This series of products are divided into one-way, two-way and omni-directional according to the running direction, the navigation method is magnetic navigation, and the traction capacity is 500kg~1500kg. Latent traction series AGVs are widely used, compact in structure, flexible in operation, mature and stable, and suitable for various material vehicles.

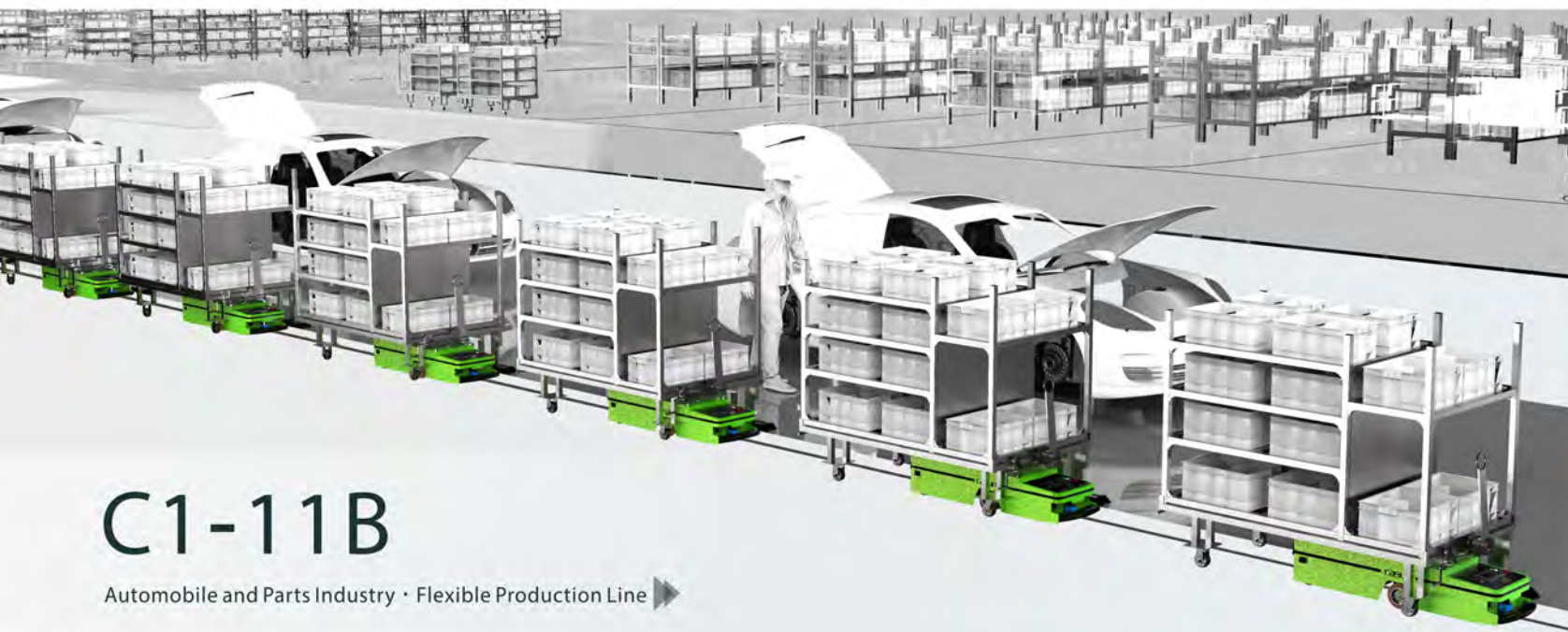


### Application Environment

-10°C ~ 45°C; no dust, flammable, explosive and corrosive gases.

|            | Model                   | C1-11B                                                                                                | C1-12                                                                                                 | C1-13                                                                                                 | C1-14                                                                                                 | C1-22                                                                                                          | C1-24                                                                                                          |
|------------|-------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|            |                         |                    |                    |                    |                    |                             |                             |
| Basic      | Dimension               | L1450*W420*H290 (mm)                                                                                  | L1965*W420*H328(mm)                                                                                   | L2000*W500*H330(mm)                                                                                   | L1965*W420*H330 (mm)                                                                                  | L1900*W420*H290mm                                                                                              | L1900*W420*H290mm                                                                                              |
|            | Max payload             | 500kg / 1000kg                                                                                        | 1000kg / 1500kg                                                                                       | 2500kg                                                                                                | 1500kg                                                                                                | 1000kg / 1500kg                                                                                                | 1000kg / 1500kg                                                                                                |
|            | Weight                  | 200kg                                                                                                 | 320kg                                                                                                 | 630kg                                                                                                 | 220kg                                                                                                 | 280kg                                                                                                          | 362kg                                                                                                          |
|            | Turning radius          | 650mm                                                                                                 | 1200mm                                                                                                | 1300mm                                                                                                | 1500mm                                                                                                | 1000mm                                                                                                         | 1000mm                                                                                                         |
| Navigation | Navigation mode         | Magnetic navigation                                                                                   | Magnetic navigation                                                                                   | Magnetic navigation                                                                                   | SLAM                                                                                                  | Magnetic navigation                                                                                            | SLAM / QR navigation                                                                                           |
|            | Navigation accuracy     | ±10mm                                                                                                 | ±10mm                                                                                                 | ±10mm                                                                                                 | ±10mm                                                                                                 | ±10mm                                                                                                          | ±10mm                                                                                                          |
|            | Stop accuracy           | ±10mm                                                                                                 | ±10mm                                                                                                 | ±10mm                                                                                                 | ±10mm                                                                                                 | ±10mm                                                                                                          | ±10mm                                                                                                          |
| Movement   | Moving direction        | Forward, turn left and right                                                                          | Forward, turn left and right                                                                          | Forward, turn left and right                                                                          | Forward, turn left and right                                                                          | Forward,backward, turn left and right                                                                          | Forward,backward, turn left and right                                                                          |
|            | Drive mode              | Differential drive                                                                                    | Differential drive                                                                                    | Differential drive                                                                                    | Differential drive                                                                                    | Differential drive                                                                                             | Differential drive                                                                                             |
|            | Acceleration            | 0.2m/s <sup>2</sup>                                                                                   | 0.2m/s <sup>2</sup>                                                                                   | 0.2m/s <sup>2</sup>                                                                                   | 0.2m/s <sup>2</sup>                                                                                   | 0.2m/s <sup>2</sup>                                                                                            | 0.2m/s <sup>2</sup>                                                                                            |
|            | Max moving speed        | 45m/min                                                                                               | 45m/min                                                                                               | 45m/min                                                                                               | 45m/min                                                                                               | 35m/min                                                                                                        | 45m/min                                                                                                        |
|            | Max climbing capability | ≤3°                                                                                                   | ≤3°                                                                                                   | ≤3°                                                                                                   | ≤3°                                                                                                   | ≤3°                                                                                                            | ≤3°                                                                                                            |
| Battery    | Battery type            | Lithium battery                                                                                       | Lithium battery                                                                                       | Lithium battery                                                                                       | Lithium battery                                                                                       | Lithium battery                                                                                                | Lithium battery                                                                                                |
|            | Charging mode           | Side charge/Ground charge                                                                             | Side charge/Ground charge                                                                             | Side charge/Ground charge                                                                             | Side charge/Ground charge                                                                             | Side charge/Ground charge                                                                                      | Side charge/Ground charge                                                                                      |
|            | Charging time           | ≤1H                                                                                                   | ≤1H                                                                                                   | ≤1H                                                                                                   | ≤1H                                                                                                   | ≤1H                                                                                                            | ≤1H                                                                                                            |
|            | Rated endurance         | 8H                                                                                                    | 8H                                                                                                    | 8H                                                                                                    | 8H                                                                                                    | 8H                                                                                                             | 8H                                                                                                             |
| Network    | Communication mode      | RF / WiFi / 5G                                                                                        | RF / WiFi / 5G                                                                                        | WiFi / 5G                                                                                             | WiFi / 5G                                                                                             | RF / WiFi / 5G                                                                                                 | WiFi / 5G                                                                                                      |
| Protective | Safety warning          | • Light warning<br>• Voice broadcast                                                                  | • Light warning<br>• Voice broadcast                                                                  | • Light warning<br>• Voice broadcast                                                                  | • Light warning<br>• Voice broadcast                                                                  | • Light warning<br>• Voice broadcast                                                                           | • Light warning<br>• Voice broadcast                                                                           |
|            | Safe sensing range      | ≤3m adjustable                                                                                        | ≤3m adjustable                                                                                        | ≤3m adjustable                                                                                        | ≤3m adjustable                                                                                        | ≤3m adjustable                                                                                                 | ≤3m adjustable                                                                                                 |
|            | Safety protection       | • Obstacle detection sensor ahead<br>• Mechanical anti-collision mechanism<br>• emergency stop switch | • Obstacle detection sensor ahead<br>• Mechanical anti-collision mechanism<br>• emergency stop switch | • Obstacle detection sensor ahead<br>• Mechanical anti-collision mechanism<br>• emergency stop switch | • Obstacle detection sensor ahead<br>• Mechanical anti-collision mechanism<br>• emergency stop switch | • Front and rear obstacle detection sensor<br>• Mechanical anti-collision mechanism<br>• emergency stop switch | • Front and rear obstacle detection sensor<br>• Mechanical anti-collision mechanism<br>• emergency stop switch |





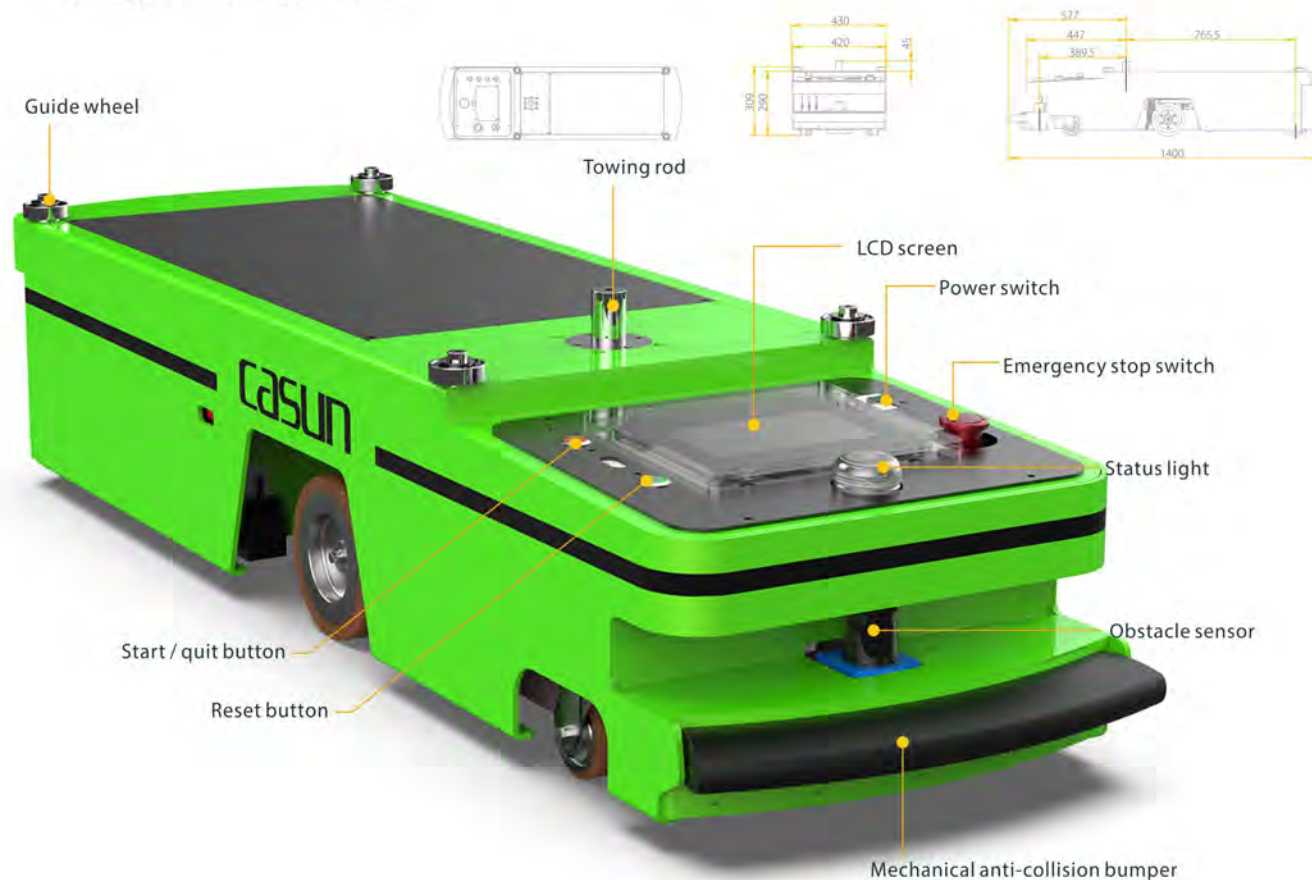
## C1-11B

Automobile and Parts Industry · Flexible Production Line



### Product introduction

C1-11B one-way latent traction AGV is suitable for workshops with relatively fixed production processes. The working method is that the AGV automatically lurks to the bottom of the material truck after receiving system instructions, and automatically connects to the material vehicle through the AGV traction rod to realize material handling. End-to-end transfer. At present, it has been widely used in the two application scenarios of SPS material supply in automobile assembly workshop and PACK line in new energy lithium battery industry.



### Product advantages



The product performance is stable, and there are a large number of mature application cases;



The car body is flexible and the turning radius is small;



High cost performance and short delivery period;



Flexible production to ensure smooth production lines;



### Application industries and scenarios



application industry

Automobiles and parts, new energy lithium batteries, machinery manufacturing, electronics, electrical appliances and other diversified industries;



application scenarios

Transportation of production line materials, raw materials, parts and components, forming a flexible production line, etc.;



### Project case - Automobile assembly workshop project

Solution

In the final assembly line and the instrument line, workers stand on the side of the line and operate on the special material truck pulled by the AGV. After completing the current process, they are released to the next station to realize streamlined operation. By replacing the original fixed production line, flexible production is realized, which is also conducive to later expansion and upgrading, and reduces the cost of later line body transformation; through the application of AGV in each link, the entire logistics link is connected in series to realize unmanned Smart delivery.

Economic benefits



Improve operating efficiency

Realize unmanned handling through AGV, saving warehouse logistics personnel;



Improved management efficiency

The AGV system is connected to the production management system, which can remind warehouse personnel to prepare materials in advance, avoid delays in production line, and significantly save personnel management costs;



Reduce errors

Through automatic material calling, point-to-point material handling is realized, and the error rate due to manual distribution is reduced.



CASE



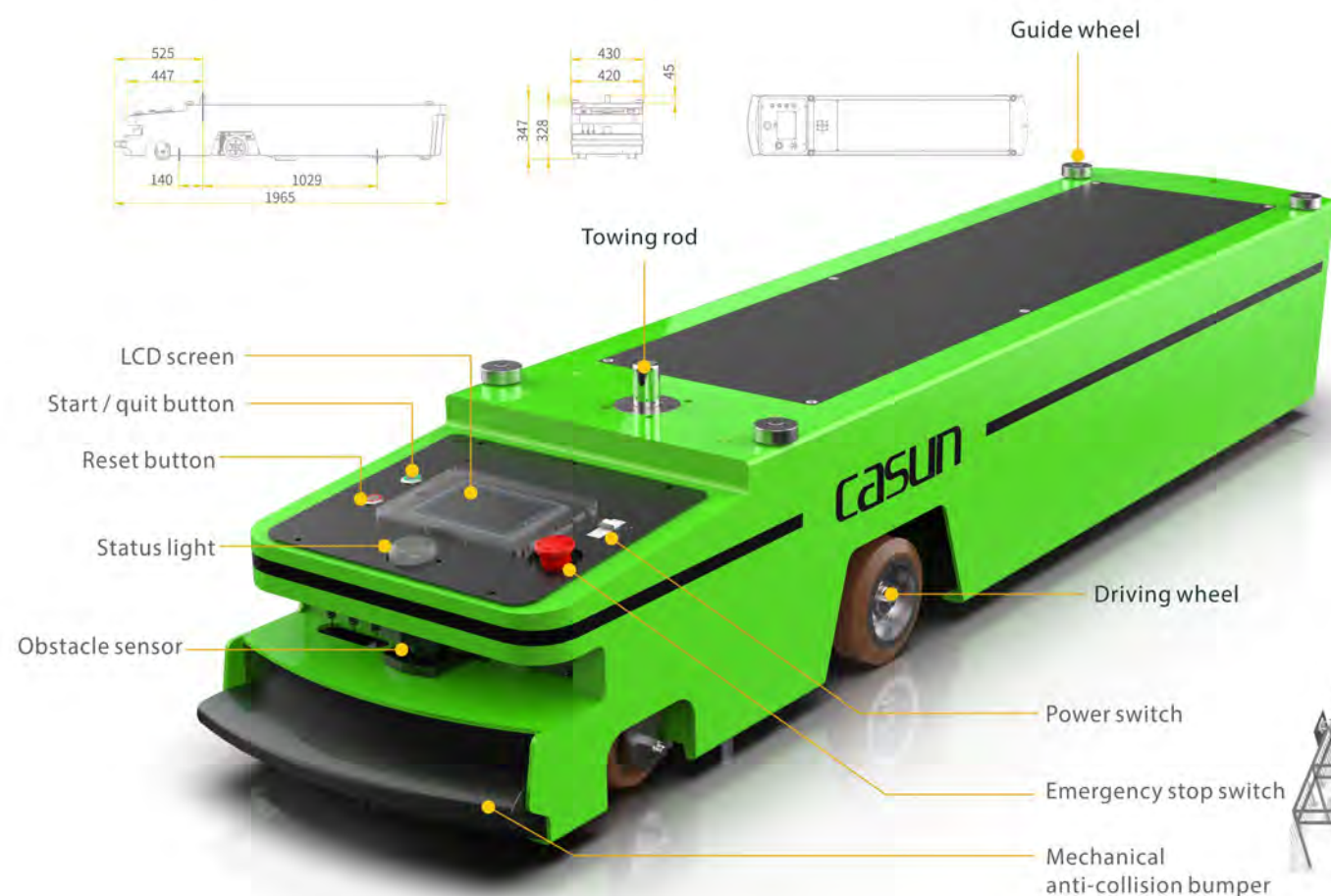


C1-12

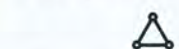
New energy lithium battery industry PACK line

## Product introduction

C1-12 one-way latent traction type AGV is suitable for workshops with relatively fixed production processes, end-to-end transfer. A flow production line can also be composed of multiple AGVs to realize flexible production in the factory. At present, it is widely used in the PACK line scene of the new energy lithium battery industry.



## Product advantages



The product performance is stable, and there are a large number of mature application cases;



Short lead time and high cost performance;



Adapt to the lithium battery industry and the automobile industry;



Flexible production to ensure smooth production lines;

## Application industries and scenarios

### application industry

Diversified industries such as new energy lithium batteries, automobiles and parts, machinery manufacturing, electronics, and electrical appliances.

### application scenarios

End-to-end transportation of production line materials, raw materials and parts, forming a flexible production line, etc.

## Project case - Lithium battery PACK line material transfer project

### Solution

The factory's PACK line material transfer project mainly realizes the material transfer between battery packs from assembly to testing to packaging, and its operation process is a circular assembly line. Through the CRMS mobile robot control system, the system realizes autonomous material calling, intelligent handling, information collection, and intelligent storage, and seamlessly connects with the user's production management system.

Difficulties of the project: This project mainly solves the technical difficulties of docking various peripheral equipment systems, such as transmission equipment, robotic arms, etc.; secondly, it accurately realizes the priority logic judgment of AGV operation, according to the sequence of different stations, the CRMS system automatically selects and determines the most suitable transportation route.

### Economic benefits



### TQCM

Create a flexible production line and improve the flexibility of production scheduling.



### Damage reduction

Reduce damage - improve yield rate and accuracy rate: Reduce material damage during handling, and the defective rate is reduced by 90%.



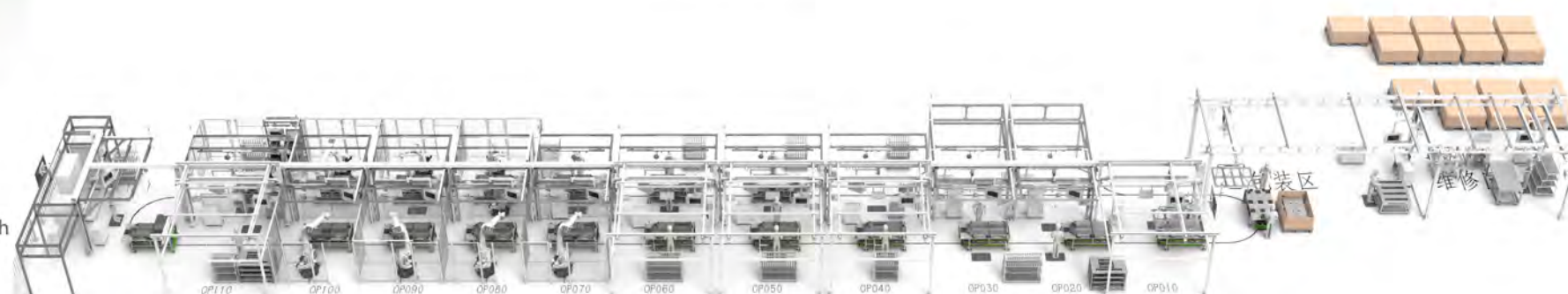
### Precise location

The transportation accuracy rate is increased to 99%, which meets the peak demand of full production of the whole line.



### Intelligent logistics

Realize the optimization of warehouse location, route and task allocation, and the informatization of the whole process.





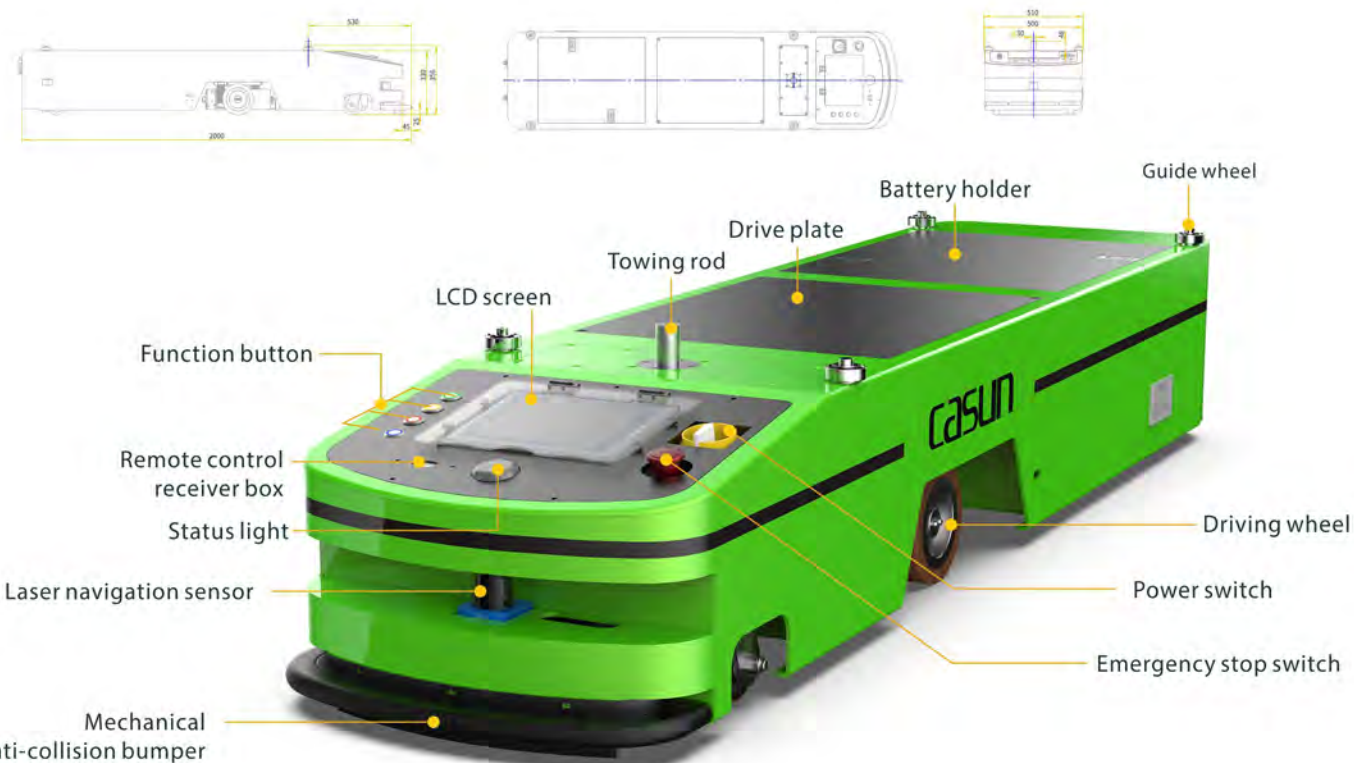


## C1-13

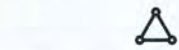
New energy lithium battery industry PACK line

### Product introduction

C1-13 One-way latent traction AGV is suitable for a relatively fixed production process. The navigation method is magnetic, and the working method is that the AGV is automatically lurked to the bottom of the dolly after receiving the system instruction then transit at the end. It can also be composed of multiple AGVs to achieve flexible production of the factory. At present, it is mostly used for SPS workshop and lithium battery manufacturing flexible production lines.



### Product advantages



The product performance is stable, and there are a large number of mature application cases;



The delivery cycle is short and the cost performance is high



Adapt to the lithium battery industry, automobile industry



Flexible production to ensure smooth production lines;

### Application industries and scenarios

#### application industry

Application industry: diversified industries such as new energy lithium battery, automobiles and components, mechanical manufacturing, electronics, electrical appliances.

#### application scenarios

Application scenario: Materials raw materials, end to the end transport of parts, and form a flexible production line.

### Project case - Lithium battery PACK line material transfer project

Factory PACK flexible production line project, it mainly realizes the circulation of products from assembly to test then to packaging and other processes. The transportation path is a circular assembly line. Through the CRMS mobile robot control system, the system independent materials, intelligent handling, information collection, smart storage, and seamlessly connect with user production management systems and wire automation equipment.

The project mainly solves the technical difficulties of the docking of various peripheral equipment systems, such as transmission equipment, robotic arm, testing equipment, etc.; Secondly, the priority logic judgment of AGV operation is accurately realized. According to the priority order of different products to different stations, the CRMS system automatically selects the most suitable transportation line.



#### TQCM

Reduce the cost of fixed equipment investment: Create a flexible production line and improve production scheduling flexibility.



#### Reduce damage

Improve the yield rate and accuracy, reduce material damage during transportation, and reduce the defect rate by 90%;



#### Accurate positioning

Improve transportation positioning accuracy, and increase transportation accuracy to 99%, meeting the full production peak demand of the entire line;



#### Intelligent logistics

Realize the intelligentization of on-site logistics, optimize the storage location, path, and task allocation, and informatize the entire process;

#### Economic benefits

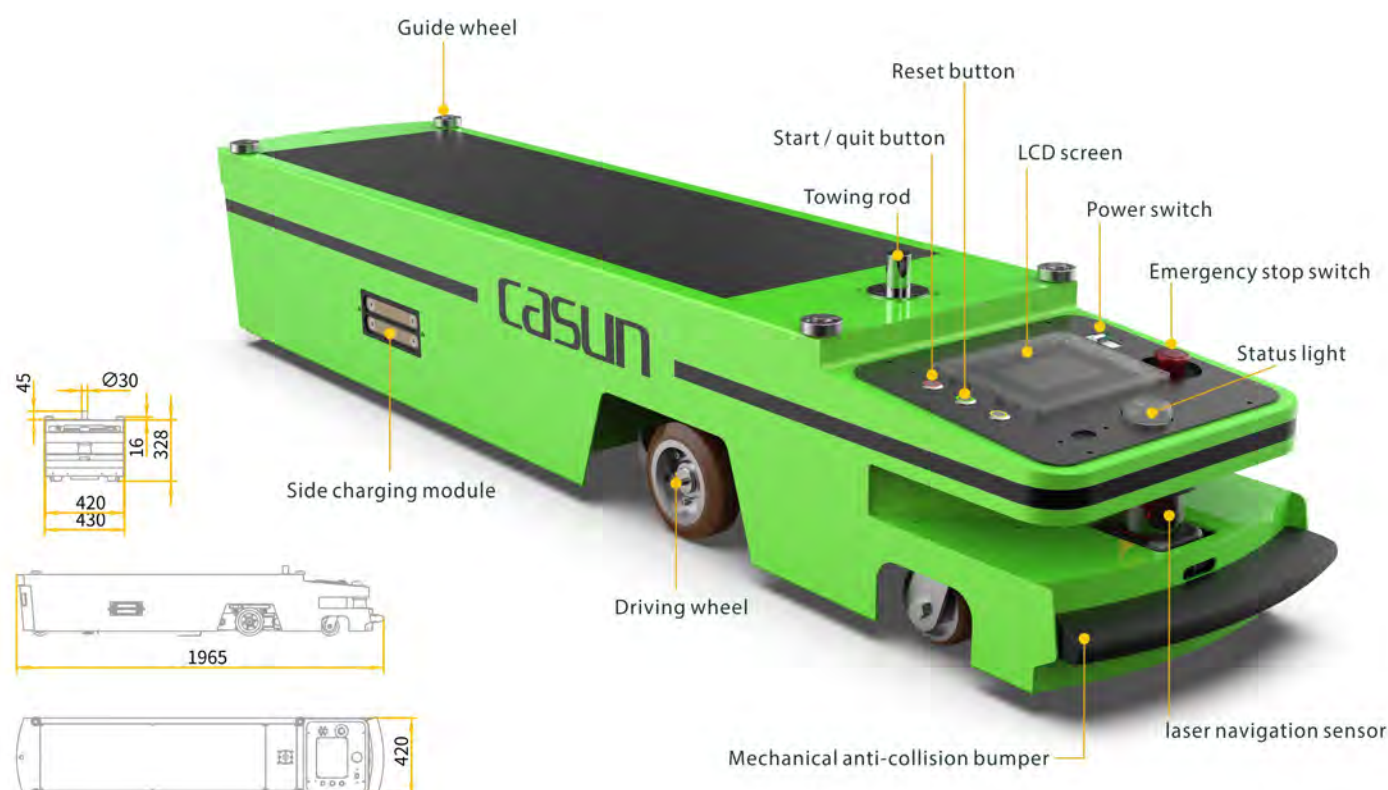






## Product introduction

C1-14 one-way latent traction AGV is suitable for sites with relatively fixed environmental contours. The navigation mode is SLAM navigation. The working mode is that the AGV automatically lurks to the bottom of the material truck after receiving system instructions, and is automatically hung by the traction bar. Pick-up trucks realize end-to-end transfer. A flow production line can also be composed of multiple AGVs to realize flexible production in the factory. At present, it is mostly used in SPS of automobile assembly workshop.



## Product advantages

Adopt advanced SLAM navigation technology;

Adapt to a variety of tooling trucks;

High cost performance and short delivery period;



## Application industries and scenarios

application industry

Diversified industries such as automobiles, auto parts, machinery manufacturing, electronics, electrical appliances, and new energy;

application scenarios

Production line materials, raw materials, parts transportation, flexible production lines, etc.



## Project case - SPS distribution of small pieces in the final assembly line

Solution

Small SPS distribution on the final assembly line, mainly including: interior trim line, final line, chassis line, door line, etc., mainly from the material distribution area, small SPS racks are delivered to the edge of the production line, and then through the upper and lower lines. The mechanism is sent to the production line to realize the operation of the SPS material truck along with the production line. It mainly solves the problem of single-set distribution of small materials to the side of the car to run along the line, convenient and fast operation by personnel, space saving in wireless side warehouses, and errors in personnel assembly without errors and missing installations.

Economic benefits

### Improve efficiency

Improve operating efficiency, realize unmanned handling through AGV, and save warehouse logistics personnel;

### Space saving

Save storage space at the edge of the production line, and assist customers in realizing 5S management at the edge of the line;

### Reduce errors

Through automatic material calling, point-to-point material handling is realized, and the error rate due to manual distribution is reduced;



CASE





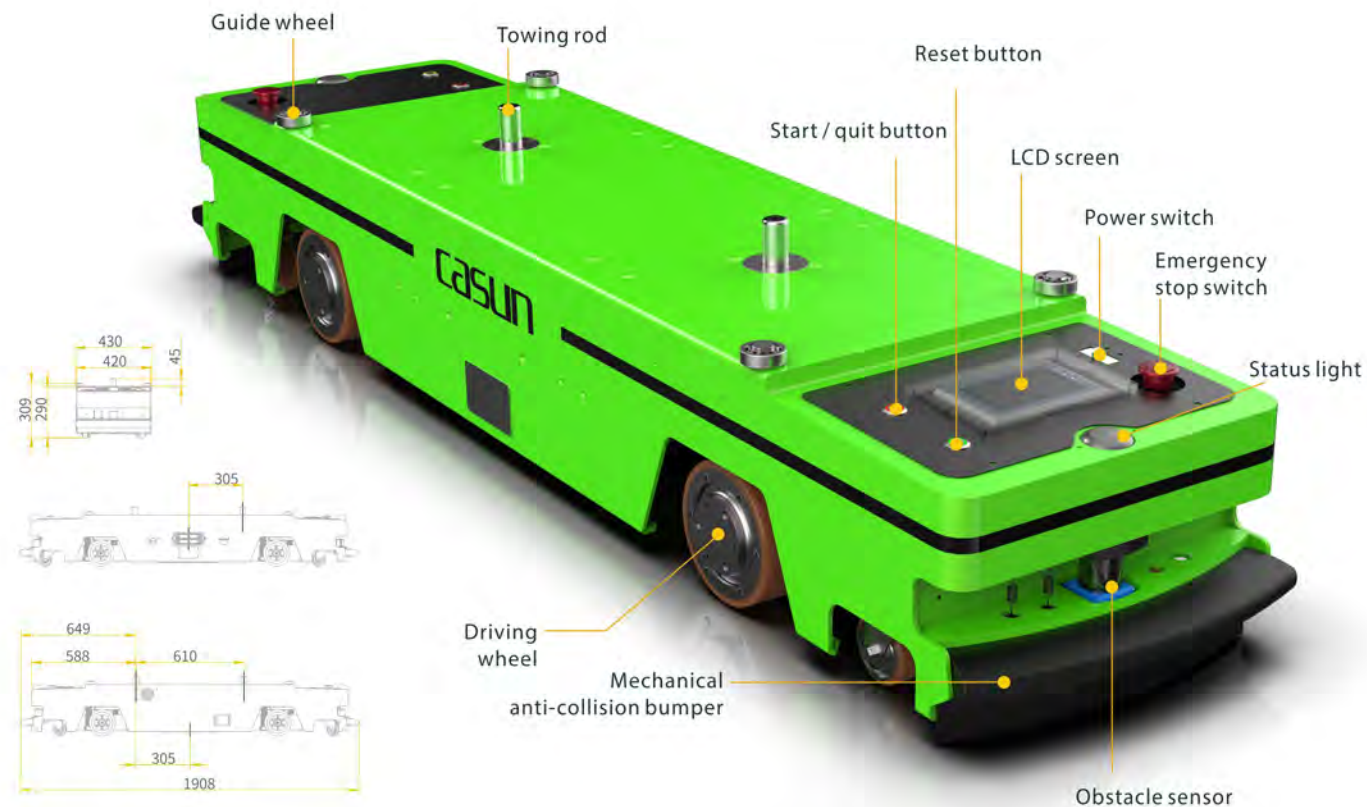
# C1-22

Automobile and Parts Industry · General Assembly Line ▶



## Product introduction

C1-22 two-way latent traction AGV is suitable for workshops with relatively fixed production processes. The working method is that the AGV automatically lurks to the bottom of the material truck after receiving system instructions, and automatically mounts the material vehicle through the traction rod to realize end-to-end terminal transport. A flow production line can also be composed of multiple AGVs to realize flexible production in the factory. At present, it has been widely used in the automobile and parts industry, new energy lithium battery industry, etc.



## Product advantages



The product performance is stable, and there are a large number of mature application cases;



The car body is flexible and the turning radius is small;



High cost performance and short delivery period;



Flexible production to ensure smooth production lines;



## Application industries and scenarios



application industry

Diversified industries such as new energy lithium batteries, automobiles and parts, machinery manufacturing, electronics, and electrical appliances.



application scenarios

Production line materials, raw materials, parts transportation, flexible production lines, etc.



## Project case - Auto parts project

Solution

Through the two-way AGV, at the site with narrow passages, by switching directions, the exchange of empty and full material trucks can be realized, and the material transfer of raw materials such as exhaust pipes and seats can be realized through special material vehicles, reducing the Materials are piled up at the edge of the production line, rational use of warehouse space, placement of empty and full parts, and increase the number of placements.

Economic benefits



### Improve efficiency

Improve operation efficiency, realize unmanned handling through AGV, and save warehouse logistics personnel;



### Space saving

Saving storage space on the production line, assisting customers to realize 5S management on the line;



### Automatic material call

Through automatic material call, point-to-point material handling can be realized, and the error rate due to manual distribution can be reduced.



CASE





## C1-24

Photovoltaic industry · Silicon rod production workshop

### Product introduction

C1-24 bidirectional latent traction AGV adopts SLAM navigation or QR code navigation. The working mode is that the AGV automatically lurk to the bottom of the trolley after receiving the system instruction, and automatically hooks the trolley through the traction bar to achieve end-to-end transfer. It can also be composed of multiple AGVs to form a flow production line to achieve flexible production in the factory. At present, it has been widely used in new energy photovoltaic, automobile and parts industry, new energy lithium battery industry.



### Product advantages

Adopt advanced SLAM navigation technology;

Adapt to a variety of tooling trucks;

High cost performance and short delivery period;



### Application industries and scenarios

application industry

Diversified industries such as automobiles, auto parts, machinery manufacturing, electronics, electrical appliances, and new energy;

application scenarios

Production line materials, raw materials, parts transportation, flexible production lines, etc.



### Project case - Lithium battery PACK line material transfer project

The factory PACK flexible production line project mainly realizes the product flow of battery packs from assembly to testing processes, and its transportation path is a circular assembly line. Through the CRMS mobile robot control system, autonomous calling, information collection, and intelligent scheduling are realized, and seamless connection with the user's production management system, line-side automation equipment, etc.

Project Difficulties: The project site has a small space, and the turning and u-turn space requirements after the AGV carries the PACK material car are high; the scheduling logic is complex, and it is necessary to perform logical judgments on various different working conditions with the client's MES system to determine the next target site of the AGV.

Solution

Economic benefits



#### TQCM

Reduce the cost of fixed equipment investment, create a flexible production line, improve production scheduling flexibility, and meet the process requirements of different products;



#### Accurate positioning

Through auxiliary positioning devices and secondary positioning tooling of automatic stations, the positioning accuracy is controlled within plus or minus 5mm;



#### Intelligent scheduling

Communicate with multiple production auxiliary systems such as MES system and PLC system to realize full-process intelligent scheduling;



CASE



# C2

## Latent Lift Series Mobile Robot

### Series introduction

The latent lifting series mobile robot performs precise positioning according to dispatching instructions, and independently completes lifting, transportation, and unloading operations. It can choose material sorting system, lifting platform, relative rotation of the body and other configurations. The series of products are divided into one-way, two-way and omni-directional according to the running direction, and the navigation method can choose QR code navigation and SLAM navigation. The maximum load can reach 1500kg.

### Application environment

-10°C ~ 45°C; no dust, flammable, explosive and corrosive gases

|            | Model                    | C2-22C                                                                                                                                                              | C2-23C                                                                                                                                                                      | C2-26C                                                                                                                                                        | C2-36B                                                                                                                                                        |
|------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                          |                                                                                  |                                                                                          |                                                                            |                                                                            |
| Basic      | Dimension                | L940*W650*H253(mm)                                                                                                                                                  | L1180*W860*H253(mm)                                                                                                                                                         | L1600*W860*H350(mm)                                                                                                                                           | L1600*W860*H350 (mm)                                                                                                                                          |
|            | Max Load Capacity        | 1000kg                                                                                                                                                              | 1500kg                                                                                                                                                                      | 1000kg / 1500kg                                                                                                                                               | 2000kg                                                                                                                                                        |
|            | Weight                   | 136kg                                                                                                                                                               | 365kg                                                                                                                                                                       | 410kg                                                                                                                                                         | 490kg                                                                                                                                                         |
|            | Rotation Diameter        | 1014mm                                                                                                                                                              | 1210mm                                                                                                                                                                      | 1820mm                                                                                                                                                        | 1820mm                                                                                                                                                        |
|            | Relative Rotation        | Yes                                                                                                                                                                 | Yes                                                                                                                                                                         | No                                                                                                                                                            | No                                                                                                                                                            |
|            | Size of Lifting Platform | 870*600(mm)                                                                                                                                                         | 1150*800(mm)                                                                                                                                                                | 1396*696(mm)                                                                                                                                                  | 1396*696 (mm)                                                                                                                                                 |
|            | Max Lifting Distance     | 60mm                                                                                                                                                                | 60mm                                                                                                                                                                        | 60mm                                                                                                                                                          | 60mm                                                                                                                                                          |
| Navigation | Navigation Mode          | QR / SLAM                                                                                                                                                           | QR / SLAM                                                                                                                                                                   | QR / SLAM                                                                                                                                                     | QR / SLAM                                                                                                                                                     |
|            | Navigation Accuracy      | ±10mm / ±15mm                                                                                                                                                       | ±10mm / ±15mm                                                                                                                                                               | ±10mm / ±15mm                                                                                                                                                 | ±10mm / ±15mm                                                                                                                                                 |
|            | Stop Accuracy            | ±5mm / ±10mm                                                                                                                                                        | ±5mm / ±10mm                                                                                                                                                                | ±5mm / ±10mm                                                                                                                                                  | ±5mm / ±10mm                                                                                                                                                  |
|            | Stop Angle Accuracy      | ±1°                                                                                                                                                                 | ±1°                                                                                                                                                                         | ±1°                                                                                                                                                           | ±1°                                                                                                                                                           |
| Movement   | Moving Direction         | Forward,Backward,Rotate                                                                                                                                             | Forward,Backward,Rotate                                                                                                                                                     | Forward,Backward,Rotate                                                                                                                                       | Forward, backward, sideways, rotating                                                                                                                         |
|            | Drive Mode               | Two-wheel differential drive                                                                                                                                        | Two-wheel differential drive                                                                                                                                                | Two-wheel differential drive                                                                                                                                  | Two-wheel rudder drive                                                                                                                                        |
|            | Accelerated Speed        | 0.5m/s <sup>2</sup>                                                                                                                                                 | 0.5m/s <sup>2</sup>                                                                                                                                                         | 0.5m/s <sup>2</sup>                                                                                                                                           | 0.3m/s <sup>2</sup>                                                                                                                                           |
|            | Max Moving Speed         | 1.5m/s                                                                                                                                                              | 1.5m/s                                                                                                                                                                      | 1.0m/s                                                                                                                                                        | 1.0m/s                                                                                                                                                        |
|            | Max Climbing Capacity    | ≤3°                                                                                                                                                                 | ≤3°                                                                                                                                                                         | ≤3°                                                                                                                                                           | ≤3°                                                                                                                                                           |
| Battery    | Battery                  | Lithium battery                                                                                                                                                     | Lithium battery                                                                                                                                                             | Lithium battery                                                                                                                                               | Lithium battery                                                                                                                                               |
|            | Charging Mode            | Ground charging / Collision charging                                                                                                                                | Ground charging / Collision charging                                                                                                                                        | Ground charging / Side charging                                                                                                                               | Ground charging / Side charging                                                                                                                               |
|            | Charging time            | ≤1H                                                                                                                                                                 | ≤1H                                                                                                                                                                         | ≤1H                                                                                                                                                           | ≤1H                                                                                                                                                           |
|            | Rated Duration           | 4H(can be expanded)                                                                                                                                                 | 8H                                                                                                                                                                          | 8H                                                                                                                                                            | 8H                                                                                                                                                            |
| Network    | Communication mode       | WiFi / 5G                                                                                                                                                           | WiFi / 5G                                                                                                                                                                   | WiFi / 5G                                                                                                                                                     | WiFi / 5G                                                                                                                                                     |
| Protective | Security Alarm           | Light warning , Voice broadcast                                                                                                                                     | Light warning , Voice broadcast                                                                                                                                             | Light warning , Voice broadcast                                                                                                                               | Light warning , Voice broadcast                                                                                                                               |
|            | Security Sensing Range   | ≤3m adjustable                                                                                                                                                      | ≤3m adjustable                                                                                                                                                              | ≤3m adjustable                                                                                                                                                | ≤3m adjustable                                                                                                                                                |
|            | Safety Protection        | <ul style="list-style-type: none"> <li>• Front obstacle detection sensor</li> <li>• Mechanical anti-collision mechanism</li> <li>• Emergency stop switch</li> </ul> | <ul style="list-style-type: none"> <li>• Front and rear bstacle detection sensor</li> <li>• Mechanical anti-collision mechanism</li> <li>• Emergency stop switch</li> </ul> | <ul style="list-style-type: none"> <li>• Diagonal obstacle sensor,</li> <li>• Mechanical anti-collision mechanism</li> <li>• Emergency stop switch</li> </ul> | <ul style="list-style-type: none"> <li>• Diagonal obstacle sensor,</li> <li>• Mechanical anti-collision mechanism</li> <li>• Emergency stop switch</li> </ul> |



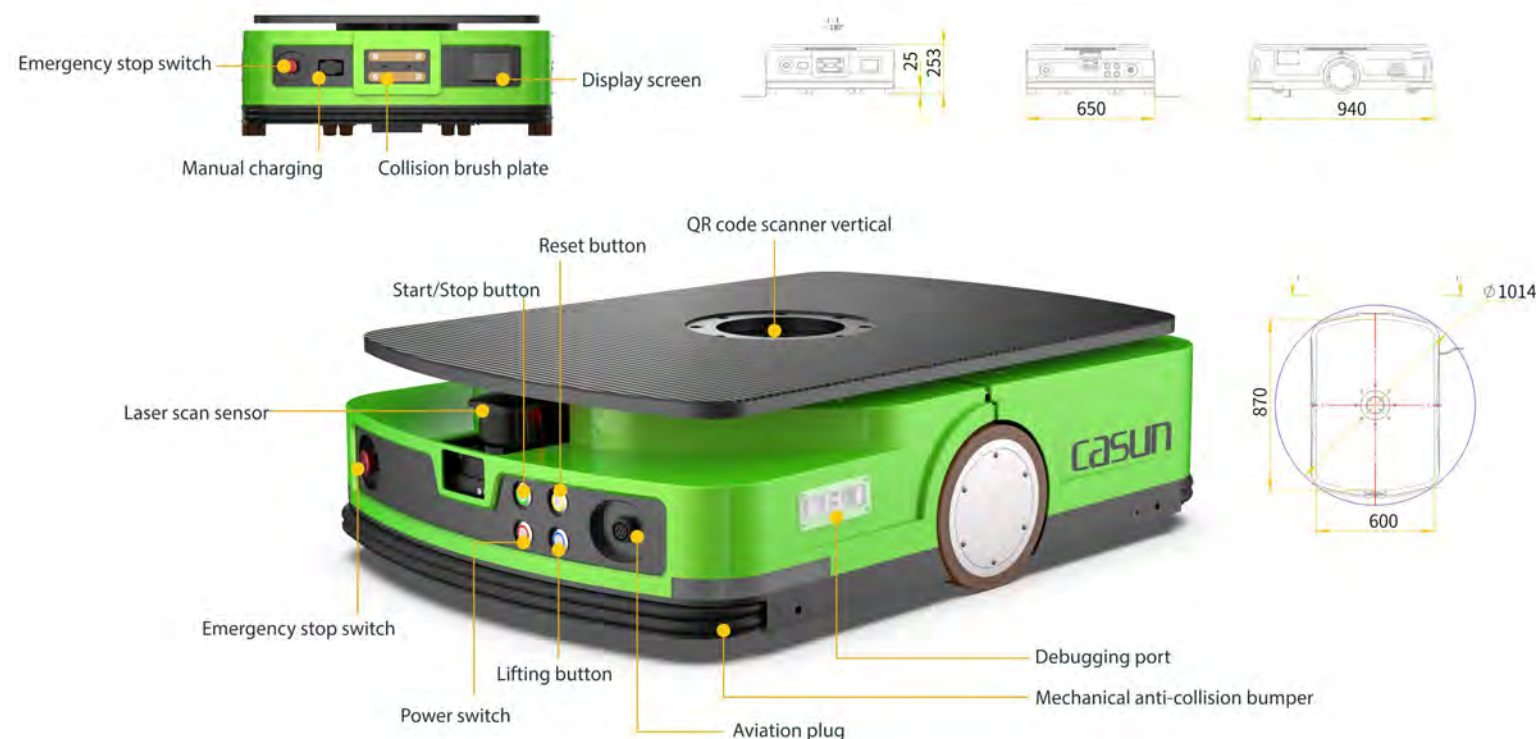
# C2-22C

Logistics and Circulation Industry Goods-to-Person Picking



## Product introduction

C2-22C is a latent lifting AGV. It uses trackless navigation and can change the route according to on-site production changes. The model is small and compact, and the load can reach 1000KG after upgrading. The body and the lift plate can be rotated relative to each other. Working method: After the AGV receives the system command, the AGV lurks to the bottom of the material rack, lifts the material rack up, and carries out material transportation; it can also be composed of multiple AGVs to form a mobile production line to achieve flexible production. It has been widely used in automobiles and spare parts Parts industry, photovoltaic industry, 3C and semiconductor industries.



## Product advantages

- The body height is smaller, suitable for lower space operation;
- It can be used as a flexible production line to ensure smooth production;
- Composite navigation can be used, and the docking accuracy is high;
- With the function of relative rotation, the flexibility is higher;

## Application industries and scenarios

- application industry**  
Diversified industries such as photovoltaics, automobiles and parts, logistics and distribution, electronics, and electrical appliances.
- application scenarios**  
Goods-to-person selection, production line raw materials, end-to-end transportation of parts and components, forming a flexible production line, etc.

## Project case - Automobile Huizhou flexible production line workshop project

The factory flexible production line project mainly realizes the production line flow of materials from the warehouse to the production line and other processes, and its transport path is a circular assembly line. The storage/picking operation can be carried out according to the autonomous navigation of the system tasks, which improves the work efficiency, reduces the labor cost and errors, and solves the problems of difficult manual handling, low handling efficiency and high handling risk.

- TQCM**  
Realize the conveying of materials; It is mostly used for the transfer of material racks and material trucks, effectively reducing the cost of human resources and reducing the labor intensity.
- High reliability**  
Improve the health rate and accuracy rate, reduce material damage during the handling process, and reduce the unhealthy rate by 90%.
- Increase capacity**  
Seamlessly connect with WMS system, realize optimization of storage location, route, and task allocation, rationally plan warehouse layout, maximize use of space, and increase warehouse location by 20%.
- Intelligent logistics**  
To realize the intelligent logistics in the field, to realize the optimization of storage location, path, task allocation, and information of the whole process;



CASE



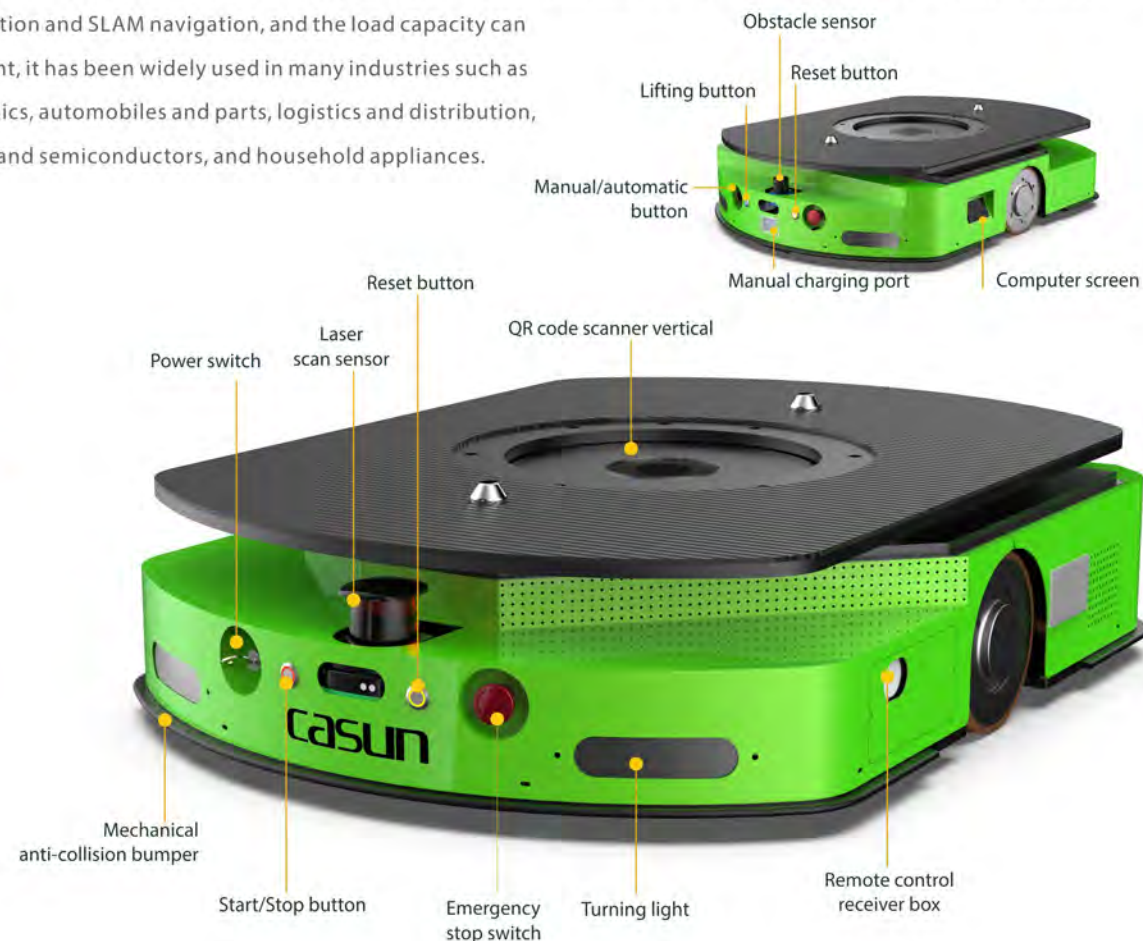
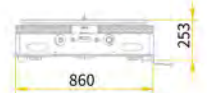
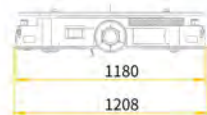
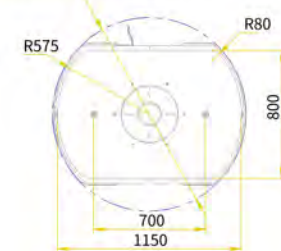


C2-23C

Photovoltaic industry-Sorting of cell raw materials

## Product introduction

C2-23C performs precise positioning according to dispatching tasks, and independently completes a series of operations of lifting, transportation, and unloading. It can choose material sorting system, platform, and body relative rotation configuration, etc. This series is divided into one-way, two-way and omni-directional according to the running direction of the mobile robot. The navigation method can choose QR code navigation and SLAM navigation, and the load capacity can reach 1500kg. At present, it has been widely used in many industries such as new energy photovoltaics, automobiles and parts, logistics and distribution, food and beverage, 3C and semiconductors, and household appliances.

AGV rotation diameter  $\varnothing 1210$ 

## Product advantages



The product performance is stable, and there are a large number of mature application cases;



The car body is flexible and the turning radius is small;



High delivery timeliness and high cost performance;



Flexible production to ensure smooth production lines;

## Application industries and scenarios

### application industry

New energy photovoltaics, automobiles and parts, logistics and distribution, electronics and electrical, medical and other industries.

### application scenarios

Production line materials, raw materials, parts transportation, goods-to-person selection, flexible production lines, etc.

## Project case - Cargo sorting project in a finished tobacco warehouse workshop

### Solution

This project is mainly used in the storage and sorting process of finished products in the tobacco industry. It mainly uses mobile robots to realize automatic handling and manipulator docking to realize automatic storage and sorting work; through the use of mobile robots, a certain tobacco logistics greatly reduces the number of personnel and labor intensity, and replaces manual labor for tedious and repetitive warehousing and warehousing actions.

In addition, the mobile robot is automatically docked with various process production equipment, which connects the production process links in series and realizes factory automation.

### Economic benefits



#### Improve efficiency

Flexible production line, the rate of on-site change is increased, and the incompatibility of the production line caused by changes in production orders is reduced.



#### Increase capacity

Seamlessly connect with WMS system, realize optimization of storage location, route, and task allocation, rationally plan warehouse layout, maximize use of space, and increase warehouse location by 20%.



#### Intelligent Scheduling

The storage information data of the warehouse location, inbound and outbound tasks, and on-site inbound and outbound equipment (mechanical arms, stacking machines, manual warehousing operation terminals, etc.) are managed by the customer's WMS system to monitor the status of factory materials in real time.



#### Cost saving

Reduce the number of operations by personnel, reduce the intensity of manual labor, reduce the rate of operational errors, improve the flexible process, and save a lot of labor costs.



CASUN



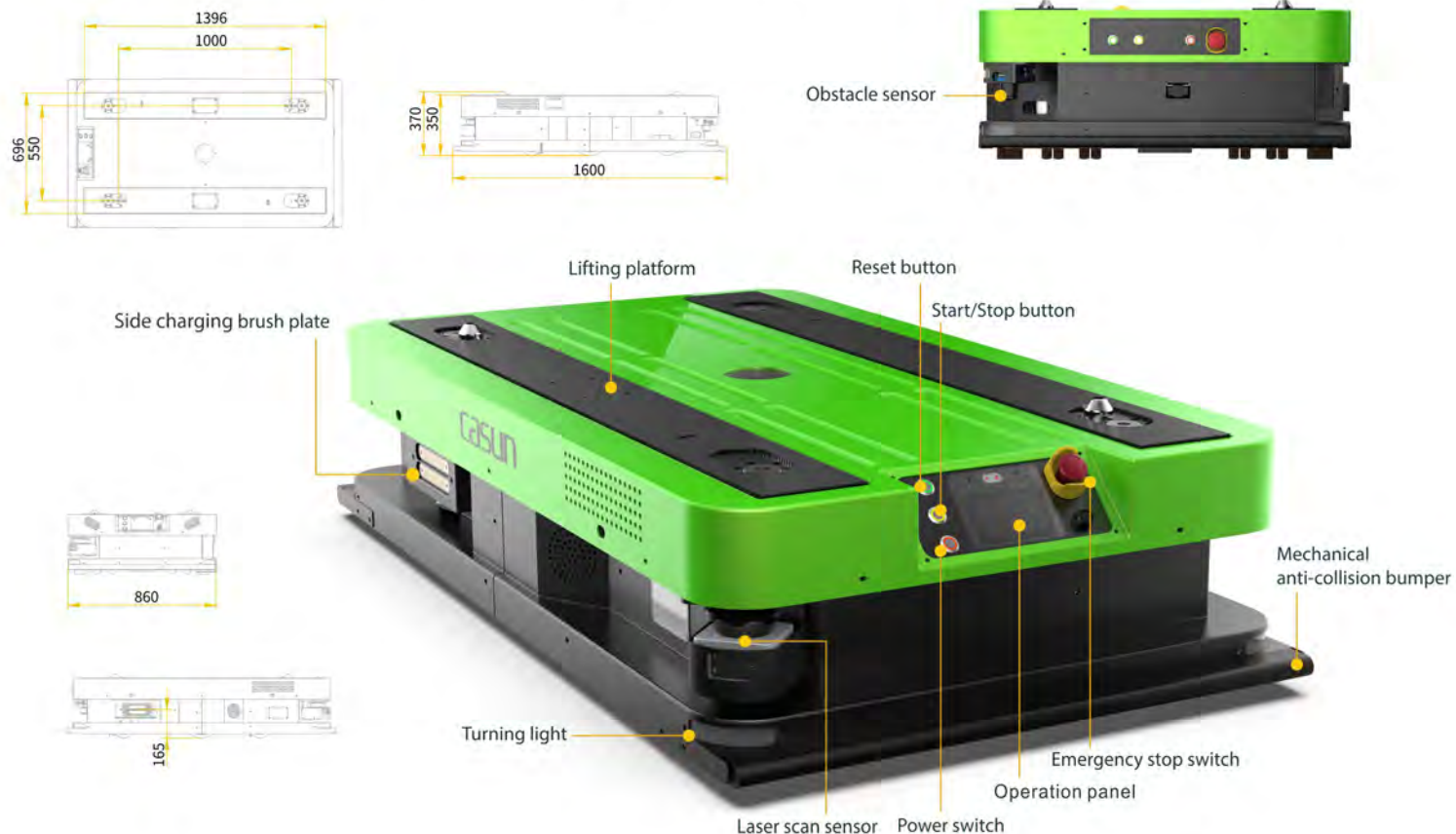


# C2-26C

New energy lithium battery industry PACK line

## Product introduction

C2-26C two-way latent lifting mobile robot is suitable for workshops with relatively fixed production processes. The working method is: the mobile robot automatically lurks to the bottom of the material truck after receiving system instructions, and docks with the material vehicle through the lifting platform. Realize end-to-end transfer. A mobile production line can also be composed of multiple mobile robots to achieve flexible production in the factory. At present, the most widely used is the application scenario of the PACK line in the new energy lithium battery industry.



## Product advantages



The product performance is stable, and there are a large number of mature application cases;



Adapt to the lithium battery industry, tailor-made;



Flexible production to ensure smooth production lines;



## Application industries and scenarios



application industry

Diversified industries such as new energy lithium batteries, automobiles, auto parts, and machinery manufacturing.



application scenarios

End-to-end transportation of production line materials, raw materials and parts, forming a flexible production line, etc.



## Project case - Lithium battery PACK line project

Solution

The factory PACK line transfer project mainly realizes the material transfer between various processes such as battery pack assembly, test and packaging, and its operation process is a circular assembly line. Through the CRMS mobile robot control system to achieve autonomous material, intelligent handling, information collection, intelligent storage, and seamless connection with the user's production management system.

Economic benefits



### Reduce cost

Reduce the input cost of fixed equipment: create flexible production lines to improve the flexibility of production scheduling;



### High reliability

Improve the yield and accuracy: reduce the material damage in the handling process, the defective rate is reduced by 90%;



### Accurate positioning

Improve the transportation positioning accuracy: the transportation accuracy is increased to 99% to meet the peak demand of full production of the whole line;



### Logistics intelligence

To realize the intelligent logistics: to realize the optimization of warehouse location, path, task allocation, and the whole process informatization.



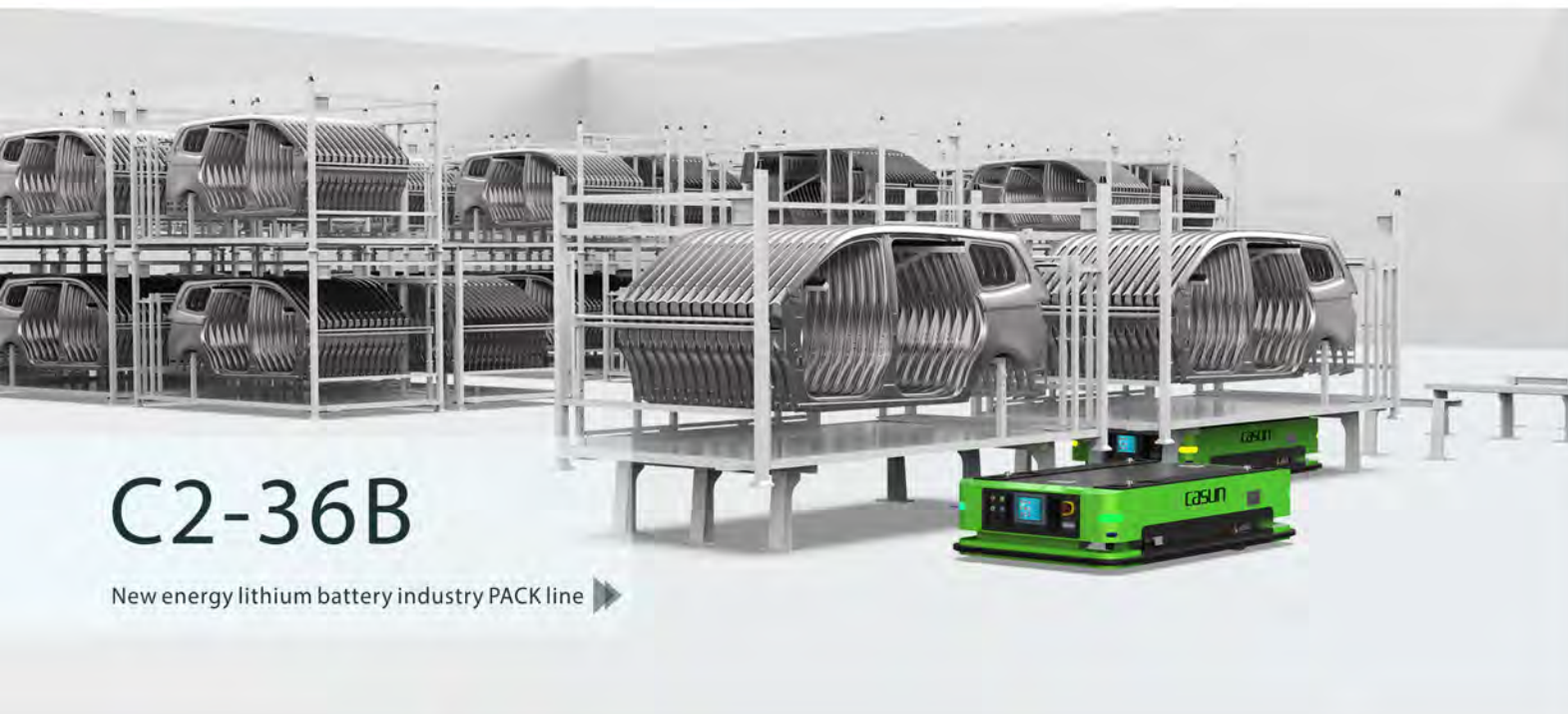
### Strong fit

Combined with supporting vehicles can meet the production line of a variety of products.



CASUN



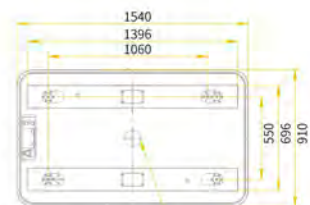


## C2-36B

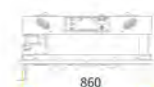
New energy lithium battery industry PACK line ▶

### Product introduction

C2-36B is a latent lifting AGV, equipped with omnidirectional drive, using QR code navigation, and the load can reach 1500KG. The model is compact and the lifting stroke is 60mm. Working method: After the AGV receives the system command, the AGV lurks to the bottom of the material rack, lifts the material rack, and carries out material transportation; it can also be composed of multiple AGVs to form a mobile production line to achieve flexible production. It has been widely used in new energy lithium batteries, automobile and parts industry, photovoltaic industry, 3C and semiconductor industry.



Upsweep code plane lift platform: 30mm, Scanning range: 95-110(mm)



### Product advantages



The product performance is stable, and there are a large number of mature application cases;



Omnidirectional operation, 360-degree safety protection;



Flexible production, which can be adapted to battery packs of various specifications.



### Application industries and scenarios



application industry

New energy lithium batteries, automobiles, auto parts, machinery manufacturing and other diversified industries;



application scenarios

PACK line, raw materials of production line, end-to-end transportation of parts and components, forming a flexible production line, etc.



### Project case -Lithium battery PACK line project

It mainly realizes the product transfer between battery packs from assembly to testing to packaging, and its operation process is a circular flexible production line. Through the system, autonomous ordering of materials, intelligent handling, information collection, and intelligent storage are realized, and it is seamlessly connected with the user's production management system.

Difficulties of the project: This project mainly solves the function of the AGV carrying the PACK material car to realize the lateral movement, reduces the space of the PACK material car running channel, and at the same time ensures that the orientation of the PACK material car is consistent with the site; secondly, it solves the problem Explain the technical difficulties of docking various peripheral equipment systems: such as MES docking of manual stations, test equipment, manipulators, safety grating docking of automatic stations, etc.

Solution

Economic benefits



#### Cost reduction

Reduce the investment cost of fixed equipment: create a flexible production line and improve the flexibility of production scheduling.



#### High reliability

Improve the health rate and accuracy rate, reduce material damage during the handling process, and reduce the unhealthy rate by 90%



#### Precise positioning

Improve the positioning accuracy of transportation, and the transportation accuracy rate is increased to 99%, which meets the peak demand of full production of the whole line;



#### Intelligent logistics

Realize intelligent on-site logistics: Realize optimization of warehouse locations, routes, and task allocation, and informatization of the entire process.



CASE



# C3

## Unit load AGV with conveyor series



### Series introduction

The mobile robot of the piggyback transfer series can autonomously navigate to the docking body according to the scheduling task, and realize the fully automatic transfer of materials. This series is divided into single station and multi-station according to the number of product stations. The navigation method can choose QR code navigation, laser positioning navigation, and SLAM navigation. This series of mobile robots are widely used, compact in structure, flexible in operation and high in automation.



### Application environment

-10°C ~ 45°C; no dust, flammable, explosive and corrosive gases

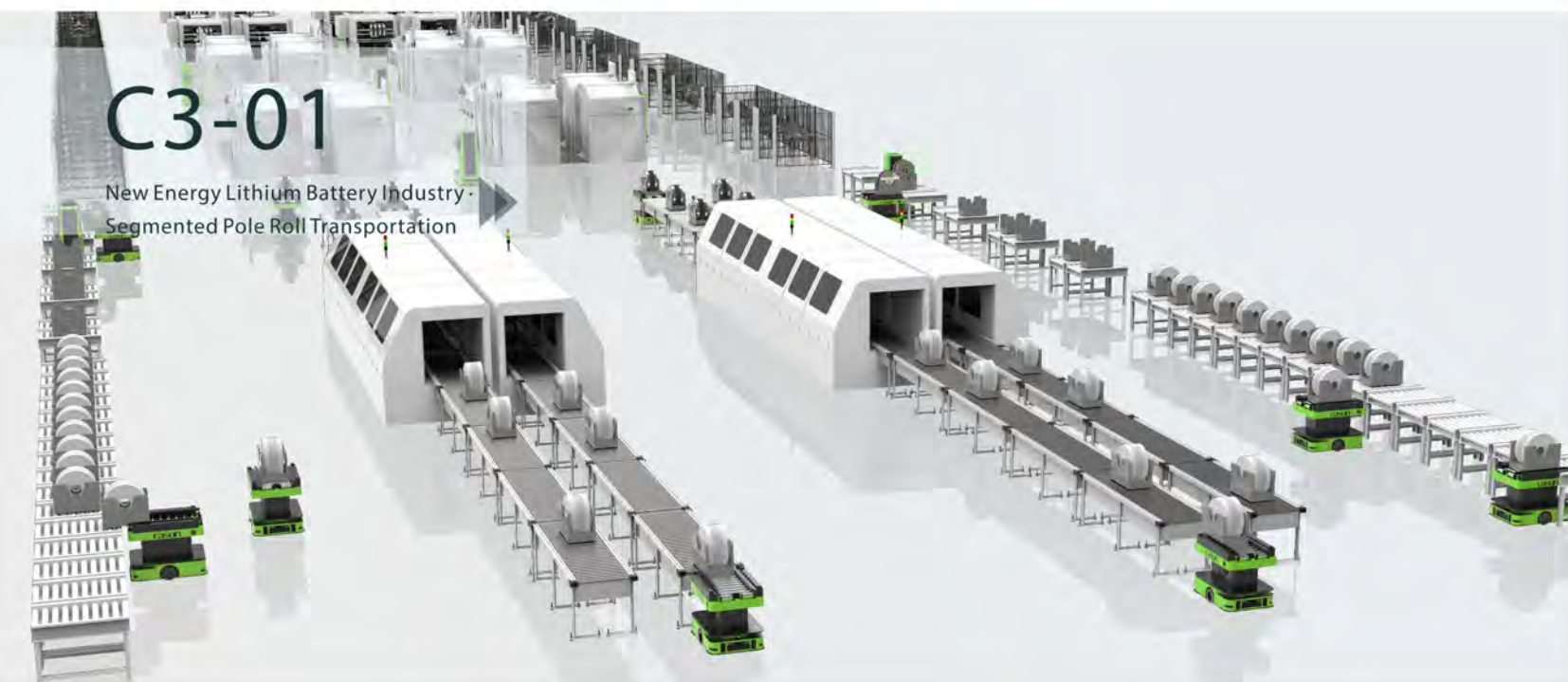


|            | Model                     | C3-01                                                                                                 | C3-04                                                                                           | C3-05                                                                                           | C3-11                                                                                                          | C3-16                                                                                                          |
|------------|---------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|            |                           |                    |              |              |                             |                             |
| Basic      | Dimension                 | L940*W680*H755 (mm)                                                                                   | L1550*W950*H2150 (mm)                                                                           | L1550*W950*H1500 (mm)                                                                           | L1540*W1100*H1555 (mm)                                                                                         | L1374*W1274*H775 (mm)                                                                                          |
|            | Max loading capacity      | 100kg                                                                                                 | 300kg                                                                                           | 300kg                                                                                           | 1000kg                                                                                                         | 1000kg                                                                                                         |
|            | Vehicle weight            | 300kg                                                                                                 | 485kg                                                                                           | 440kg                                                                                           | 400kg                                                                                                          | 400kg                                                                                                          |
|            | Rotation diameter         | 1250mm                                                                                                | 1725mm                                                                                          | 1725mm                                                                                          | 1780mm                                                                                                         | 1780mm                                                                                                         |
|            | Docking height            | 820mm                                                                                                 | Lower-450mm, Upper-1300mm                                                                       | Lower-450mm, Upper-1000mm                                                                       | 500mm                                                                                                          | 600mm                                                                                                          |
|            | Material supporting size  | 700*450mm                                                                                             | Single 5, maximum 10 full 10 empty                                                              | Single 5, maximum 10 full 10 empty                                                              | 1200*800mm                                                                                                     | 1200*1000mm                                                                                                    |
|            | Docking direction         | Forward, Backward                                                                                     | Backward                                                                                        | Backward                                                                                        | Forward, Backward                                                                                              | Left, right                                                                                                    |
| Navigation | Material transfer mode    | Roller                                                                                                | Belt                                                                                            | Belt                                                                                            | Roller                                                                                                         | Belt                                                                                                           |
|            | Navigation mode           | QR / SLAM                                                                                             | SLAM                                                                                            | SLAM                                                                                            | QR / Laser / SLAM                                                                                              | QR / Laser / SLAM                                                                                              |
|            | Navigation accuracy       | ±10mm / ±15mm                                                                                         | ±10mm                                                                                           | ±10mm                                                                                           | ±10mm / ±10mm / ±15mm                                                                                          | ±10mm / ±10mm / ±15mm                                                                                          |
|            | Stop accuracy             | ±5mm / ±10mm                                                                                          | ±5mm                                                                                            | ±5mm                                                                                            | ±5mm / ±10mm / ±10mm                                                                                           | ±5mm / ±10mm / ±10mm                                                                                           |
| Movement   | Stop Angle accuracy       | ±1°                                                                                                   | ±1°                                                                                             | ±1°                                                                                             | ±1°                                                                                                            | ±1°                                                                                                            |
|            | Traveling direction       | Forward, Backward, Rotate                                                                             | Forward, Backward, Rotate                                                                       | Forward, Backward, Rotate                                                                       | Forward, Backward, Rotate                                                                                      | Forward, Backward, Rotate                                                                                      |
|            | Drive mode                | Two-wheel differential drive                                                                          | Two-wheel differential drive                                                                    | Two-wheel differential drive                                                                    | Two-wheel differential drive                                                                                   | Two-wheel differential drive                                                                                   |
|            | Acceleration              | 0.5m/s <sup>2</sup>                                                                                   | 0.3m/s <sup>2</sup>                                                                             | 0.3m/s <sup>2</sup>                                                                             | 0.35m/s <sup>2</sup>                                                                                           | 0.35m/s <sup>2</sup>                                                                                           |
|            | Max running speed         | 1.5m/s                                                                                                | 1.2m/s                                                                                          | 1.2m/s                                                                                          | 1.2m/s                                                                                                         | 1.2m/s                                                                                                         |
| Battery    | Maximum climbing capacity | ≤3°                                                                                                   | ≤3°                                                                                             | ≤3°                                                                                             | ≤3°                                                                                                            | ≤3°                                                                                                            |
|            | Battery type              | Lithium battery                                                                                       | Lithium battery                                                                                 | Lithium battery                                                                                 | Lithium battery                                                                                                | Lithium battery                                                                                                |
|            | Charging mode             | Collision charging                                                                                    | Collision charging                                                                              | Collision charging                                                                              | Side charging                                                                                                  | Side charging                                                                                                  |
|            | Charging time             | ≤1H                                                                                                   | ≤1H                                                                                             | ≤1H                                                                                             | ≤1H                                                                                                            | ≤1H                                                                                                            |
| Network    | Rated endurance           | 4H                                                                                                    | 8H                                                                                              | 8H                                                                                              | 8H                                                                                                             | 8H                                                                                                             |
|            | Communication mode        | WiFi / 5G                                                                                             | WiFi / 5G                                                                                       | WiFi / 5G                                                                                       | WiFi / 5G                                                                                                      | WiFi / 5G                                                                                                      |
| Protective | Safety warning            | • Light warning<br>• Voice broadcast                                                                  | • Light warning<br>• Voice broadcast                                                            | • Light warning<br>• Voice broadcast                                                            | • Light warning<br>• Voice broadcast                                                                           | • Light warning<br>• Voice broadcast                                                                           |
|            | Safe sensing range        | ≤3m adjustable                                                                                        | ≤3m adjustable                                                                                  | ≤3m adjustable                                                                                  | ≤3m adjustable                                                                                                 | ≤3m adjustable                                                                                                 |
|            | Safety protection         | • Front obstacle detection sensor<br>• Mechanical anti-collision mechanism<br>• Emergency stop switch | • Diagonal obstacle sensor,<br>• Mechanical anti-collision mechanism<br>• Emergency stop switch | • Diagonal obstacle sensor,<br>• Mechanical anti-collision mechanism<br>• Emergency stop switch | • Front and rear obstacle detection sensor<br>• Mechanical anti-collision mechanism<br>• Emergency stop switch | • Front and rear obstacle detection sensor<br>• Mechanical anti-collision mechanism<br>• Emergency stop switch |



# C3-01

New Energy Lithium Battery Industry -  
Segmented Pole Roll Transportation



## Product introduction

C3-01 is a roller-carrying mobile robot, which can use QR code navigation, laser positioning navigation, and SLAM navigation technology. Load capacity is 100kg. Double-layer workstations can realize fast interaction between empty and full materials. It can be widely used in new energy lithium battery, new energy photovoltaic, injection molding industry, 3C and semiconductor, flat panel display and other industries.



## Product advantages



Adopt the most advanced  
SLAM navigation  
technology;



It adopts double-layer drum design, matching  
with the double-layer drum line of the  
injection molding machine, and automatically  
completes the empty and full exchange;



The car body is flexible and the  
turning radius is small; it cooperates  
with the injection molding machine  
to realize the unmanned operation  
of the process;



## Application industries and scenarios



application industry

New energy lithium battery, injection molding industry,  
3C and semiconductor, LCD panel and other industries.



application scenarios

The process scene where the material of the material  
box type is docked by the roller



## Project case - 3C injection molding workshop project

Solution

19 injection molding machines transfer the injection molded parts between 4 assembly machines; through the CRMS mobile robot control system, autonomous ordering, intelligent handling, information collection, and intelligent storage are realized, and there is no connection with the user's production management system. Seam docking, unmanned operation throughout the process.

Difficulties of the project: This project mainly solves the technical difficulties in the docking of various peripheral equipment systems, such as transmission equipment, robotic arms, etc.; secondly, it accurately realizes the priority logic judgment of the operation of the mobile robot, according to the sequence of different stations In order, the CRMS system automatically selects and determines the most suitable transportation route.

Economic benefits



Realize unmanned

Build a black lamp factory,  
dock with injection molding  
machine robots and  
conveyor lines, and realize  
unmanned chemical  
factories.



Data interaction and sharing

Interaction with Party A's equipment  
and systems: CRMS system can be  
seamlessly connected with on-site  
automation equipment systems and  
customer systems to realize data  
transmission.



Intelligent logistics

Warehouse location storage information data, inbound  
and outbound tasks, and onsite inbound and outbound  
equipment (mechanical arms, stacking machines, manual  
warehousing operation terminals, etc.) are managed by  
the customer's WMS system to monitor the status of  
factory materials in real time.



CASE



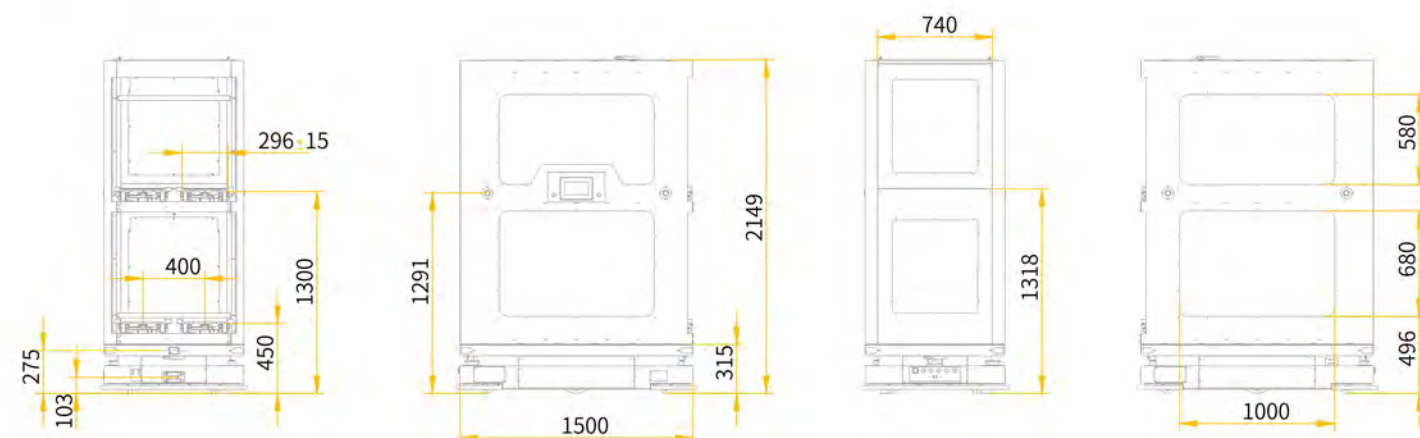
# C3-04

The basket automatic loading and unloading



## Product introduction

C3-04, mainly used in photovoltaic industry cell production workshop, the basket automatic loading and unloading. The navigation mode is SLAM navigation, the load capacity is 300kg, and the maximum speed is 1.2m/s. The working mode is that after receiving the system instruction, the AGV can automatically dock and transport the basket. The AGV basket structure designing has reserved the configuration space of wet basket operation, and can be designed and developed according to the technical requirements of wet basket (acid, alkali and pollution prevention).



## Product advantages

Using advanced SLAM+ visual navigation technology;

Double-layer and double-track transmission, which can improve production efficiency;

Adopt type structure, 360° obstacle avoidance, and ensure production safety

## Application industries and scenarios

### application industry

Photovoltaic industry, 3C and semiconductor, LCD panel and other industries.

### application scenarios

Process scenario of automatic loading and unloading and box type materials docking through the conveyor line





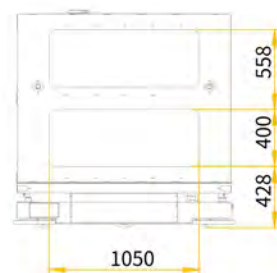
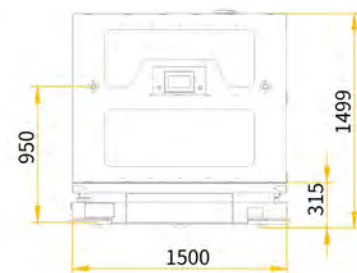
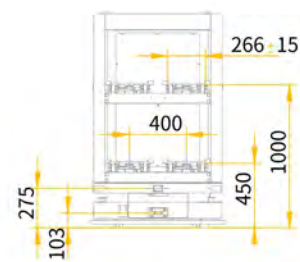
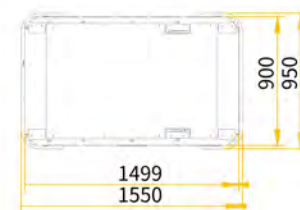
# C3-05

BIN box automatic loading and unloading



## Product introduction

C3-05, is mainly used for photovoltaic industry cell production workshop, BIN box automatic loading and unloading. The navigation mode is SLAM+ visual navigation, the loading capacity is 300kg, and the maximum speed is 1.2m/s. After receiving the system instruction, the AGV automatically interconnects and transports the BIN box.



## Product advantages



Using advanced SLAM+ visual navigation technology;



Double-layer and double-track transmission, which improve production efficiency;



Adopt type structure, 360° obstacle avoidance, and ensure production safety



## Application industries and scenarios



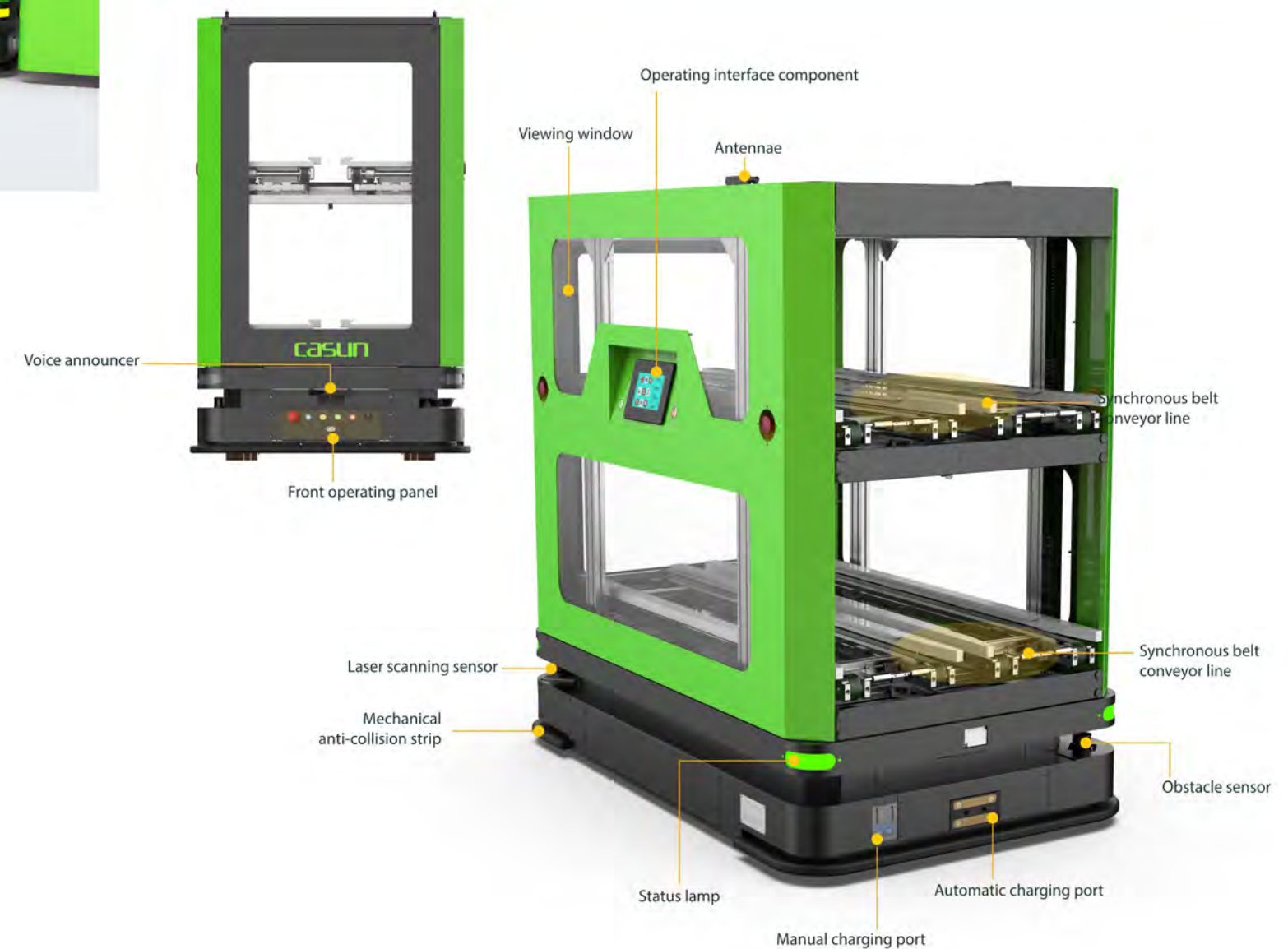
application industry

Photovoltaic industry, 3C and semiconductor, LCD panel and other industries.



application scenarios

BIN box automatic loading and unloading process scenarios. Bin type Materials are docking through transport cables







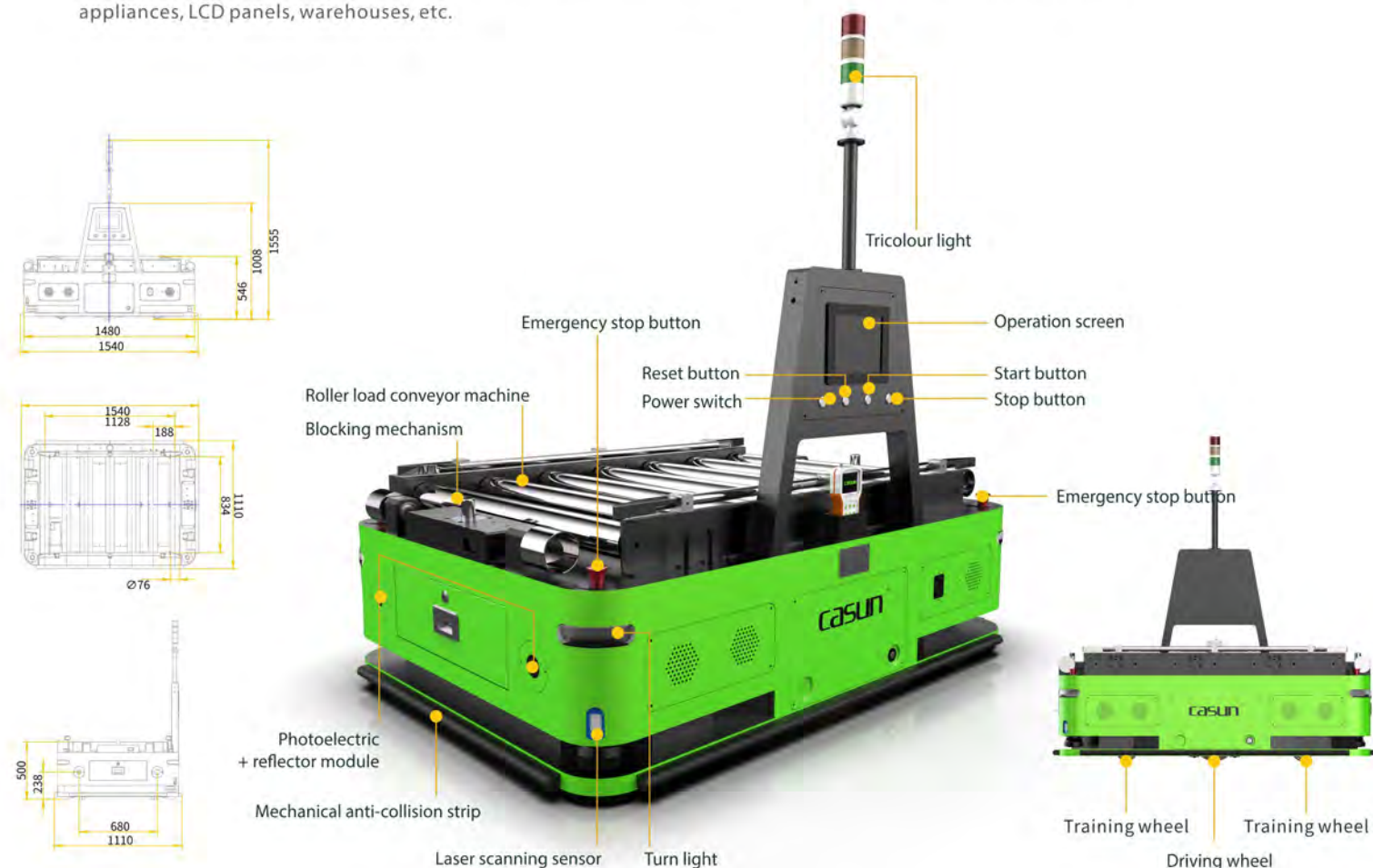
C3-11

3C semiconductor industry · Manufacturing workshop



## Product introduction

C3-11 is a backpack roller AGV that can use QR code navigation, laser positioning navigation, SLAM navigation technology, and has a load capacity of 1000KG. It can be widely used in industries such as automobiles, lithium batteries, home appliances, LCD panels, warehouses, etc.



## Product advantages

R code navigation, laser navigation, SLAM navigation are optional;

Accurate positioning and flexible scheduling logic;

Flexible vehicle body, small turning radius, and small requirements for operating channels.



## Application industries and scenarios

application industry

automobiles and parts, new energy, 3C semiconductors, manufacturing, logistics and transportation

application scenarios

Suitable for logistics and transportation of various products between conveyor lines



## Project case - Romania Lighthouse Factory Intelligent Logistics Project

Solution

The project is used in a certain foreign home appliance industry. It uses a QR code navigation roller transfer AGV vehicle to mainly realize the intelligent transfer of customers' semi-finished pallets and finished pallets from the production line to the stereoscopic warehouse; through the CRMS mobile robot control system and the stereoscopic warehouse WMS system communication docking, the system can realize autonomous material calling, intelligent handling, information collection, and intelligent storage, and meet the customer's logistics automation, information automation and other needs. The project was rated as a "lighthouse factory".

Economic benefits

### Improve automation

Improve the degree of factory automation and establish industry benchmarks.

### Data interaction and sharing

Digital management, combined with intelligent logistics, improve product quality and increase economic benefits.

### Intelligent logistics

Create unmanned factories, reduce labor costs, and reduce labor intensity.



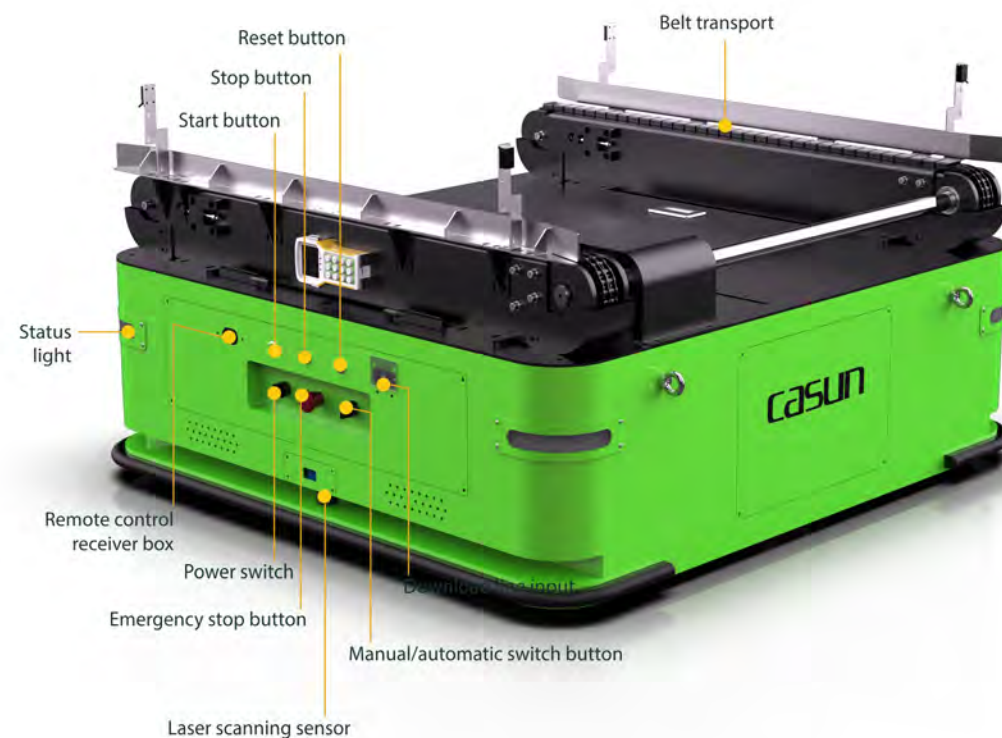
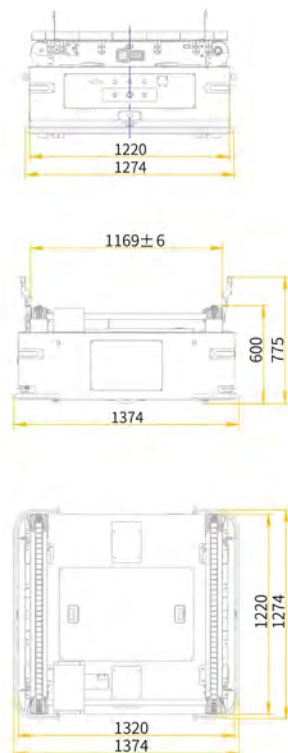
CASE





## Product introduction

C3-16 is a back-mounted plate chain AGV that can use QR code navigation and SLAM navigation technology, with a load capacity of 1000KG. It can be widely used in automobiles and parts, lithium batteries, 3C semiconductors, home appliances and other industries.



## Product advantages



QR code navigation, laser navigation, SLAM navigation are optional;



Accurate positioning and high operating efficiency;



Space saving and small requirements for operating channels.



## Application industries and scenarios



application industry

automobiles and parts, new energy, 3C semiconductors, logistics and transportation;



application scenarios

Suitable for logistics transportation of pallets between various conveyor lines.



## Project case - A lithium power battery module transportation project

The piggyback transmission method is adopted to mainly realize the automatic transportation function of the module pallet. Through the CRMS mobile robot control system, the system realizes autonomous material calling, intelligent handling, information collection, and intelligent storage, and seamlessly connects with the user's production management system and line-side control system.

Project Difficulties: 1. This project mainly solves the technical difficulties of docking with the line conveyor line, such as accuracy; 2. It solves the problem of narrow space. By planning the path plan, it avoids route congestion and improves distribution efficiency;

Solution

Economic benefits



### Improved management benefits

AGVs are self-driving and do not require drivers. They can self-diagnose and are easy to repair after a failure. The AGV system can achieve intelligent scheduling, avoiding collisions between many vehicles during operation and saving personnel management costs;



### Reduce costs & increase efficiency

Improve the yield rate and accuracy, and reduce material damage during transportation;



### Technical benefits

AGVs can be used as flexible working platforms to meet the ever-changing new process requirements and promote technological upgrades;



CASE



# C5

## Intelligent forklift mobile robot



### Series introduction

Intelligent forklift series mobile robots are divided into handling type and stacking type. The navigation method of the intelligent forklift series adopts laser positioning and navigation. This series of products has a high degree of intelligence and is widely used in many industries such as new energy lithium batteries, automobiles and parts, flat panel displays, food and beverage, 3C and semiconductors, household appliances, home textiles, etc. And new scenarios such as warehouse entry and exit, loading and unloading, and material transfer in logistics and circulation.



### Application environment

-10°C ~ 45°C; no dust, flammable, explosive and corrosive gases.

|                    | Model                           | C5-B2 Handling Type                                                                                                                                                       | C5-B6 Handling Type                                                                                                                                                           | C5-D1 Stacking Type                                                                                                                                                           | C5-Q4 Forward type                                                                                                                                                            | C5-Q5 Forward type                                                                                                                                                            | C5-P2 Counterweight type                                                                                                                                                      |
|--------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                 |                                                                                        |                                                                                            |                                                                                            |                                                                                            |                                                                                            |                                                                                            |
| Basic              | Dimension                       | L1585*W780*H2035 (mm)                                                                                                                                                     | L1120*W600*H788(mm)                                                                                                                                                           | L1653*W856*H2295 (mm)                                                                                                                                                         | L4458*W1800*H2476 (mm)                                                                                                                                                        | L2670*W1450*H2365 (mm)                                                                                                                                                        | L2408*W1015*H1920 (mm)                                                                                                                                                        |
|                    | Fork size                       | 1170*188*55 (mm)                                                                                                                                                          | /                                                                                                                                                                             | 1150*188*55 (mm)                                                                                                                                                              | 1150*100*45 (mm)                                                                                                                                                              | 1070*122*40 (mm)                                                                                                                                                              | 1070*100*40 (mm)                                                                                                                                                              |
|                    | Fork outside distance           | 570mm/680mm                                                                                                                                                               | /                                                                                                                                                                             | 570mm/680mm                                                                                                                                                                   | 316mm-710mm                                                                                                                                                                   | 250mm-772mm                                                                                                                                                                   | 200mm-660mm                                                                                                                                                                   |
|                    | Max load capacity               | 1000kg                                                                                                                                                                    | 500kg                                                                                                                                                                         | 1000kg                                                                                                                                                                        | 2000kg                                                                                                                                                                        | 2000kg                                                                                                                                                                        | 600kg                                                                                                                                                                         |
|                    | Truck weight (battery included) | 400kg                                                                                                                                                                     | 392kg                                                                                                                                                                         | 600kg                                                                                                                                                                         | 3300kg                                                                                                                                                                        | 3350kg                                                                                                                                                                        | 1650kg                                                                                                                                                                        |
|                    | Turning radius                  | 1350mm                                                                                                                                                                    | 1500mm                                                                                                                                                                        | 1350mm                                                                                                                                                                        | 2000mm                                                                                                                                                                        | 2200mm                                                                                                                                                                        | 1600mm                                                                                                                                                                        |
| Applicable carrier | Lifting height                  | 120mm                                                                                                                                                                     | 120mm                                                                                                                                                                         | 1600mm                                                                                                                                                                        | 5755mm                                                                                                                                                                        | 3000mm                                                                                                                                                                        | 3000mm                                                                                                                                                                        |
|                    | Pallet type                     | Two-way Entry                                                                                                                                                             | Small skip car                                                                                                                                                                | Two-way Entry                                                                                                                                                                 | Two-way Entry, Field pallet                                                                                                                                                   | Coil stock                                                                                                                                                                    | Two-way Entry, Field pallet                                                                                                                                                   |
| Navigation         | Pallet size                     | 1200*1000 / 1100*1100(mm)                                                                                                                                                 | L840*W540*H770(mm)                                                                                                                                                            | 1200*1000 / 1100*1100(mm)                                                                                                                                                     | 1200*1000 / 1100*1100(mm)                                                                                                                                                     | Coil diameter 100~1200(mm)<br>Coil length 600~1800(mm)                                                                                                                        | 1200*1000 / 1100*1100(mm)                                                                                                                                                     |
|                    | Navigate mode                   | Laser                                                                                                                                                                     | Laser                                                                                                                                                                         | Laser                                                                                                                                                                         | Laser                                                                                                                                                                         | Laser                                                                                                                                                                         | Laser                                                                                                                                                                         |
|                    | Navigation accuracy             | ±10mm                                                                                                                                                                     | ±10mm                                                                                                                                                                         | ±10mm                                                                                                                                                                         | ±10mm                                                                                                                                                                         | ±10mm                                                                                                                                                                         | ±10mm                                                                                                                                                                         |
|                    | Stop accuracy                   | ±10mm                                                                                                                                                                     | ±10mm                                                                                                                                                                         | ±10mm                                                                                                                                                                         | ±10mm                                                                                                                                                                         | ±10mm                                                                                                                                                                         | ±10mm                                                                                                                                                                         |
| Movenent           | Stop accuracy                   | ±1°                                                                                                                                                                       | ±1°                                                                                                                                                                           | ±1°                                                                                                                                                                           | ±1°                                                                                                                                                                           | ±1°                                                                                                                                                                           | ±1°                                                                                                                                                                           |
|                    | Travelling direction            | Forward, Backward, Rotate                                                                                                                                                 | Forward, Backward, Rotate                                                                                                                                                     | Forward, Backward, Rotate                                                                                                                                                     | Forward, Backward, turn left&right                                                                                                                                            | Forward, Backward, turn left&right                                                                                                                                            | Forward, Backward, turn left&right                                                                                                                                            |
|                    | Drive mode                      | Single Steering Wheel Drive                                                                                                                                               | Two-wheel differential drive                                                                                                                                                  | Single Steering Wheel Drive                                                                                                                                                   | Single Steering Wheel Drive                                                                                                                                                   | Single Steering Wheel Drive                                                                                                                                                   | Single Steering Wheel Drive                                                                                                                                                   |
|                    | Acceleration                    | 0.35 m/s <sup>2</sup>                                                                                                                                                     | 0.5m/s <sup>2</sup>                                                                                                                                                           | 0.35 m/s <sup>2</sup>                                                                                                                                                         | 0.35 m/s <sup>2</sup>                                                                                                                                                         | 0.35 m/s <sup>2</sup>                                                                                                                                                         | 0.35 m/s <sup>2</sup>                                                                                                                                                         |
|                    | Single wheel drive              | 1.2 m/s                                                                                                                                                                   | 1m/s                                                                                                                                                                          | 1.2 m/s                                                                                                                                                                       | 1.2 m/s                                                                                                                                                                       | 1.2 m/s                                                                                                                                                                       | 1.2 m/s                                                                                                                                                                       |
| Battery            | Maximum climbing capacity       | 3°                                                                                                                                                                        | ≤3°                                                                                                                                                                           | 3°                                                                                                                                                                            | 3°                                                                                                                                                                            | 3°                                                                                                                                                                            | 3°                                                                                                                                                                            |
|                    | Battery type                    | Lithium Battery                                                                                                                                                           | Lithium Battery                                                                                                                                                               | Lithium Battery                                                                                                                                                               | Lithium Battery                                                                                                                                                               | Lithium Battery                                                                                                                                                               | Lithium Battery                                                                                                                                                               |
|                    | Charging mode                   | Side Charging                                                                                                                                                             | Side Charging                                                                                                                                                                 | Side Charging                                                                                                                                                                 | Side Charging                                                                                                                                                                 | Side Charging                                                                                                                                                                 | Side Charging                                                                                                                                                                 |
|                    | Charging time                   | ≤1H                                                                                                                                                                       | ≤1H                                                                                                                                                                           | ≤1H                                                                                                                                                                           | ≤1H                                                                                                                                                                           | ≤1H                                                                                                                                                                           | ≤1H                                                                                                                                                                           |
| Network            | Rated endurance                 | 6H                                                                                                                                                                        | 8H                                                                                                                                                                            | 6H                                                                                                                                                                            | 6H                                                                                                                                                                            | 6H                                                                                                                                                                            | 6H                                                                                                                                                                            |
|                    | Communication mode              | WiFi / 5G                                                                                                                                                                 | WiFi / 5G                                                                                                                                                                     | WiFi / 5G                                                                                                                                                                     | WiFi / 5G                                                                                                                                                                     | WiFi / 5G                                                                                                                                                                     | WiFi / 5G                                                                                                                                                                     |
| Protective         | Safety warning                  | Light Warning, Voice Broadcast                                                                                                                                            | Light Warning, Voice Broadcast                                                                                                                                                | Light Warning, Voice Broadcast                                                                                                                                                | Light Warning, Voice Broadcast                                                                                                                                                | Light Warning, Voice Broadcast                                                                                                                                                | Light Warning, Voice Broadcast                                                                                                                                                |
|                    | Safe sensing range              | Adjustable when ≤3m                                                                                                                                                       | Adjustable when ≤3m                                                                                                                                                           | Adjustable when ≤3m                                                                                                                                                           | Adjustable when ≤3m                                                                                                                                                           | Adjustable when ≤3m                                                                                                                                                           | Adjustable when ≤3m                                                                                                                                                           |
|                    | Safety protection               | <ul style="list-style-type: none"> <li>• Front/Rear Obstacle Detection Sensors</li> <li>• Mechanical Anti-collision Structure</li> <li>• Emergency Stop Switch</li> </ul> | <ul style="list-style-type: none"> <li>• Front and Rear Obstacle Detection Sensors</li> <li>• Mechanical Anti-collision Structure</li> <li>• Emergency Stop Switch</li> </ul> | <ul style="list-style-type: none"> <li>• Front and Rear Obstacle Detection Sensors</li> <li>• Mechanical Anti-collision Structure</li> <li>• Emergency Stop Switch</li> </ul> | <ul style="list-style-type: none"> <li>• Front and Rear Obstacle Detection Sensors</li> <li>• Mechanical Anti-collision Structure</li> <li>• Emergency Stop Switch</li> </ul> | <ul style="list-style-type: none"> <li>• Front and Rear Obstacle Detection Sensors</li> <li>• Mechanical Anti-collision Structure</li> <li>• Emergency Stop Switch</li> </ul> | <ul style="list-style-type: none"> <li>• Front and Rear Obstacle Detection Sensors</li> <li>• Mechanical Anti-collision Structure</li> <li>• Emergency Stop Switch</li> </ul> |
|                    | Fork protection                 | • Laser ranging sensor                                                                                                                                                    | <ul style="list-style-type: none"> <li>• Mechanical Collision</li> <li>• Photoelectric Sensors</li> </ul>                                                                     | <ul style="list-style-type: none"> <li>• Mechanical Collision</li> <li>• Photoelectric Sensors</li> </ul>                                                                     | • Mechanical Collision                                                                                                                                                        | • Mechanical Collision                                                                                                                                                        | • Mechanical Collision                                                                                                                                                        |





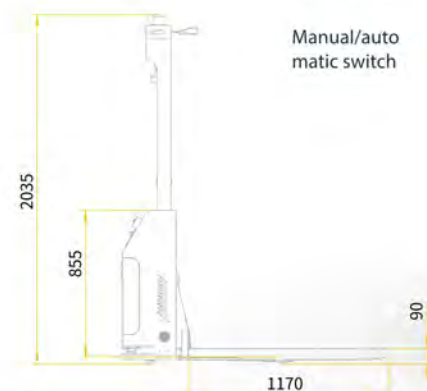
## C5-B2

New Energy Lithium Battery Industry Lithium Battery Raw Materials Storage



### Product introduction

suitable for workshops with limited factory area and multiple production processes. The working method is that the AGV automatically picks up the bottom of the pallet after receiving the system command, and realizes end-to-end transfer by lifting and connecting the pallet. This model adopts laser navigation and positioning, and has been widely used in automobiles and parts, new energy lithium batteries, food and beverage, household appliances and other industries.



### Product advantages



The car body is small and exquisite, and can be carried in narrow passages;



When the turning radius is limited, it can turn 90 degrees and turn around 180 degrees in situ;



The minimum right-angle stacking channel width is 2m



### Application industries and scenarios



application industry

Diversified industries such as new energy lithium batteries, automobiles and parts, machinery manufacturing, electronics, electrical appliances, and new energy.



application scenarios

Production line raw materials, parts transportation, etc.



### Project case - Automobile air pipe production workshop and finished product warehousing project

Solution

Break through the barriers of information transmission, by connecting to the customer's ERP system, reading the feedback information of the line scanning code, according to the type of material, the intelligent dispatching robot will send the goods to the inspectionfree station and dock with the outdoor mobile robot, seamless relay.

Or send it to the GP12 waiting area for manual sorting, and integrate the indoor and outdoor material transportation into one, realizing the unmanned transportation of materials across the factory from the production line to the outdoor warehouse.

Economic benefits



#### Improve efficiency

Improve the efficiency and accuracy of lineside transportation, so that materials can be accurately delivered to the corresponding buffer area.



#### High reliability

Improve the yield rate and accuracy rate: reduce material damage during handling, and increase the accuracy rate to 99%



#### Cross-factory transportation

The efficiency of crossfactory transshipment is improved, and the indoor arrival information can be transmitted to the outdoor mobile robot for connection at the first time, without waiting time wasted.





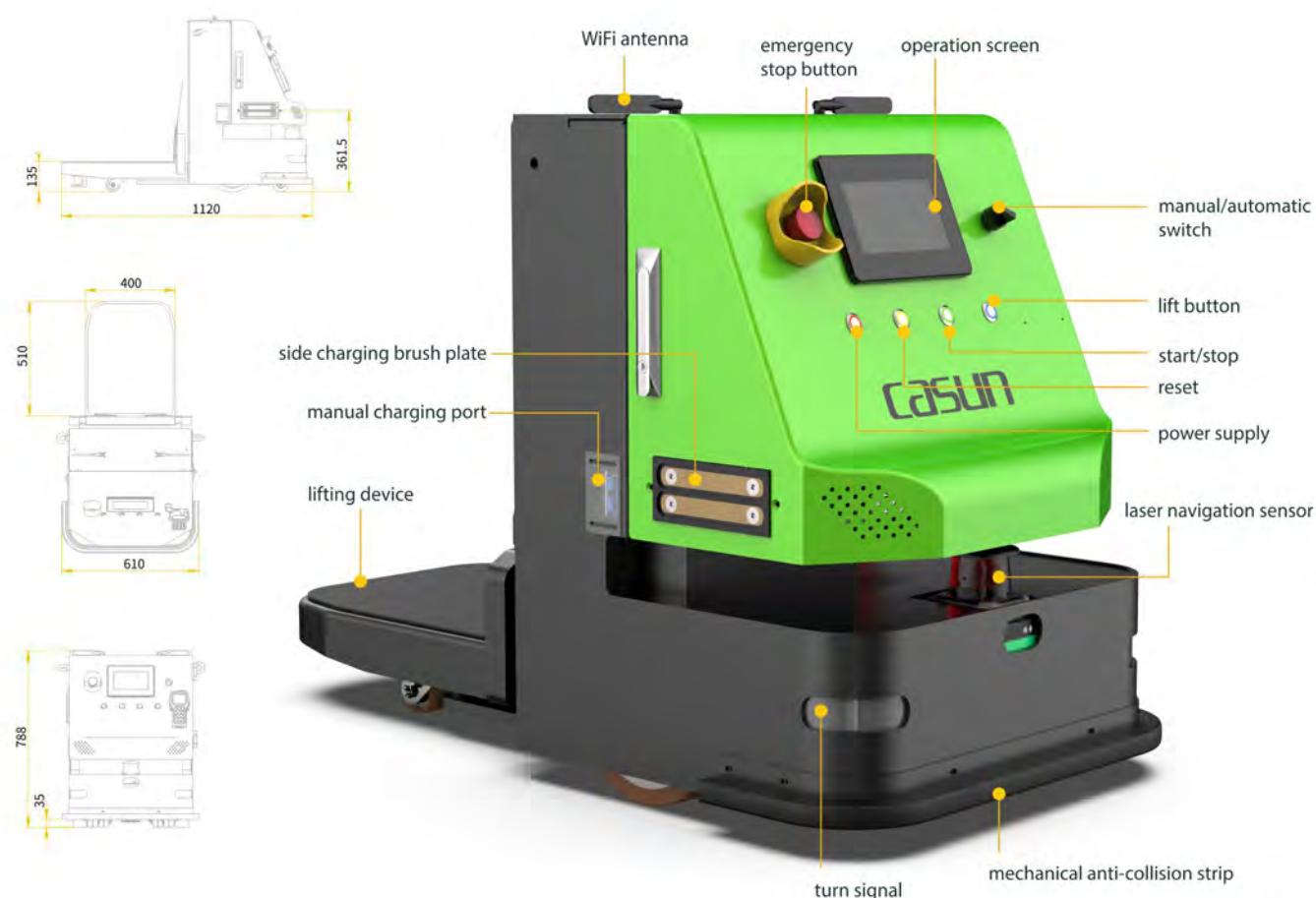


# C5-B6

Automobile and parts industry-Material transfer

## Product introduction

C5-B6 carries out precise positioning according to dispatching tasks, and independently completes a series of operations of lifting, transportation, and unloading. The navigation method is SLAM navigation + two-dimensional code assisted positioning, with a load capacity of 500Kg and a lifting stroke of 120mm. Available In new energy lithium batteries, automobiles and parts, flat panel display, food and beverage, 3C and semiconductor industries.



## Product advantages

The car body is flexible and can rotate 360°

The appearance is compact and can be applied in scenarios with small logistics channels

High delivery time and high cost performance

## Application industries and scenarios

application industry  
Auto parts industry, 3C and semiconductor industry

application scenarios  
Applicable to the handling scene of small trucks

## Project case - Auto parts project

Solution

This project uses C5-B6 intelligent forklift trucks to realize the distribution of raw materials from the warehouse of raw materials to the manual station of the production line, and the material distribution of small racks. Area, to meet the on-site narrow roadway transportation; realize the scene operation of material transportation. Realize intelligent planning of the optimal path: Relying on the AI algorithm, the AGV can independently judge the priority of the transportation task and formulate the optimal path.

Economic benefits



### TQCM

Cost reduction and efficiency increase replace manual handling and logistics distribution, reduce labor input and improve production efficiency;



### Scene optimization

It can realize the problem of small rack handling, and it can realize rack handling in the environment with small space area;



### Accurate positioning

Improve the positioning accuracy of transportation: the transportation accuracy rate is increased to 99%, which meets the peak demand of full production of the whole line;



### Intelligent logistics

Realize the intelligentization of logistics in the factory: realize the interaction of multisystem docking information and the informatization of the whole process.



CASE





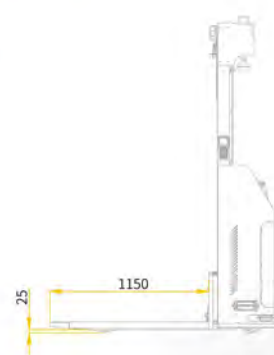
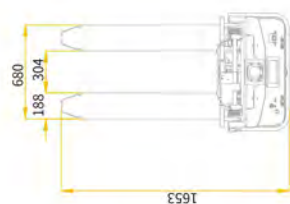
## C5-D1

New Energy Lithium Battery Industry  
PACK Finished Products Out of Warehouse



### Product introduction

C5-D1 mini stacking laser forklift has a load capacity of 1000KG, a running speed of up to 1.2m/s, and a lifting height of 1.6m; the extreme dimensions L1653\*W856\*H2295mm make it capable of The ability to operate in extremely narrow lanes requires a minimum width of 900mm for logistics channels (1200mm for ordinary forklifts), which greatly improves space utilization. At present, it has been widely used in diversified enterprises such as new energy lithium batteries, logistics and circulation, 3C and semiconductors, food and beverage, and traditional manufacturing.



### Product advantages



Stable product performance and high navigation accuracy;



The body design is compact, and the turning radius is only 1350mm, which is suitable for logistics handling in narrow lanes of various industries;



Flexible production to ensure smooth production lines;



Flexible production to ensure smooth production lines;



### Application industries and scenarios



application industry

New energy lithium battery, 3C electronics, food, military industry, traditional manufacturing and other diversified enterprises.



application scenarios

Production line pallet material raw materials, parts end - storage ground/low shelf - multi-specification Chuan-shaped pallet handling on the side of the production line.



### Project case - A lithium battery module product inbound and outbound transportation project

Solution

This project uses a C5-D1 intelligent forklift to automatically transport battery module products into and out of the warehouse. It can lift up to 1.6m and meet the on-site narrow roadway transportation.

Economic benefits



#### Reduce costs

reduce equipment and manpower input costs;



#### High reliability

improve the timeliness of material transportation, and the transportation accuracy rate is increased to 99%, which can meet the peak demand of full production of the whole line;



#### High safety

improves the safety of product transportation and ensures the product yield;



#### Logistics intelligence

realizes the intelligentization and automation of the entire production process, monitoring and tracking of the whole process from product offline - storage - delivery, production data statistics, and report generation.



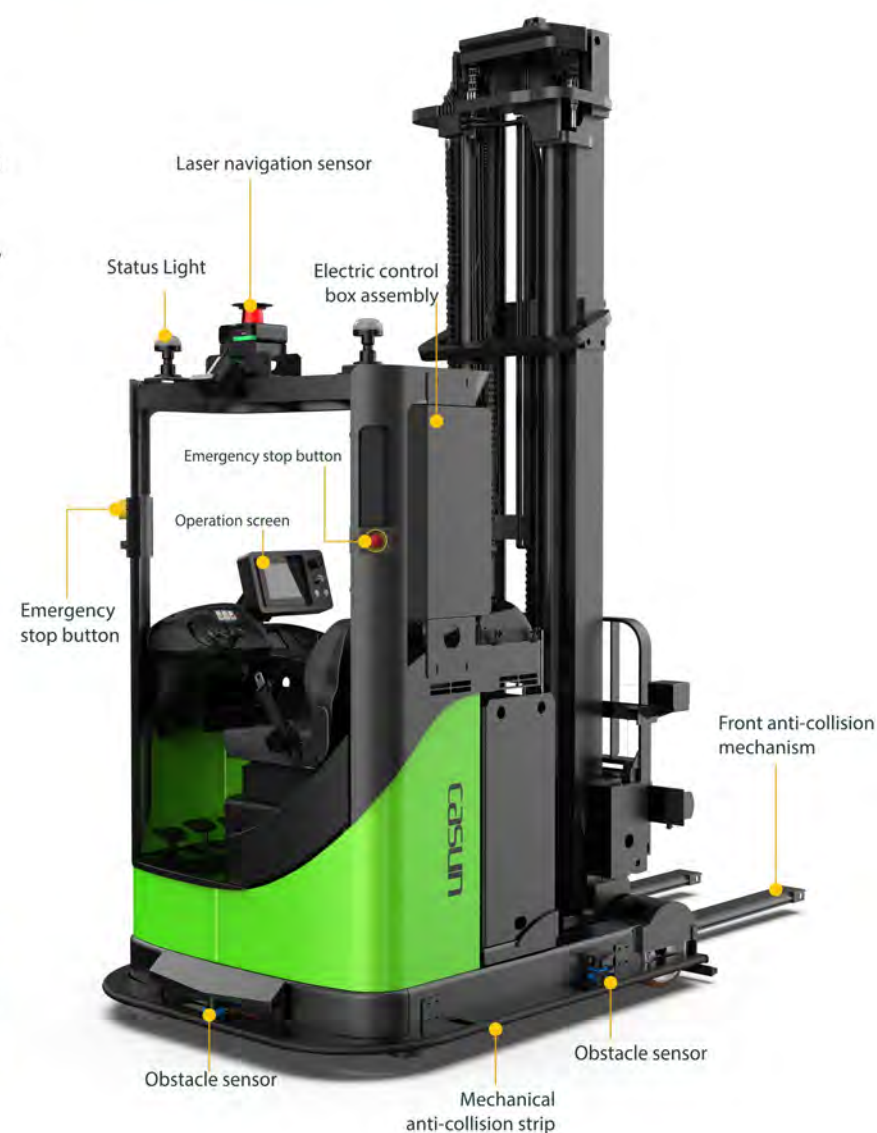
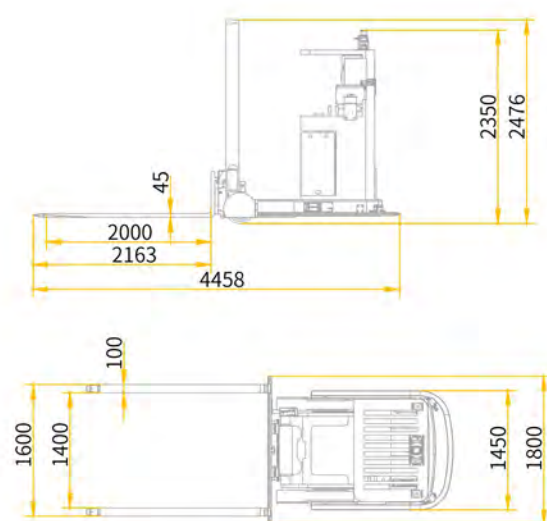
CASE





## Product introduction

C5-Q4 is a forward lift truck AGV, using laser navigation, no other positioning facilities on the ground, flexible AGV path planning, can handle 2000kg of materials, lifting height is up to 11455mm, which can be used for high stacking and heavy load scenarios, and that can be used for pallet transport. This type of AGV is mainly used in automobile, new energy lithium, storage, food, publishing and printing, medicine, electricity, tobacco and other industries.



## Product advantages



The structure for forklift body is stable, and the product performance is stable;



Use Laser navigation, and that can achieve high positioning accuracy;



It can intelligently plan the optimal path, reduce invalid walking and improve operation efficiency.

## Application industries and scenarios



application industry

Automobile and parts, new energy, food and beverage, logistics.....



application scenarios

suitable for scenarios where pallets are piled high and the horizontal clearance at the bottom of shelves is required.



## Project case - A material transportation project of a lamp factory in the automotive industry

The AGV uses laser positioning, locating the position through the reflector in the warehouse, and the AGV interconnects with the WMS system, automatically obtains the position information of the loading and unloading point, and determines the lifting height, after taking the empty and full pallet from the 8-meter shelf, brings it to the specified place, and then brings it to the warehouse by other AGVs.

Project difficulties: 1, the production process is cumbersome, which can't be coordinated management, the various processes are scattered, manual transportation is prone to be with errors; 2, manual handling efficiency is low, the scene channel environment is narrow, manual forklift handling efficiency is low, affecting production efficiency; 3. Manual handling has security risks and certain risks. In addition, forklift drivers need to concentrate for a long time and labor intensity is high.

Solution

Economic benefits



### High accuracy

Forklift AGV uses a visual detection device to ensure high-precision positioning of the pallet when taking and placing, so as to achieve high-accuracy docking.



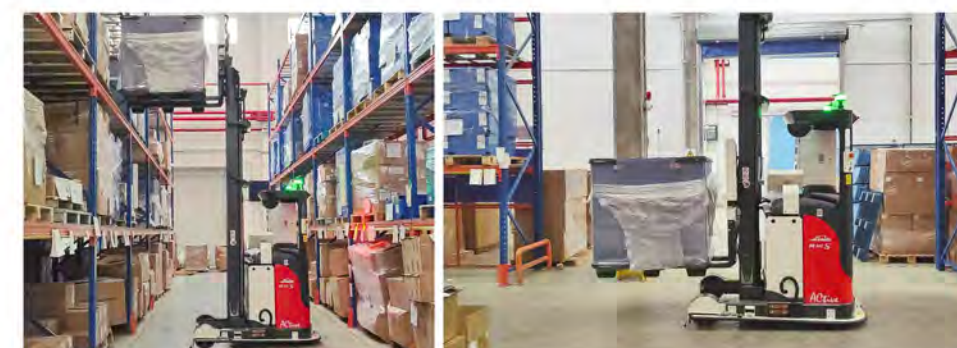
### Strong adaptability

The AGV system can be seamlessly connected with the WMS system to achieve intelligent scheduling and efficient operation of unmanned empty pallets in and out of the warehouse.



### Logistics intelligence

AGV intelligent control system interconnects with WMS system, automatically generates incoming and outgoing tasks, and can intelligently plan the optimal path, reduce invalid walking, and improve operating efficiency.



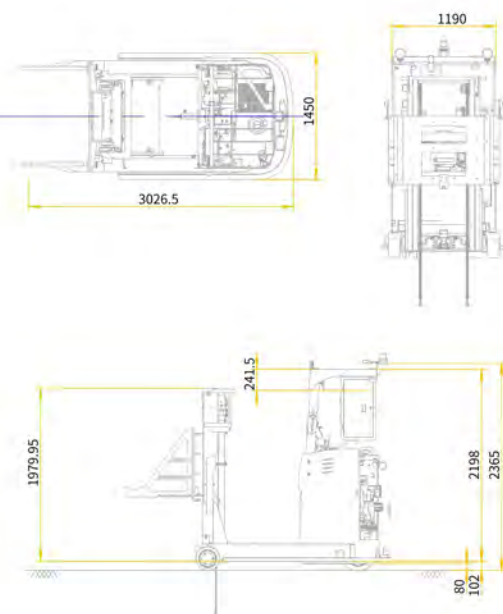
CASE





## Product introduction

C5-Q5 is a forward lift truck AGV, using laser magnetic navigation, no other positioning facilities on the ground. The AGV can schedule path planning flexibly, and can handle 2000kg of materials. The lifting height can be up to 5000mm, and can be used for high stacking and heavy load scenarios, which can be used for pallet transport.



## Product advantages



Product advantage: laser navigation + laser ranging detection, high safety;



Laser navigation, high positioning accuracy;



Realize the intelligent logistics of the rolling material, improve the operation efficiency;



## Application industries and scenarios

application industry

New energy, Tobacco, Papermaking



application scenarios

Suitable for automatic connection between coils and devices.



## Project case - A new energy lithium battery Changsha pole volume transportation project

This project mainly realizes the transportation and handling of the raw materials of the pole coil in the front end of the new energy lithium battery. Through the communication and docking of the CRMS mobile robot control system and the PLC system of the coating machine, the system can realize the autonomous material calling, intelligent handling, information collection and intelligent storage, complete the automatic transportation of the pole coil materials, and improve the efficiency of automated logistics handling in the factory. The goal of project cost reduction and efficiency increase has been achieved.

The project mainly solves the technical difficulties of system docking of various equipment, such as coating machine equipment, roll press, roll scutcher, etc. The second is to accurately realize the docking accuracy of AGV and each machine, and the docking accuracy of polar coil transport AGV and the machine must be  $\leq \pm 10\text{mm}$ .

Solution

Economic benefits



### Reduce costs

reduce material transportation personnel and achieve the goal of cost reduction.



### High reliability

reduce material damage during material handling;



### High safety

improved transportation positioning accuracy, manual handling accuracy only reached  $\pm 25\text{mm}$ , AGV transportation reached  $\pm 10\text{mm}$ , and the accuracy rate increased to 99%, meeting the production needs of customers;



### Logistics intelligence

realize the intelligent logistics on the floor, and realize the automation of material calling information and material transportation.



CASE

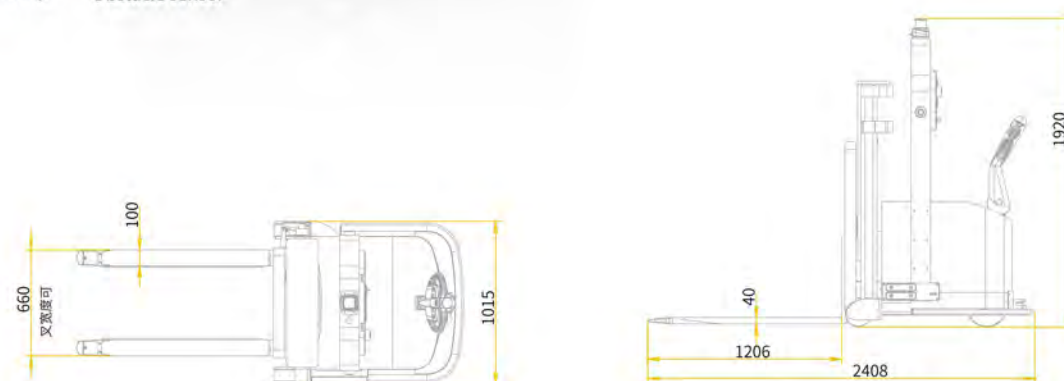


# C5-P2



## Product introduction

C5-P2 is a counterweight forklift AGV, using laser magnetic navigation, no other positioning facilities on the ground, and that can design AGV path planning flexibly, handling 600kg of materials. The lifting height can be up to 2900mm, suitable for stacking applications, that can be used for pallet transportation.



## Product advantages



Laser navigation can achieve high positioning accuracy;



Improve operation efficiency and realize intelligent logistics;



It can intelligently plan the optimal path, reducing invalid walking and improve operation efficiency



## Application industries and scenarios



### application industry

Automobile and parts, new energy, 3C semiconductor, manufacturing, logistics and transportation.



### application scenarios

suitable for scenarios where pallets are piled high and vertical clearance at the bottom of shelves is required



## Project case - A liquid crystal panel CST turnover project in Chengdu

### Solution

The liquid crystal panel plug transfer project mainly realizes the turnover handling of the liquid crystal panel baking process in the baking room. The transportation process is to receive materials from the feed conveyor line with laser forklift truck, transport them to the oven, and then transport them to the discharge conveyor line after baking.

Project difficulties: 1. High cleanliness; Liquid crystal panel thousand-level clean workshop for material transfer; 2. High stability requirements; The liquid crystal panel is fragile, and the lifting of the material is stable, which requires high automatic control; 3. Compact space; The project is located in the baking room, the space height is 2 meters and the material needs to be lifted 1 meter, and the overall operating space is less than 20 m<sup>2</sup>.

### Economic benefits



### Cost reduction and efficiency

reduce the input cost of fixed equipment: create transportation lines and improve the flexibility of production scheduling;



### Reduce labor intensity

automatic transfer in semi-enclosed space to reduce labor costs and labor intensity;



### Accurate positioning

improve transportation positioning accuracy, transportation accuracy increased to 99%, to meet the full production peak demand;



CASE



## Special AGV for New Energy Industry

# CCM



### Series introduction

The CCM series is a mobile robot customized for the industry. It is a new model customized and developed according to the actual needs of the new energy lithium battery project, with flexible applications. At present, special-purpose robots for new energy include: double-fork lifting mobile robots, single-fork lifting mobile robots and single-cantilever mobile robots, which are mainly used to complete the handling and loading and unloading of pole coils, which can meet the high-precision docking of the lithium battery industry. MES system docking, multiple safety protection, production requirements for strict environmental cleanliness.



Application environment -10°C ~ 45°C; no dust, flammable, explosive and corrosive gases.



|            | Model                | CCM-51 Double fork lifting AGV                                                                                                                                     | CCM-52 Single fork lifting AGV                                                                                                                                     | CCM-54                                                                                                                                                                                   |
|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                      |                                                                                 |                                                                                 |                                                                                                       |
| Basic      | Industry             | New energy lithium battery                                                                                                                                         | New energy lithium battery                                                                                                                                         | New energy lithium battery                                                                                                                                                               |
|            | Dimensions           | L1800*W1800*H1800(mm)                                                                                                                                              | L1800*W1500*H1200mm                                                                                                                                                | L2000*W1000*H840mm                                                                                                                                                                       |
|            | Maximum Load         | 1800kg                                                                                                                                                             | 1800kg                                                                                                                                                             | 1000kg / 1500kg / 2500kg                                                                                                                                                                 |
|            | Rotation Diameter    | 2435mm                                                                                                                                                             | 2220mm                                                                                                                                                             | 2227mm                                                                                                                                                                                   |
|            | Docking Height       | 1800±50mm                                                                                                                                                          | 1300~1800mm                                                                                                                                                        | 840+248 (mm)                                                                                                                                                                             |
| Navigation | Navigation Method    | Laser SLAM / QR                                                                                                                                                    | Laser SLAM / QR                                                                                                                                                    | SLAM / QR                                                                                                                                                                                |
|            | Navigation Accuracy  | ±10mm                                                                                                                                                              | ±10mm                                                                                                                                                              | ±10mm / ±15mm                                                                                                                                                                            |
|            | Stop Accuracy        | ±5mm                                                                                                                                                               | ±3mm                                                                                                                                                               | ±5mm / ±10mm                                                                                                                                                                             |
|            | Docking Accuracy     | ±1mm                                                                                                                                                               | ±2mm                                                                                                                                                               | ±2mm                                                                                                                                                                                     |
| Athletic   | Moving Direction     | Forward,Backward,Turn,Rotate, Transverse Moving                                                                                                                    | Forward,Backward,Turn,Rotate, Transverse Moving                                                                                                                    | Forward,Backward,Turn,Rotate, Transverse Moving                                                                                                                                          |
|            | Drive Mode           | Steering Wheel Drive                                                                                                                                               | Steering Wheel Drive                                                                                                                                               | Steering Wheel Drive                                                                                                                                                                     |
|            | Maximum Moving Speed | 1.0 m/s                                                                                                                                                            | 1.0 m/s                                                                                                                                                            | 1.0 m/s                                                                                                                                                                                  |
| Battery    | Battery Type         | Lithium Battery                                                                                                                                                    | Lithium Battery                                                                                                                                                    | Lithium Battery                                                                                                                                                                          |
|            | Charging Method      | Side Charging / Ground charging                                                                                                                                    | Side Charging / Ground charging                                                                                                                                    | Side Charging / Ground charging                                                                                                                                                          |
|            | Charging Time        | ≤1.5H                                                                                                                                                              | ≤1H                                                                                                                                                                | ≤1H                                                                                                                                                                                      |
|            | Rated Endurance      | 6H                                                                                                                                                                 | 6H                                                                                                                                                                 | 6H                                                                                                                                                                                       |
| Network    | Communication mode   | WiFi / 5G                                                                                                                                                          | WiFi / 5G                                                                                                                                                          | WiFi / 5G                                                                                                                                                                                |
| Protection | Safety Alert         | Light Warning,Voice Broadcast                                                                                                                                      | Light Warning,Voice Broadcast                                                                                                                                      | Light Warning,Voice Broadcast                                                                                                                                                            |
|            | Safety Sensing Range | Adjustable when ≤3m                                                                                                                                                | Adjustable when ≤3m                                                                                                                                                | Adjustable when ≤3m                                                                                                                                                                      |
|            | Security             | <ul style="list-style-type: none"> <li>• 5 Obstacle Detection Sensors;</li> <li>• Mechanical Anti-collision Structure;</li> <li>• Emergency Stop Switch</li> </ul> | <ul style="list-style-type: none"> <li>• 4 Obstacle Detection Sensors;</li> <li>• Mechanical Anti-collision Structure;</li> <li>• Emergency Stop Switch</li> </ul> | <ul style="list-style-type: none"> <li>• Front and rear diagonal obstacle detection sensors;</li> <li>• Mechanical Anti-collision Structure;</li> <li>• Emergency Stop Switch</li> </ul> |





# CCM-51

New Energy Lithium Battery Industry  
Coil material transport in cell workshop



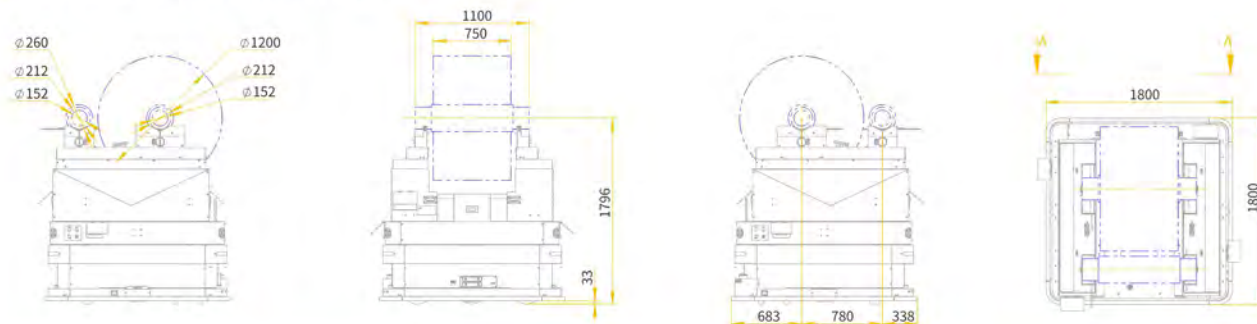
## Product introduction

CCM-51 is a double-fork lifting AGV. Its working mode is: one pair of forks are placed with a full roll of material, and the other pair of forks are placed with an empty reel. The two states are operated alternately at the same interface to realize automatic loading and unloading of materials.

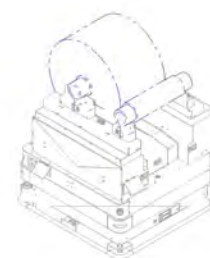
At present, the most widely used in the new energy lithium industry cell production workshop of the front section of the process, for foil and uncut pole roll handling.



## Material Specification



| Drum       | Drum inner diameter | Drum outer diameter | Drum length | Drum diameter | Weight  |
|------------|---------------------|---------------------|-------------|---------------|---------|
| Empty drum | 152mm               | 212mm               | 1100mm      | /             | /       |
| Full drum  | 152mm               | 212mm               | 1100mm      | ≤1200mm       | ≤1800KG |



## Product advantages



The navigation mode is optional: SLAM navigation or QR code navigation;



Automatic docking with the line equipment to realize the process of unmanned operation;



Double fork design is adopted to complete the empty and full exchange, improve work efficiency and reduce the waiting time of equipment downtime;

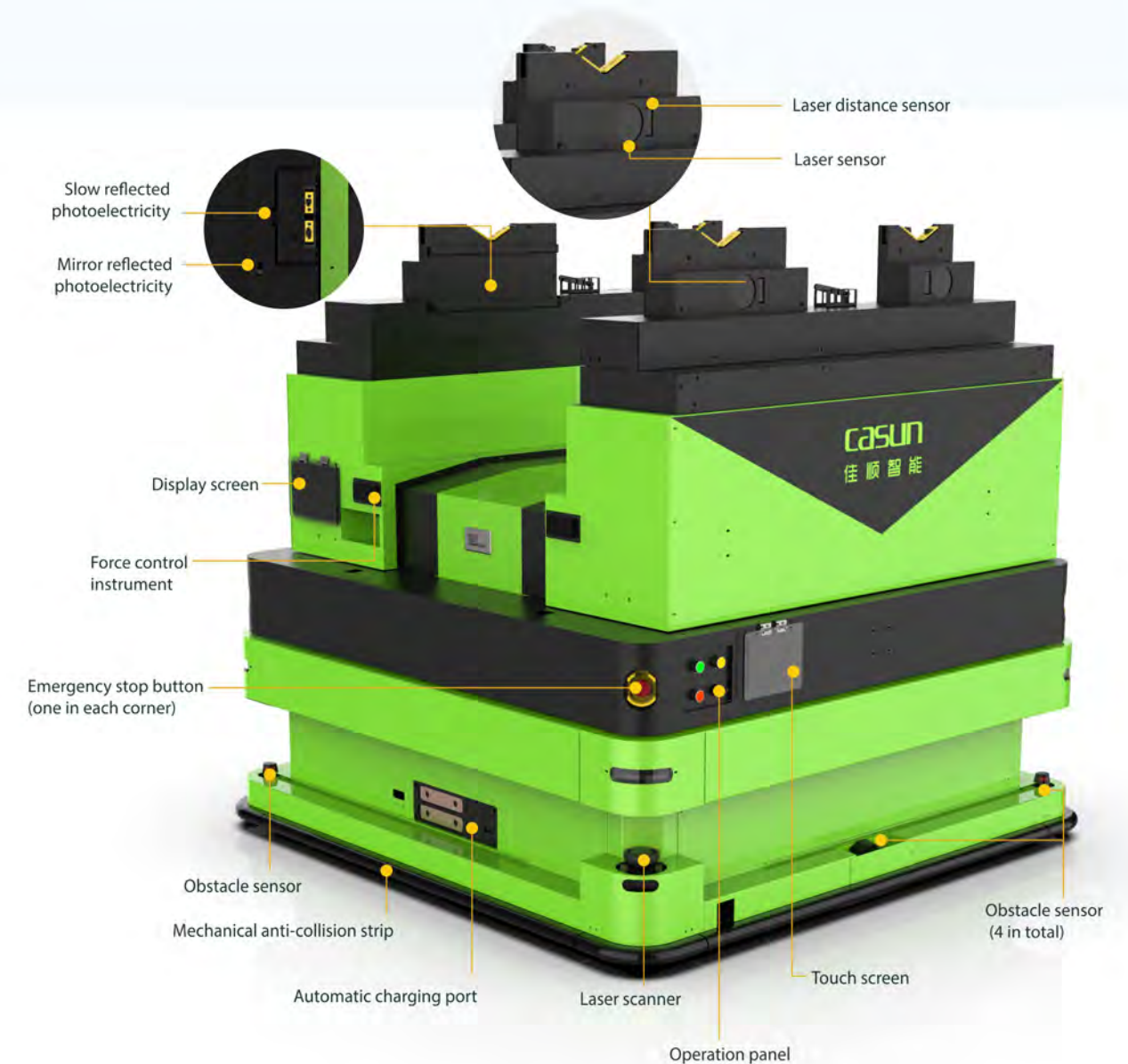


High precision control, the docking accuracy with the equipment is  $\pm 1\text{mm}$ .



## Application industries and scenarios

New energy lithium industry; Coil material transport in cell workshop







## Product introduction

CCM-52 is a single-fork lifting AGV. Its working mode is as follows: the AGV carries a full roll of material or an empty reel for automatic docking with the connection port to realize automatic loading and unloading of materials.

At present, the most widely used in the new energy lithium industry cell production workshop of the front section of the process, for foil and uncut pole roll handling.

## Material Specification



| Drum             | Drum inner diameter | Drum outer diameter | Drum length | Drum diameter | Weight  |
|------------------|---------------------|---------------------|-------------|---------------|---------|
| Suitable coiling | 152mm               | 200mm               | 1100mm      | ≤1200mm       | ≤1800KG |

## Product advantages



The navigation mode is optional: SLAM navigation or QR code navigation;



Automatic docking with the line equipment to realize the process of unmanned operation;

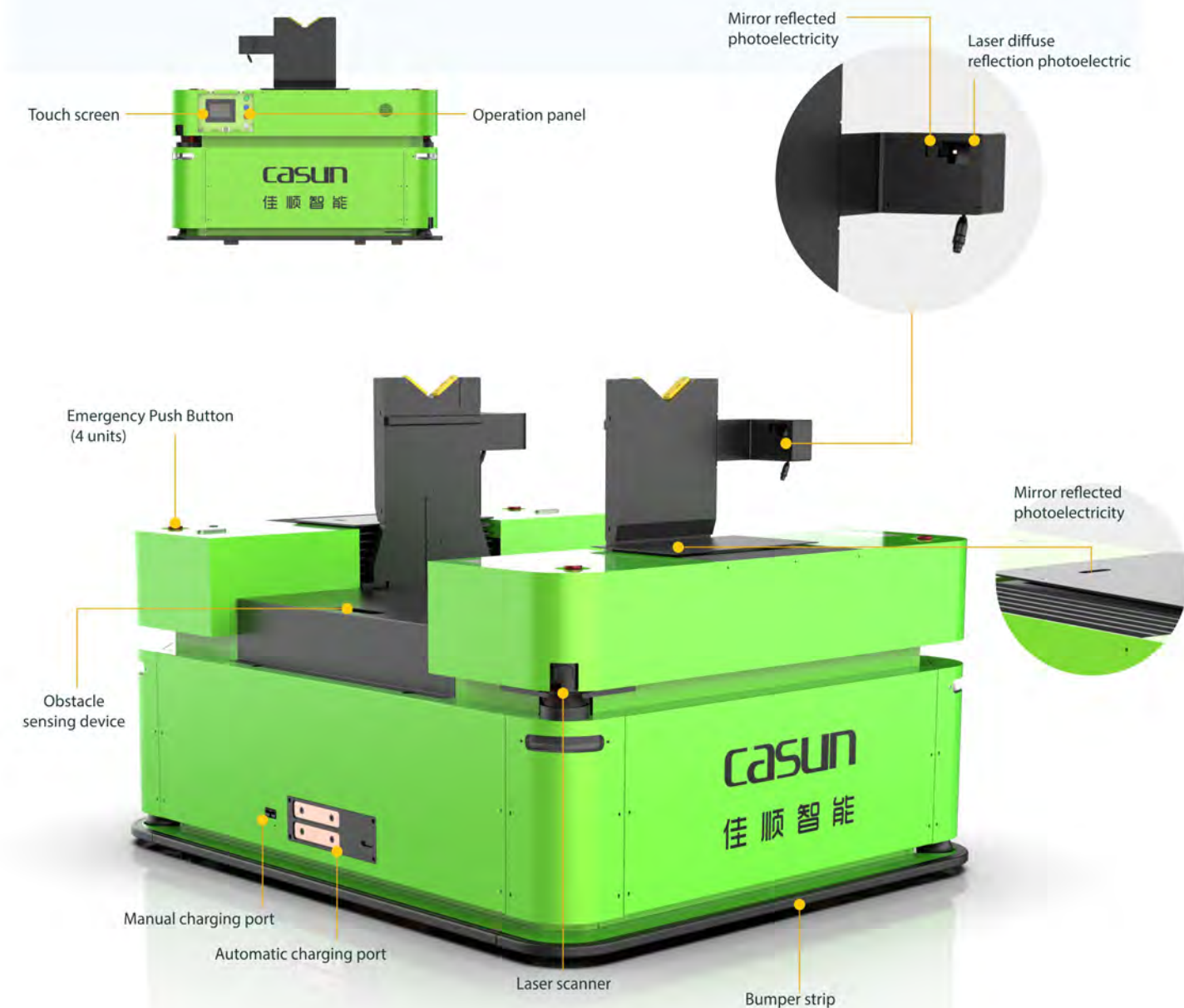


High precision control, the docking accuracy with the equipment is  $\pm 2\text{mm}$ .



## Application industries and scenarios

New energy lithium industry; Coil material transport in cell workshop





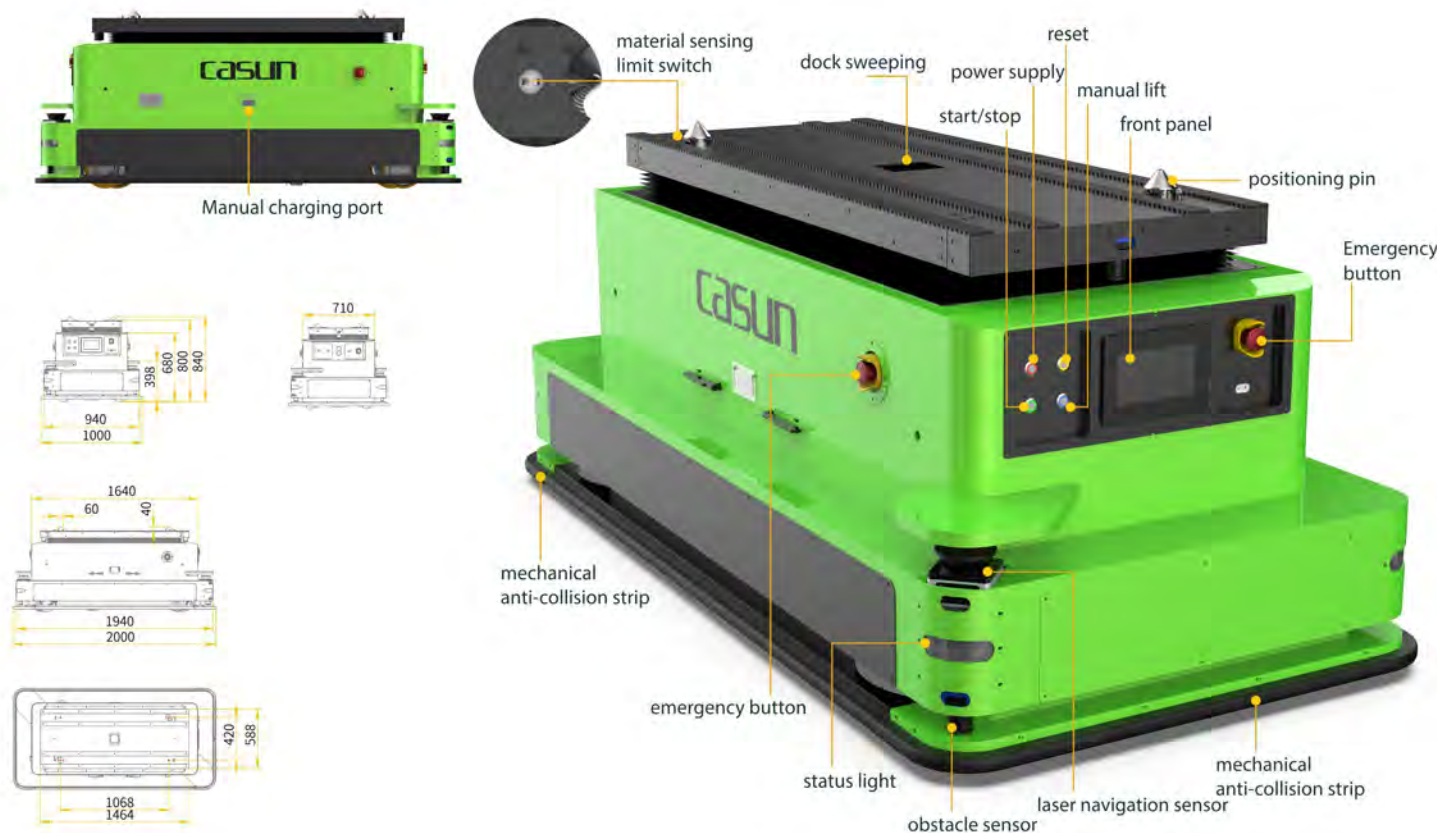
# CCM-54

New Energy Lithium Industry PACK line test transfer



## Product introduction

performs precise positioning according to the scheduling task, and independently completes a series of operations of lifting, transporting and unloading. The navigation method is SLAM navigation, the load capacity is compatible with 1T, the lifting height is up to 248mm, and it can be applied to various height positions; it can detect low obstacles, and can perform two safety protections while lifting, which has a price competitive advantage.



## Product advantages



The lifting stroke can reach 248mm, which can be applied to various heights of work stations.



Omni-directional operation, 360-degree safety protection.



Flexible production, which can be adapted to battery packs of various specifications.



## Application industries and scenarios



application industry

New energy lithium batteries, automobiles, auto parts, machinery manufacturing and other diversified industries;



application scenarios

PACK line, raw materials of production line, end-to-end transportation of parts and components, forming a flexible production line, etc.



## Project case - Lithium battery PACK line project

Solution

It mainly realizes the material transferring between battery packs from assembly to testing to packaging, and its operation process is a circular assembly line. Through the CRMS mobile robot control system, the system realizes autonomous material calling, intelligent handling, information collection, and intelligent storage, and seamlessly connects with the user's production management system. The project uses AGV as a flexible distribution unit, which effectively solves the transportation problem compatible with hundreds of products of different models and specifications.

Difficulties of the project: This project mainly solves the function of the AGV carrying the PACK trolley to realize the lateral movement, reduces the space of the PACK material car running channel, and at the same time ensures that the orientation of the PACK trolley is consistent with the site; secondly, it solves the problem explained the technical difficulties of docking various peripheral equipment systems: such as MES docking of manual stations, test equipment, manipulators, safety grating docking of automatic stations, etc

Economic benefits



TQCM

Create a flexible production line and improve the flexibility of production scheduling



Reduce damage

Improve yield rate and accuracy rate: reduce material damage during handling, and reduce defect rate by 90%



Intelligent logistics

Realize the intelligentization of onsite logistics, realize the optimization of warehouse location, route and task allocation, and informatization of the whole process;



Digitalization & visualization

Accurately collect data such as material efficiency, frequency, utilization rate, etc., and analyze them to improve the process and increase efficiency.



CASUN



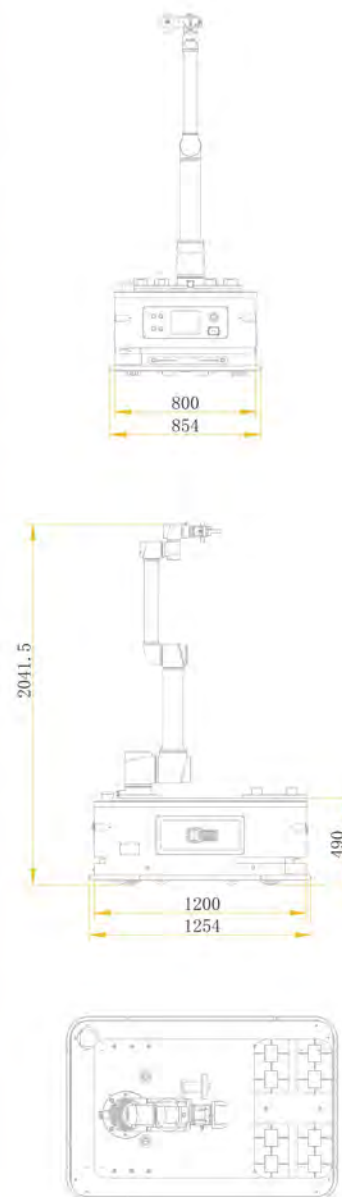
# C6-22

## Composite Mobile Robot



### Product Parameter

|                        |                           |                                                                                                                            |
|------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Basic parameter        | Dimension                 | L1254*W854*H2042mm(Manipulator mounting height)                                                                            |
|                        | Arm load                  | 500kg                                                                                                                      |
|                        | Max load capacity         | 10kg                                                                                                                       |
|                        | Body weight               | 1500kg                                                                                                                     |
| Navigation performance | Rotating diameter         | 2600mm                                                                                                                     |
|                        | Navigate mode             | SLAM                                                                                                                       |
|                        | Navigation accuracy       | ±10mm                                                                                                                      |
|                        | Stop accuracy             | ±10mm                                                                                                                      |
| Movement performance   | Stop accuracy             | ±1°                                                                                                                        |
|                        | Travelling direction      | Forward,Backward,Turn,Rotate,Transverse Moving                                                                             |
|                        | Drive mode                | teering Wheel Drive                                                                                                        |
|                        | Acceleration              | 0.35m/s <sup>2</sup>                                                                                                       |
| Battery performance    | Single wheel drive        | 1.2m/s                                                                                                                     |
|                        | Maximum climbing capacity | 3°                                                                                                                         |
|                        | Battery type              | Lithium Battery                                                                                                            |
|                        | Charging mode             | Side Charging                                                                                                              |
| Network                | Charging time             | ≤1H                                                                                                                        |
|                        | Rated endurance           | 6H                                                                                                                         |
|                        | Communciation mode        | WiFi / 5G                                                                                                                  |
| Protective performance | Safety warning            | Light Warning,Voice Broadcast                                                                                              |
|                        | Safe sensing range        | Adjustable when ≤3m                                                                                                        |
|                        | Safety protection         | • Front and rear diagonal obstacle detection sensors;<br>• Mechanical Anti-collision Structure;<br>• Emergency Stop Switch |



### Product introduction

C6-22 hybrid AGV is composed of mobile robot chassis, cooperative robot and end actuator, and is equipped with mechanical arm, vision, clamp and other mechanisms to move and operate, to realize the transfer and loading and unloading of different materials or fixture such as wafer box, ammunition clip, tray, CNC machine addition among different process equipment.



### Product advantages



This AGV has forward and backward, horizontal movement function, suitable for more working environments;



High precision operation, chassis positioning accuracy ±1mm, repeated positioning accuracy of mechanical arm ±0.03mm;



Meet the requirements of dustproof and anti-static grade, suitable for 3C and semiconductor industry;



The manipulator can be combined with a variety of sensors;



### Application industries and scenarios

The hybrid AGV can adapt to a variety of scenarios, and can be applied to power, semiconductor, CNC workshop, 3C and semiconductor industries, to achieve all kinds of precision instrument parts flexible, smooth transport, CNC machine loading and unloading process.





# CCS

## Charging Station Series



### Product introduction

CCS charging station series, composed of charger, control unit, display unit, telescopic electrode, etc., with voltage and current over voltage overload protection mechanism, charging speed, high safety performance. This series is divided into: side charge, ground charge, impact charge, wireless charge, optional quick die block.



|               |                    |
|---------------|--------------------|
| Charging mode | Side charge        |
| Model         | CCS-11             |
| Dimension     | L600*W380*H930(mm) |

| Voltage | Power       |
|---------|-------------|
| 24V     | 1500W—5000W |
| 48V     | 1500W—5000W |



|               |                    |
|---------------|--------------------|
| Charging mode | Ground charge      |
| Model         | CCS-21             |
| Dimension     | L600*W380*H930(mm) |

| Voltage | Power       |
|---------|-------------|
| 24V     | 1500W—5000W |
| 48V     | 1500W—5000W |



|               |                      |
|---------------|----------------------|
| Charging mode | Side charge          |
| Model         | CCS-12               |
| Dimension     | L669*W488*H1018 (mm) |

| Voltage | Power       |
|---------|-------------|
| 24V     | 4000W—6000W |
| 48V     | 2500W—6000W |



|               |                     |
|---------------|---------------------|
| Charging mode | Collision charging  |
| Model         | CCS-31              |
| Dimension     | L490*W385*H355 (mm) |

| Voltage | Power       |
|---------|-------------|
| 24V     | 1500W—5000W |
| 48V     | 1500W—5000W |





# CASUN

## Mobile Robot ControlSystem

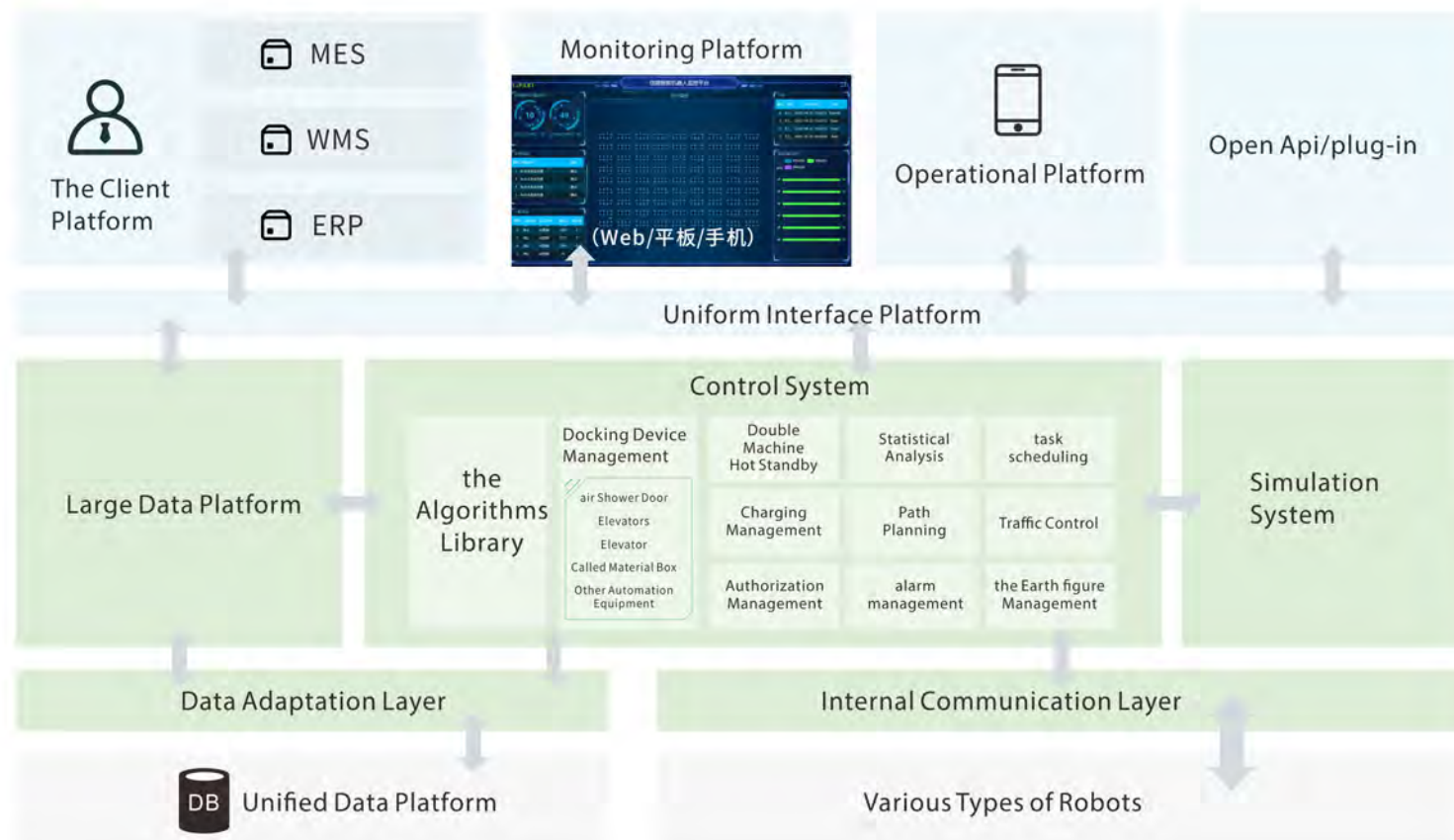


### System Introduction

The mobile robot control system mainly deals with the task assignment, path planning, traffic control and state monitoring of robot cluster, and completes data collection through the sensing module carried by mobile robot, so as to analyze and make decisions on production efficiency. At the same time, it provides open standard API, which is easy for customers' business systems to develop and call, and provides a solid guarantee for customers to introduce large-scale mobile robots in intelligent warehousing and intelligent factory scenarios.



### System Structure



### System Feature

support the coexistence of combined traffic control with other AGV manufacturers and multiple navigation modes

Multi-effect compatibility

Provide standard interface for customized development and support docking with elevators, elevators and other customer automation equipment

Standard interface

Cluster scheduling

Large-scale cluster scheduling of 1000+ robots can be realized

Multi-scene collaboration

cross-floor and cross-regional collaborative scheduling is supported

# CRMS

CASUN Robot Management System

BS architecture

configure and maintain the system through the browser

Rapid deployment

low-code process drawing, rapid software deployment, friendly man-machine interface, simple operation and easy to use.



### System Interface





# Intelligent Warehouse Management System

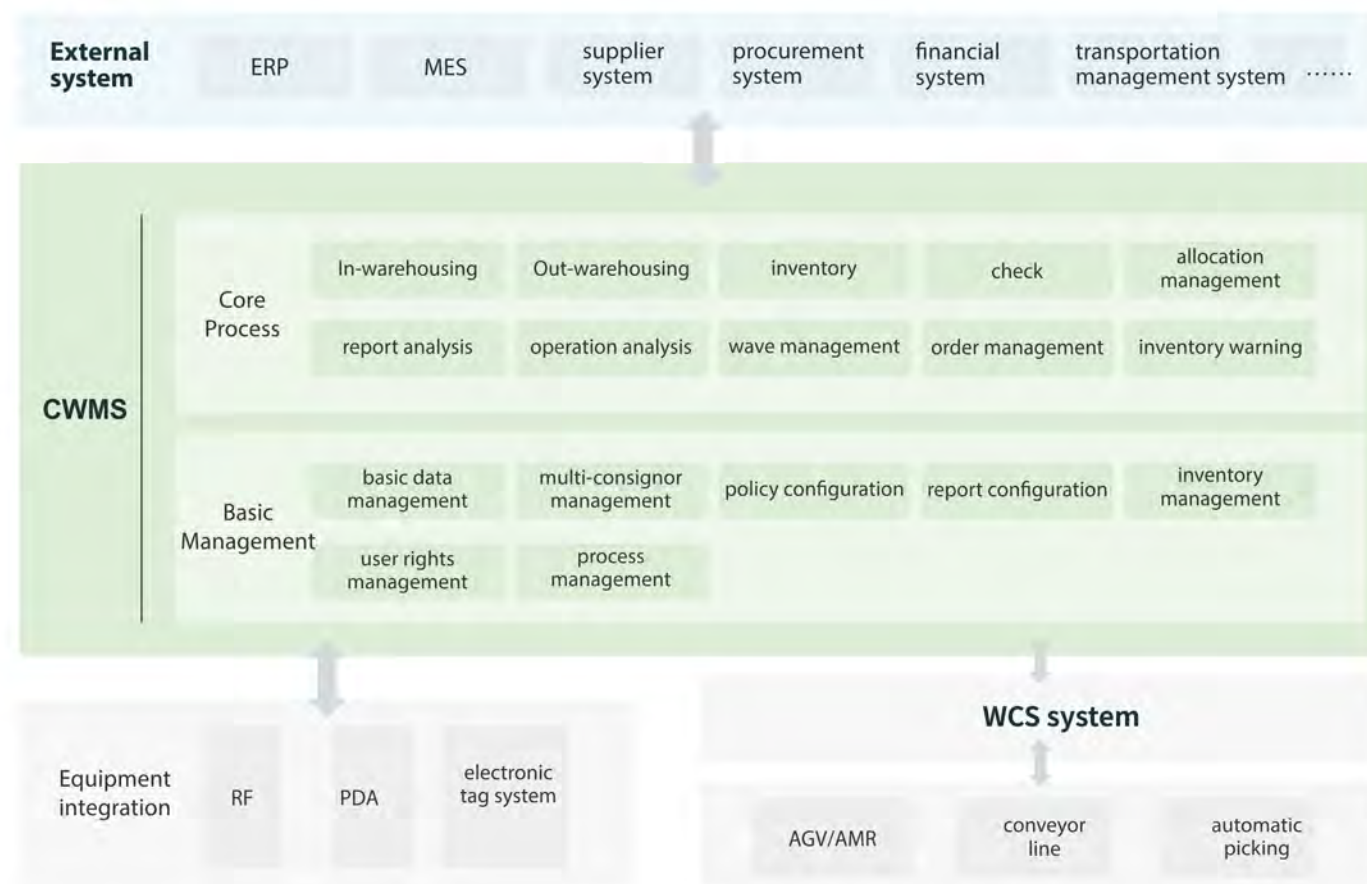


## System Introduction

Intelligent warehouse location management system has the characteristics of flexibility and expansion. Through the effective integration of warehousing functions and mobile robot logistics and transportation links, it provides the overall solution of warehousing management based on intelligent logistics.



## System Structure



## System Feature

support TCP, WebAPI, Webservice and other data interaction protocols, seamlessly connect with the upper MES/ERP and other systems

### Support data interaction

### Modular design

flexibly expands and matches different functional modules to meet diverse needs

### Intelligent algorithm

multiple intelligent algorithm strategies are supported

### Data management

Warehouse data management based on SaaS model

### Report analysis

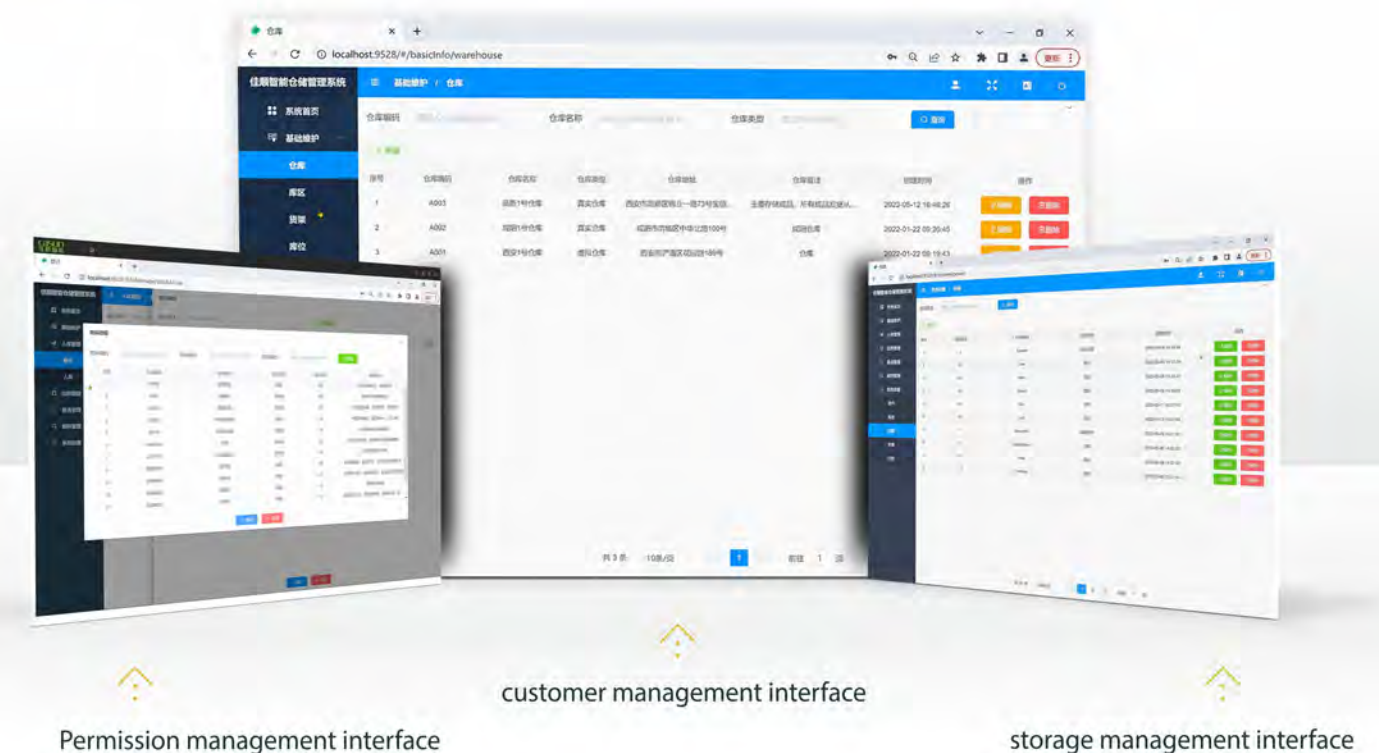
support for custom reports

# CWMS

CASUN Warehouse Management System



## System Interface





# Intelligent Warehouse Equipment Control System

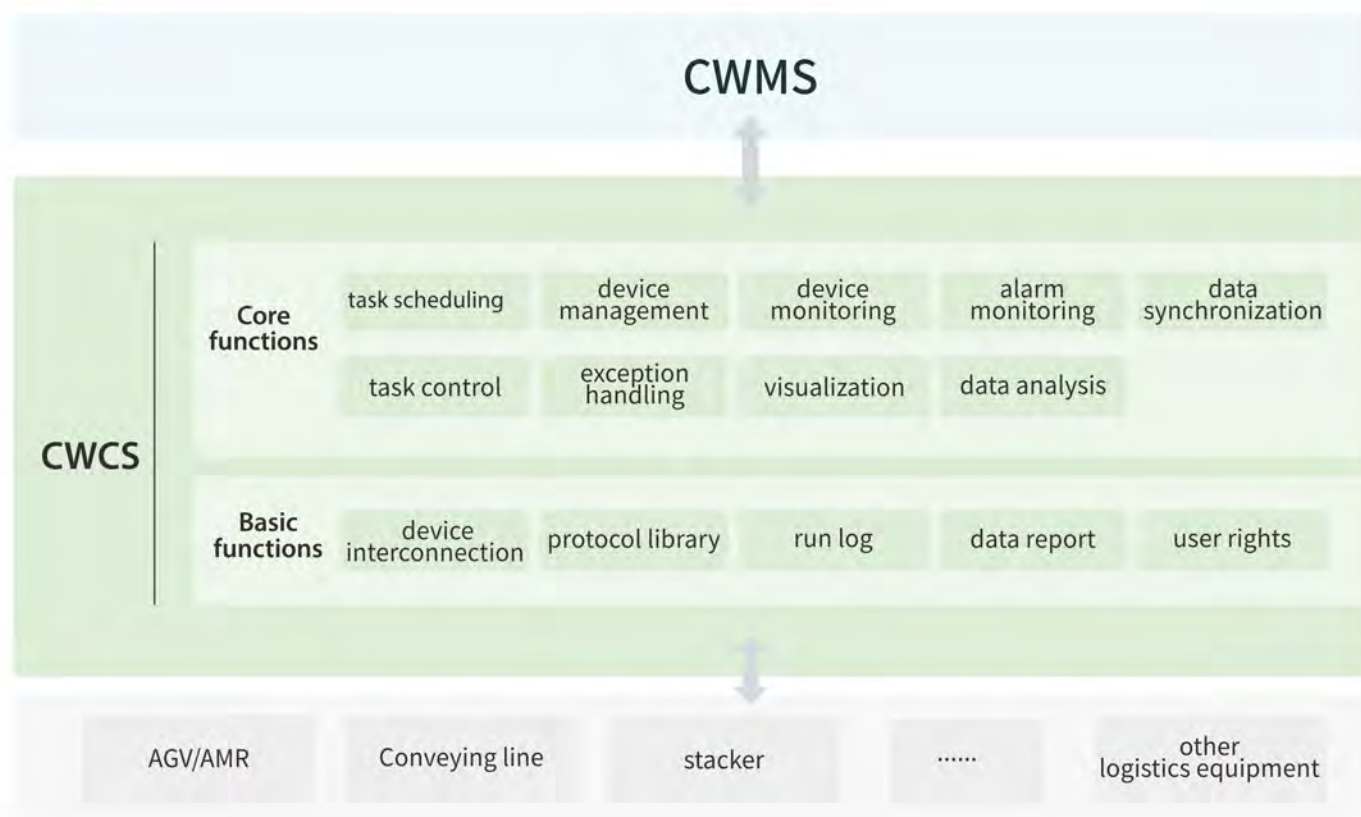


## System Introduction

Intelligent storage equipment control system is a management control system connecting WMS and intelligent hardware (AGV, conveyor, RFID equipment, etc.). The tasks of the upper layer are decomposed into dispatching instructions and sent to each automatic equipment. Meanwhile, the warehouse operating environment and equipment running status are monitored, and equipment abnormalities are timely warned. Finally, the unified monitoring and scheduling of various automatic equipment in storage is realized, and the automation efficiency is improved.



## System Structure



## System Feature

Support mainstream industrial agreements

Real-time monitoring

Complete statistics and detailed report output

Modular design

Modular design and easy to expand

Secondary development

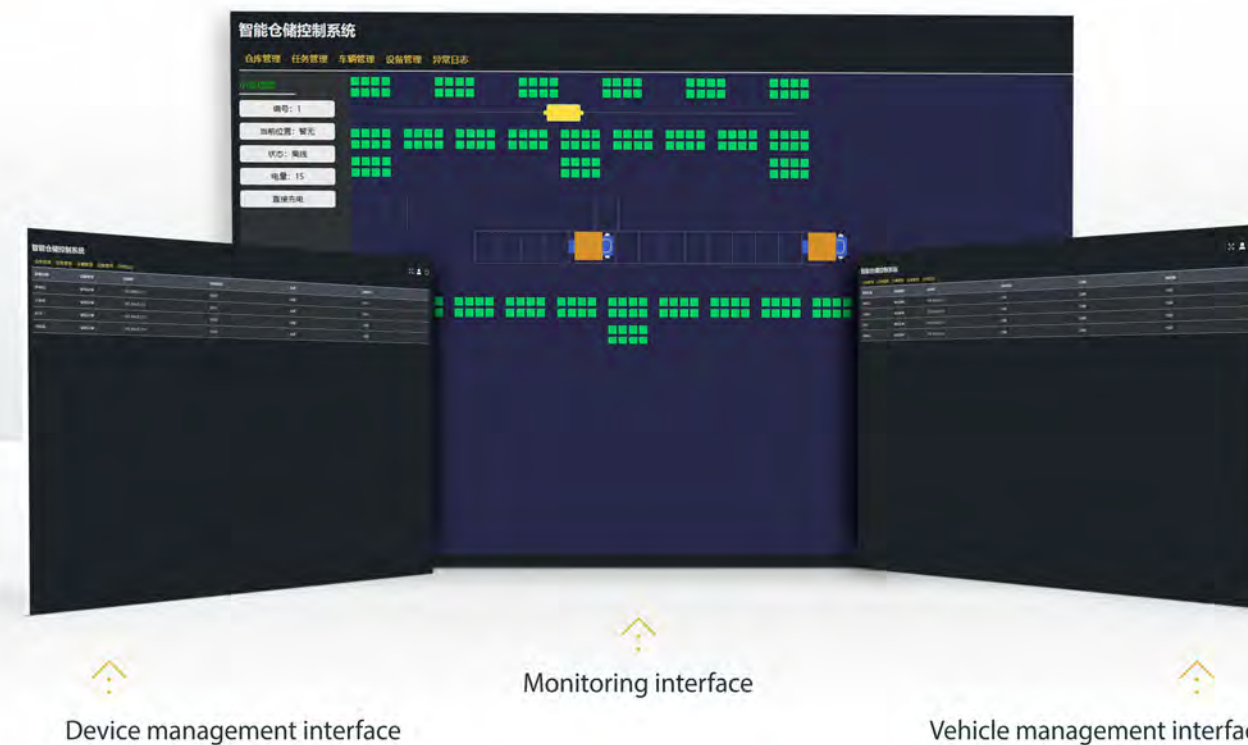
Provide a complete SDK for customers' secondary development

# CWCS

CASUN Warehouse Control System



## System Interface





# CASUN Intelligent Warehouse Sorting System

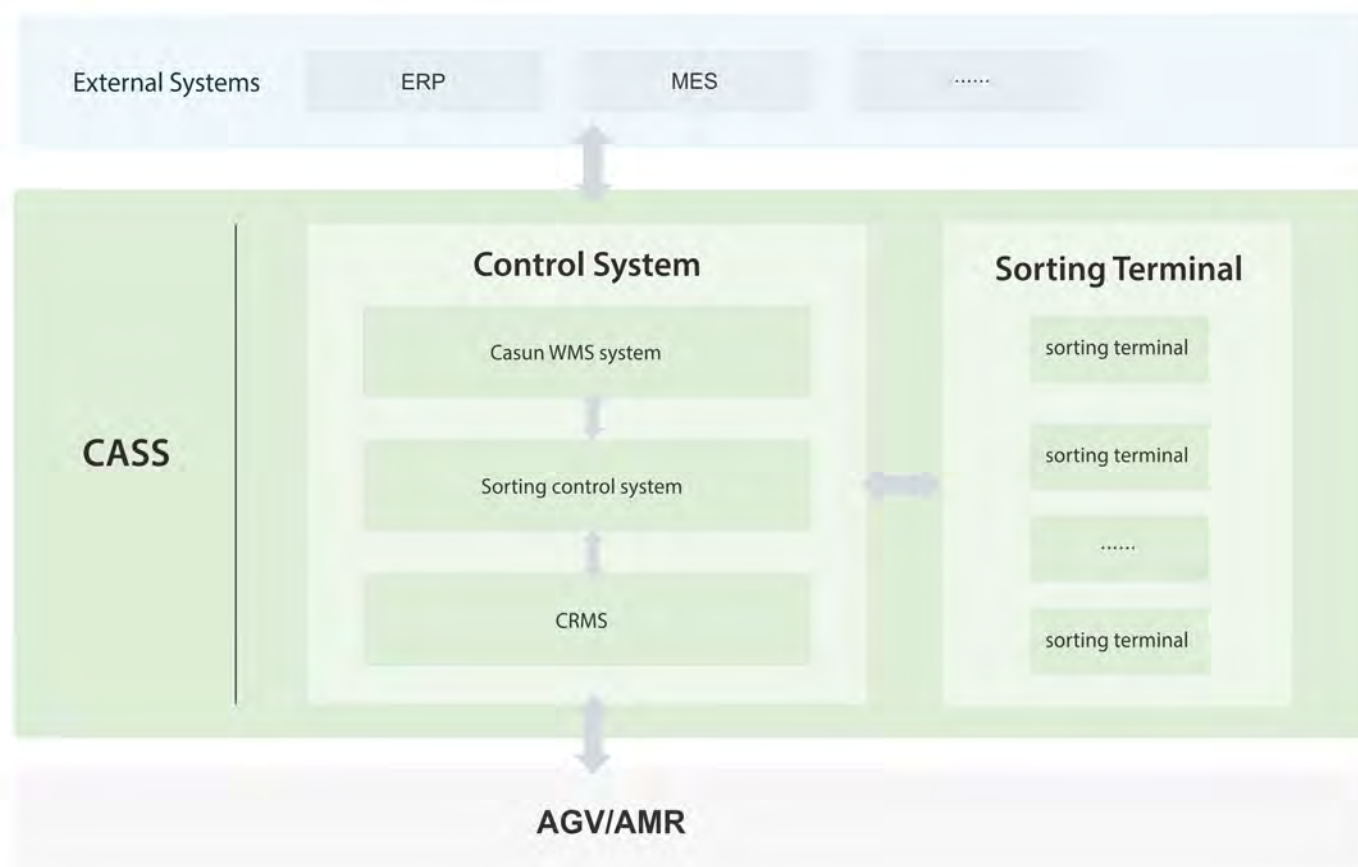


## System Introduction

Intelligent warehouse sorting system is a comprehensive solution system for intelligent logistics sorting scenarios. The system combines the AGV control function of management, WCS, WMS basic function, at the same time in intelligent sorting scene have special sorting control system of AGV data through WCS system and WMS data after fusion depth, the prediction of the task and sequence of sorting and evaluation and reasonable dispatching sorting task, implement efficient sorting. It is especially suitable for express e-commerce, warehousing and distribution centers or transport centers in logistics and circulation industry



## System Structure



## System Feature



## System Interface





# CASUN

## Digital Simulation System

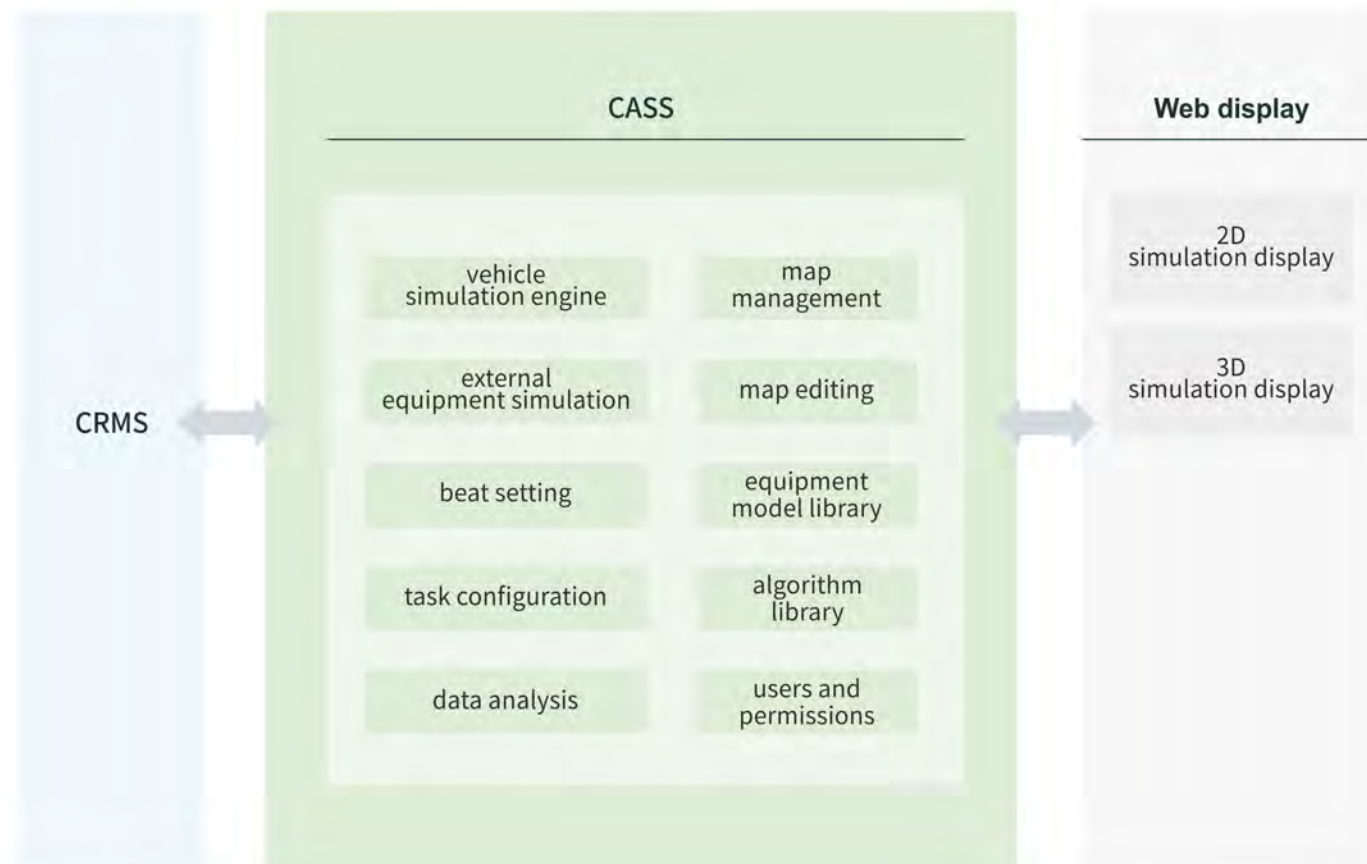


### System Introduction

Casun's digital simulation system can achieve 1:1 simulation of robots. It can not only realize synchronous simulation of robots in real scenes through digital twin technology, but also complete validity verification of the scheme and assist project decision-making through simulation tools of the system in the scheme design stage



### System Structure



### System Feature

**Multi-scene application**  
fine-grained simulation control parameters can adapt to the simulation requirements of various scenarios

**Support 2D and 3D simulation**

**Rich simulation configuration tools**

**CDSS**  
CASUN Digital Simulation System

**Real-time data transmission**  
efficient and timely data collection, transmission and analysis, and decision support for the status and expectation of production and operation



### System Interface







# NEW ENERGY LITHIUM BATTERY

## Requirement points

### Industry Overview

With the rapid growth of the output of new energy electric vehicles, China's lithium battery industry continues to maintain a rapid growth trend, and the industry innovation is accelerating. At the same time, lithium battery manufacturing process from automation to intelligent high-speed transformation. Industrial mobile robot AGV/AMR has been introduced on a large scale to replace the traditional process in the front, middle and rear stages of the process, improve the flexibility and efficiency of the production line, stabilize the quality and delivery time, and form a data closed loop for process tracking.

### Industry trends

- 01 New energy vehicles, low carbon environmental protection requirements and energy crisis push up the development progress of lithium electric industry
- 02 The policies for Industry investment and financing are loose, and leading enterprises lead the expansion and expansion strategy
- 03 The popularization of the concept of de-artificialization in logistics operation links and the strong demand for flexible manufacturing
- 04 The mature application of mobile robots in the early, middle and late stages promotes the development of industry standardization

## PARTNER

CATL 宁德时代

弗迪电池  
Fudibattery

CALB  
中创新航

EVE 亿纬锂能

SUNWODA  
欣旺达

SVOLT  
蜂巢能源

国轩高科  
GOTION HIGH-TECH



Material handling



Foil handling and loading and unloading docking



Battery mold components in and out of storage transportation

## Smart logistics solution

### Solution advantage

**Improve space utilization rate**  
the space is small, and the introduction of AGV/AMR flexible line can replace the traditional large conveying line

**Flexibility**  
AGV/AMR can complete route and process changes by changing procedures.

**High fault tolerance**  
AGV/AMR has the function of mixed-line transportation

**Fast fault recovery**  
When AGV/AMR fails, they can be restored manually or automatically.

### Economic benefits

Reduce manpower input **20%<sup>↓</sup>**

Improve production turnover efficiency **20%<sup>↑</sup>**

Investment recovery cycle **1.5-2** Years

### Solution composition

System  
CRMS+CDSS

C1

C2

C5

CCM

CCS



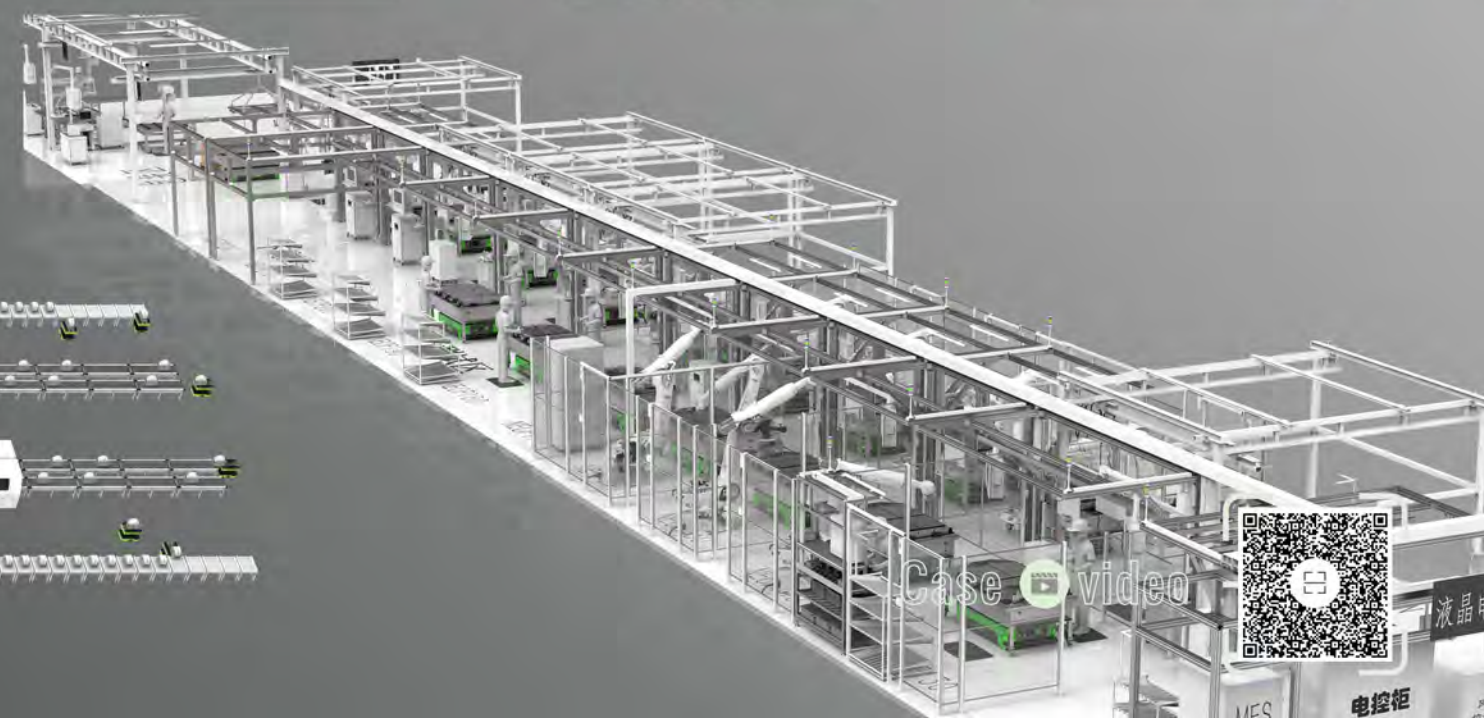
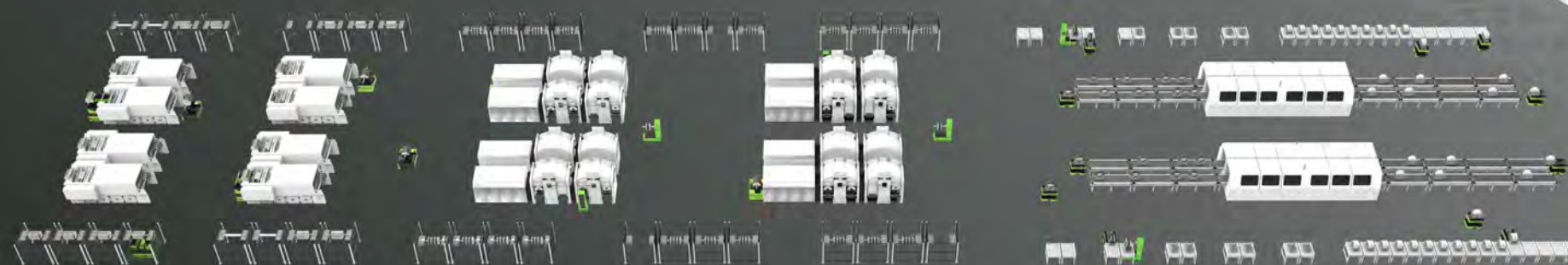
PACK flexible production lines assembly



PACK test workshop intelligent transportation logistics system



PACK finished products off-line transferring



Case video



液晶电

电控柜





# NEW ENERGY PHOTOVOLTAIC

## Requirement points

### Industry Overview

With the global fossil energy (oil, coal) increasingly close to exhaustion, climate warming ecological environment, countries around the world on the use of clean energy and carbon emission standards under strict requirements, photovoltaic power generation will become an important channel of energy output. In recent years, the application and development of photovoltaic energy storage technology is advocated vigorously by our country, and the industrial scale is expanded constantly. No matter in core technology, product manufacturing, equipment, or in market development, installation and service, it has a certain industrial chain with independent intellectual property rights, some of which have reached the international leading level. As an essential link in intelligent logistics, mobile robots are widely used in the photovoltaic industry, which greatly reduces the labor cost of logistics transportation and promotes the development of intelligent logistics.

### Industry trends

01

The mobile robot can realize the intelligent transportation of the photovoltaic industry's materials automatically on/off the line and in the middle of the transfer, and realize the unmanned automatic transportation;

02

Intelligent transportation also has systematic management, data traceability, improve management level;

03

By means of multi-system connection and integration, it can solve the problems of accuracy and efficiency of material transportation in each production line.

## PARTNER

BYD 比亚迪汽车

SAIC 上汽集团 SAIC MOTOR

吉利汽车 GEELY AUTO

小鹏

NISSAN

DENSO

Continental



Stamping workshop - stamping line tail transferring



Welding workshop - Material distribution



Assembly workshop - parts sorting and materials preparing

## Smart logistics solution

### Solution advantage

enhance productivity  
Automatic transfer of multiple production processes, efficient completion of transportation tasks.

intelligentize  
Improve the degree of intelligence, realize intelligent logistics.

Reduce labor intensity of personnel  
Automatic delivery of heavy materials to work stations.

### Economic benefits

Reduce manpower input 30%↑

Improve production turnover efficiency 20%

Investment recovery cycle 1.5-2 Years

### Solution composition

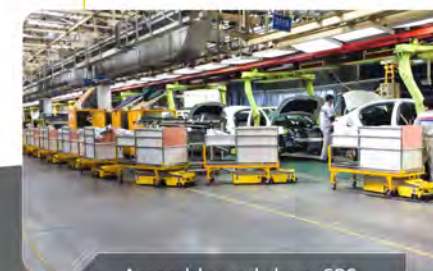
System  
CRMS+CDSS+CASS

C1

C2

C5

CCS



Assembly workshop -SPS trolley automatically on-line



Final assembly workshop - Flexible assembly of the subassembly line



Assembly workshop - point-to-point distribution of parts



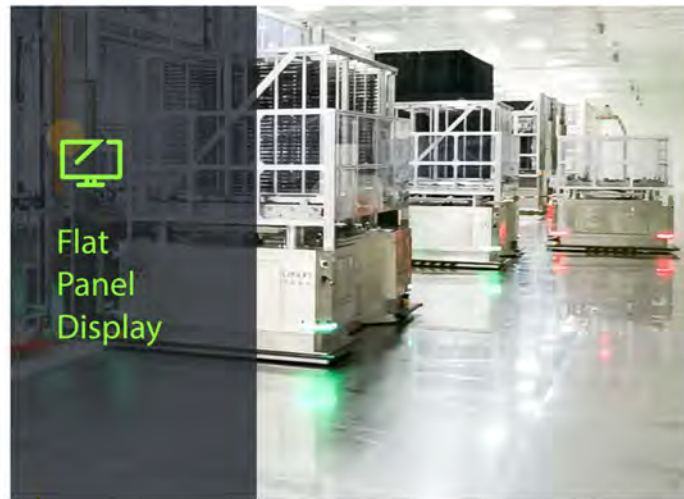
Case video







## Other Industry Solutions



Flat  
Panel  
Display

### Application scenarios

Module workshop, automatic storage of SKD module products off the line, polarizer raw material transportation and package material transfer between production lines.....

### Main features & highlights

The mobile robot completes the automatic distribution of materials (glass, polarizing plate skip, packaging materials, etc.), which can be transported across floors to the product entering the reservoir. AGV meets the requirements of thousand-grade cleanliness in the production workshop, and the vibration value is no more than 0.3g to ensure the safety of glass transportation; Interfacing with MES system to complete the functions of intelligent scheduling and production line interaction.



3C &  
Semiconductor

### Application scenarios

Finished product assembly workshop, electronic assembly, injection molding workshop, SMT workshop, raw material storage and handling.....

### Main features & highlights

Through AGV to complete the intelligent conveying of materials to the production line, the raw materials can be transported across floors; It can intelligently identify the status of the material box, and butt with the injection molding machine with high frequency and high precision, which solves the problem of elevator butt docking at different heights, and is compatible with multi-specification PCBA transfer. Realize the system independent material, intelligent handling, information collection, intelligent storage, and seamless docking with the user MES production management system.



Household  
Appliances

### Application scenarios

LED lamp assembly workshop, product production workshop, semi-finished product cache, finished product storage...

### Main features & highlights

The laser forklift AGV is used to complete the transportation of raw materials from the material waiting point to the production line, which can be intelligent docking with the mechanical arm; It realizes the high-frequency and interactive operation function of cluster scheduling, ensures the efficient operation of the production line, solves the problem of AGV docking with elevators, electronic doors and other equipment, and realizes cross-floor transportation. Connect with the customer's MES system, the system automatically calls materials, and realize fully automated and informationize material distribution;



Food  
and  
Beverage

### Application scenarios

Food cutting and packaging warehouse workshop, unpacking workshop, raw material distribution workshop, finished product warehouse cache, platform shipment...

### Main features & highlights

Realize automatic material transportation of finished product workshop, and accurate material positioning can be realized by visual positioning. In the automatic distribution of AGV, it can be connected with the baler and material identification equipment to realize the functions of automatic transfer, automatic packaging, automatic code scanning and data uploading.





## SERVICE CONCEPT



SPECIALTY



EFFICIENT



HIGH QUALITY

## SERVICE ITEM

### Pre-sale

#### Product consulting

General/custom product function and selection recommendation

#### Product planning

Site investigation, scheme design, process planning.

#### System design

Control system design and development

### Sale

#### Product customization

Production and development of customized products

#### System development

Software development deployment

#### Installation

Software and hardware Deployment

### After sales

#### Training

Product/system maintenance training

#### Operating services

Mobile robot management and maintenance

#### Maintenance service

After-sales support, regular inspection, 7\*24 hours customer service consultation

## SERVICE PROCESS



Consultation



Scenario Design



Sign contract



Design and develop



Service Provider



Technical Support



ODM Order

## FOLLOW US

### website



English Website

### WeChat



Service



Official Account



Video Account

### Other



Tiktik



Toutiao

### Download

