

ANTS AGV



Smart Lifting& Handling AGV Product Brochure

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1500+ Intellectual property rights (including several PCT international patents)

1500+ Users

30+ Countries and regions

Guozi Robotics is China's pioneer in globally scaling intelligent logistics robots. With products like the ANTS series, it offers agile, efficient, and high-return solutions for warehouse and industrial automation. Guozi's extensive industry experience has ensured customers worldwide receive exceptional logistics solutions.

Application Industry

- | | | | |
|---|---|---|--|
| 
E-Commerce | 
Retail | 
3PL | 
Med |
| 
Automotive | 
Garment | 
Food | 
Electricity |
| 
Machinery | 
Solar PV | 
3C | |

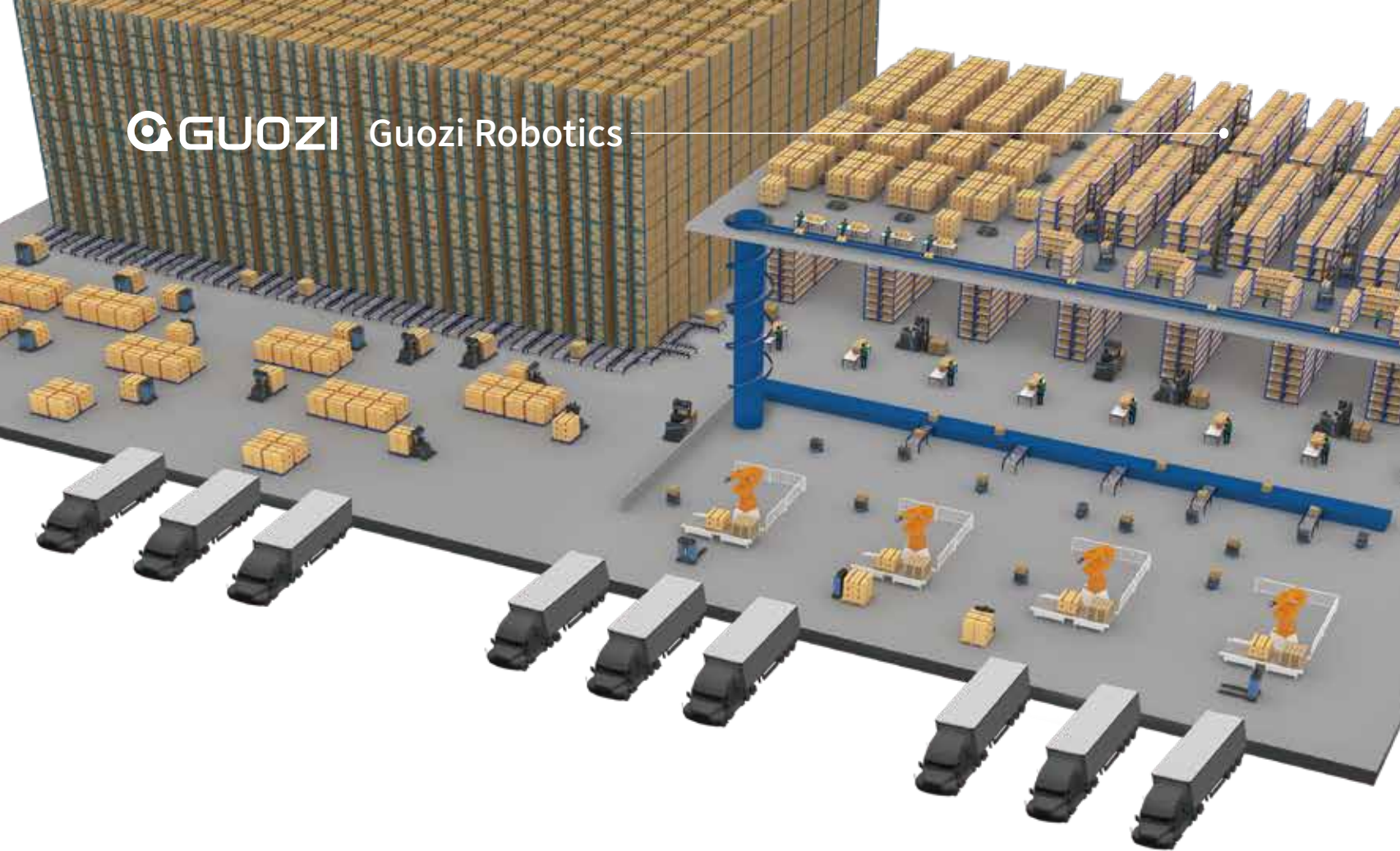
 **Implementation**
7 days~3 months

 **Warehousing Capacity**
Increased by 40% to 60%

 **Throwback Ratio**
Return on Investment: 1 to 3 years

 **Working Efficiency**
Boosted by 100% to 300% compared to traditional manual methods



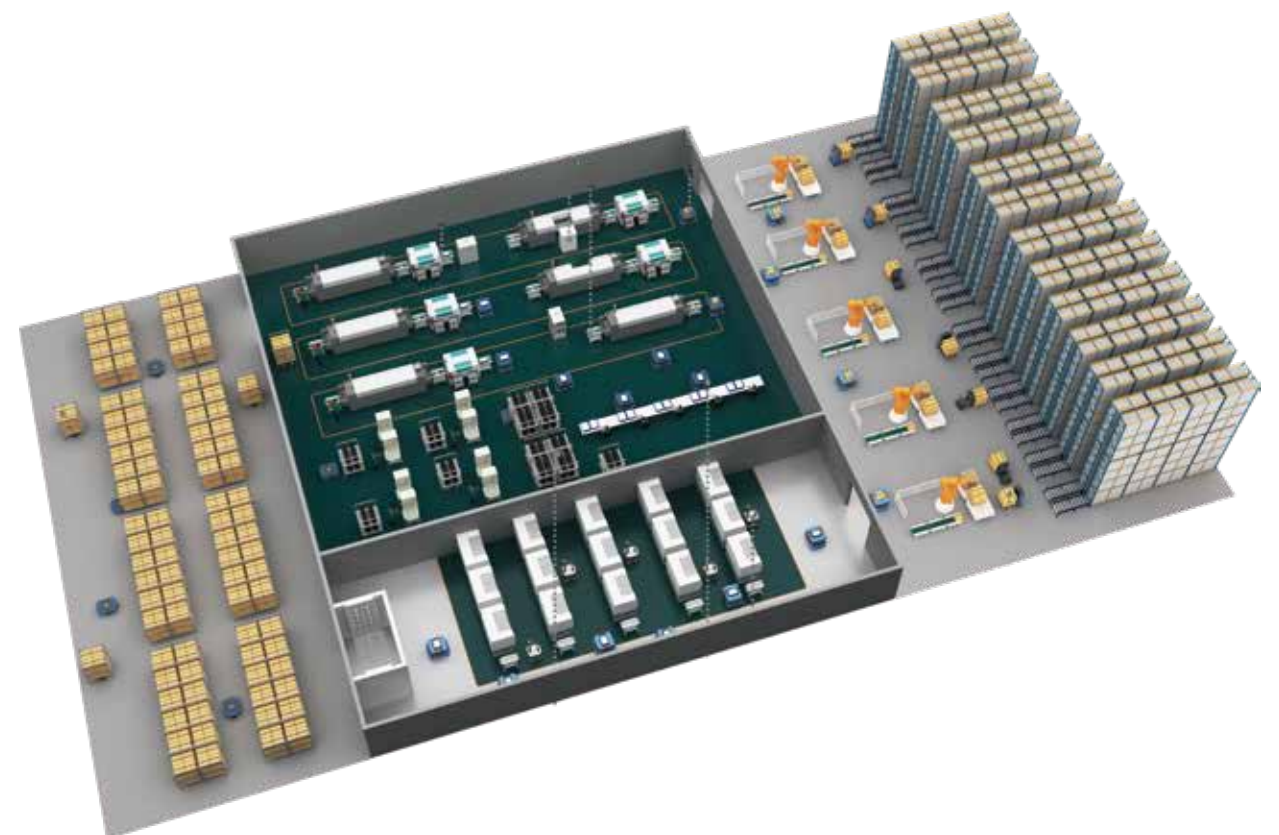


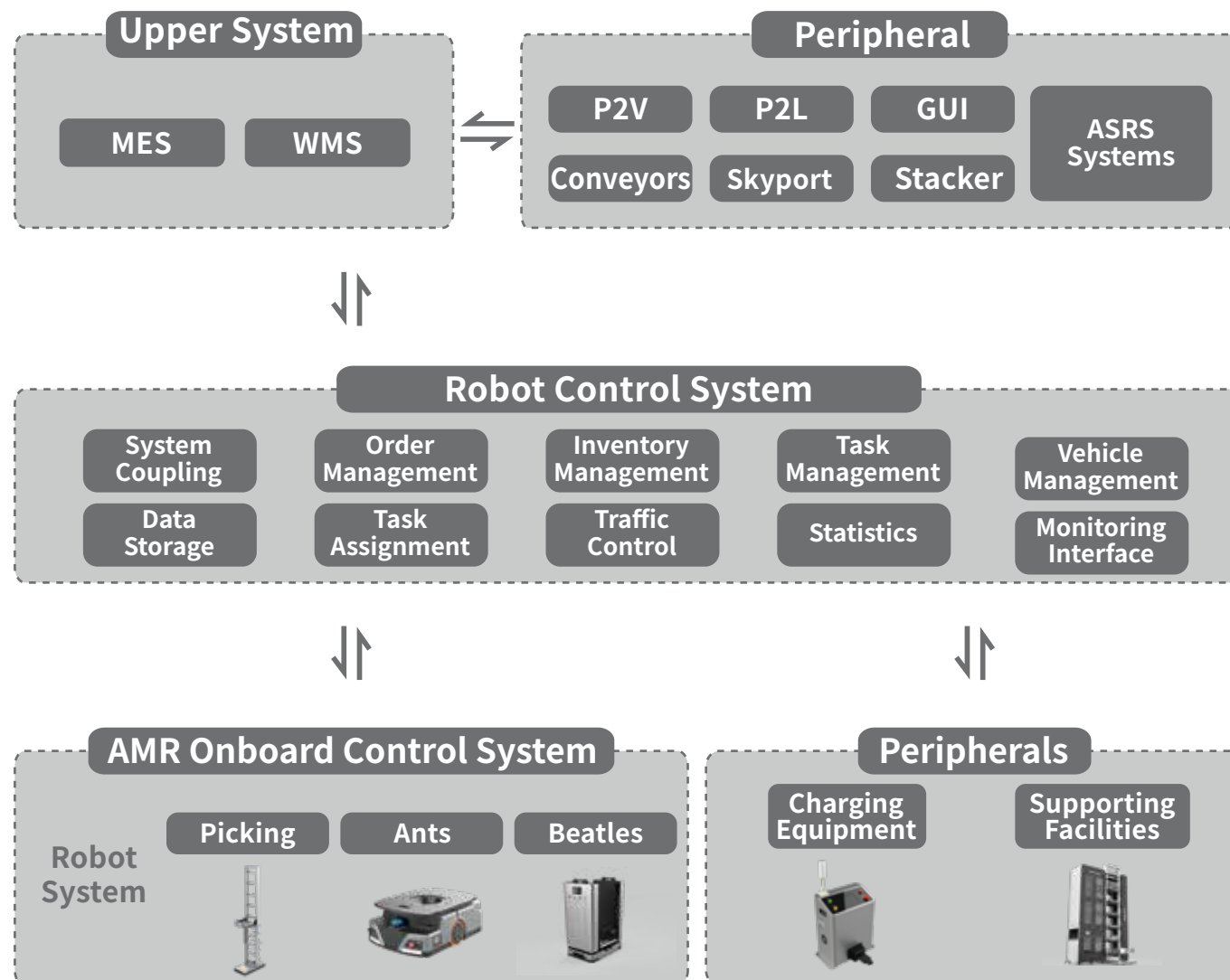
INTEGRATED SMART WAREHOUSING AND LOGISTICS SOLUTION

Our revolutionary smart warehousing and logistics solution, founded on the ethos of “Goods-to-Person, Order-to-Person,” seamlessly integrates three core product systems: Mobile Robots (ANTS AGV), Robot Dispatch System (RCS), and Intelligent Warehouse Management System (iWMS). This innovative solution adeptly tackles a wide spectrum of warehouse storage needs, spanning material acquisition through production storage, picking, and final product warehousing. Tailored for industries including e-commerce, retail, pharmaceuticals, food, apparel, and electronics, it significantly enhances warehouse operational efficiency.

INTEGRATED SMART INDUSTRIAL LOGISTICS SOLUTION

The intelligent industrial logistics integration solution is based on the flexible handling robot ANTS AGV and is centered around the Robot Control System (RCS). It aims to break through the logistics handling bottlenecks of discrete factory processes, redefine intelligent handling, enhance production line efficiency, and significantly reduce labor costs. By utilizing the flexible handling robot ANTS AGV to cover the full range of production line scenarios, it seamlessly integrates material flows across the entire production line. This solution efficiently accomplishes rapid material transfers between various production lines/workstations, fully automates loading and unloading processes, and fulfills the need for inter-floor and inter-building transportation. It is applicable to industries such as automotive manufacturing, construction machinery, 3C electronics, photovoltaics, semiconductors, tobacco, and new energy.





- | WMS | RCS | Robot System |
|---|---|---|
| <ul style="list-style-type: none"> Supports goods in/outbound, picking, inventory check and other warehouse management business functions. Supports various intelligent warehousing management requirements, real-time deployment and full tracking of orders for hot and slow-selling products. Coupling with the upper system using standard APIs, realizing the separable control of warehousing business and robot dispatch. | <ul style="list-style-type: none"> By decomposing the order tasks of the upper system, enable the scheduling and cooperation of hundreds of AGVs. Supports AGV task assignment, route planning, traffic control, autonomous charging and other functions. Seamlessly connects with QR code recognition functions to provide complete control dispatch, information flow and other functions. | <ul style="list-style-type: none"> Independent and stable robot system with high performance and high accuracy. Supports multi-mode positioning algorithm and high precision navigation algorithm adapted to various chassis structures. Flexibly adaptable to customized needs of hardware and software for the project with stable and reliable network communication. |

Stability

- High-precision mechanical structure design
- Smooth handling with high-level racking.
- Dual front and rear lasers for safety and greater environmental adaptability.

Safety

Authoritative Certification

ANTS10, ANTS15

Comply with ISO 3691-4:2020 European safety standards, CE certified by SGS, TUV Rheinland and other authoritative organizations. Compliant with ANSI/CAN/UL3100, FCC standards, applicable in North America.

Three-dimensional Protection

0-1800mm stereoscopic field of view, adaptable to human-machine mixed scenarios.

Flexibility

Multi-Vehicle Coordination and Mixed Dispatching

Mixed dispatching of large quantities, types, and brands of robots across the region, super-large scene deployment and map construction capabilities, and application experience in a single project exceeding 50,000 square meters.

Intelligent Recognition Flexible Handling

Intelligent point cloud recognition technology automatically identifies different types of docking equipment. Even if the docking equipment is not placed in a standardized manner, it can automatically recognize its posture and complete the docking process.

Various Sizes compatible Flexible use

Extremely strong compatibility, compatible with all kinds of material trolleys, shelves, pallets and other carriers within the range of 1000-2500mm.

Efficiency

Barrel Enduring power

One charge can run continuously for 10 hours, and multiple robots cooperate to realize 7*24 hours operation without stopping.

Rapid Deployment

Adopt Guozi Xpress rapid implementation system to realize 7-day rapid go-live.

Ants 3



Operational Performance

- Walking mode
Two wheel differential Forward, backward, turn, rotate
- Rated operating speed (full load)(m/s) :**1.2**
- Maximum climb (full load/no load)%: **3/5**
- Conventional obstacle/ditch crossing capability (full load/no load)(mm) : **≤5/8**
- Elevator barrier/ditch crossing ability (full load/no load)(mm) : **≤8/20**

Network Performance

- Network configuration
Standard 5.8GHz WiFi (802.11a /n)5G available

Navigation Performance

- Navigation mode (Q/L)
QR Code Navigation (Q)/ Laser Navigation (L)
- QR Code navigation Stop position accuracy (mm) **±5**

Battery Performance

● Battery category Lithium iron phosphate battery	● Charge-discharge ratio 1:7
● Running time (H) 10	● Full of Time (H) 1.5

Basic Parameters

● Working environment Indoor, temperature 0-40°C, humidity 20-80%	● Rated load (kg) 300
● Noise (dB) <70	● Rotating diameter (mm) 860
● Overall Dimension L×W×H(mm) 795×560×285	● Lifting stroke(mm) 60

Safety Performance

- Authentication
System CE
- Scram button
Front and rear emergency
- Obstacle detection mode
Front and rear laser detection
- Safety contact border collision
Front and back contact
- Three-dimensional protection
Optional
- Audible and visual alarm
Available

Ants 8



Operational Performance

- Walking mode
Two wheel differential Forward, backward, turn, rotate
- Rated operating speed (full load)(m/s) :**1.2**
- Maximum climb (full load/no load)% : **3/5**
- Conventional obstacle/ditch crossing capability (full load/no load)(mm): **≤5/8**
- Elevator barrier/ditch crossing ability (full load/no load)(mm) : **≤10/30**

Network Performance

- Network configuration
Standard 5.8GHz WiFi (802.11a /n)5G available

Navigation Performance

- Navigation mode (Q/L)
QR Code Navigation (Q)/ Laser Navigation (L)
- QR Code navigation Stop position accuracy (mm) **±5**

Battery Performance

● Battery category Lithium iron phosphate battery	● Charge-discharge ratio 1:5
● Running time (H) 8	● Full of Time (H) 1.5

Basic Parameters

● Working environment Indoor, temperature 0-40°C, humidity 20-80%	● Rated load (kg) 1000
● Noise (dB) <70	● Rotating diameter (mm) 995
● Overall Dimension L×W×H(mm) 995×650×265	● Lifting stroke(mm) 60

Safety Performance

- Scram button
Front and rear emergency
- Obstacle detection mode
Front and rear laser detection
- Safety contact border collision
Front and back contact
- Three-dimensional protection
Optional
- Audible and visual alarm
Available

Ants 10



Ants 15



Operational Performance

- Walking mode
Two wheel differential Forward, backward, turn, rotate
- Rated operating speed (full load)(m/s) :**1.2**
- Maximum climb (full load/no load)% :**3/5**
- Conventional obstacle/ditch crossing capability (full load/no load)(mm):
≤5/8
- Elevator barrier/ditch crossing ability (full load/no load)(mm) :**≤10/30**

Network Performance

- Network configuration
Standard 5.8GHz WiFi (802.11a /n)5G available

Navigation Performance

- Navigation mode (Q/L)
QR Code Navigation (Q)/ Laser Navigation (L)
- QR Code navigation Stop position accuracy (mm)
±5

Battery Performance

- | | |
|---|--|
| ● Battery category
Lithium iron phosphate battery | ● Charge-discharge ratio
1:5 |
| ● Running time (H)
10 | ● Full of Time (H)
1.5 |

Safety Performance

- Authentication
CE/NRTL
- Scram button
Front and rear emergency
- Obstacle detection mode
Front and rear laser detection
- Safety contact border collision
Front and back contact
- Three-dimensional protection
Optional
- Audible and visual alarm
Available

Basic Parameters

- | | |
|---|---|
| ● Working environment
Indoor, temperature 0-40°C, humidity 20-80% | ● Rated load (kg)
1000 |
| ● Noise (dB)
<70 | ● Rotating diameter (mm)
1150 |
| ● Overall Dimension L×W×H(mm)
1146×810×275 | ● Lifting stroke(mm)
60 |

Operational Performance

- Walking mode
Two wheel differential Forward, backward, turn, rotate
- Rated operating speed (full load)(m/s) :**0.8**
- Maximum climb (full load/no load)% :**3/5**
- Conventional obstacle/ditch crossing capability (full load/no load)(mm) :
≤5/8
- Elevator barrier/ditch crossing ability (full load/no load)(mm) :**≤10/30**

Network Performance

- Network configuration
Standard 5.8GHz WiFi (802.11a /n)5G available

Navigation Performance

- Navigation mode (Q/L)
QR Code Navigation (Q)/ Laser Navigation (L)
- QR Code navigation Stop position accuracy (mm)
±5

Battery Performance

- | | |
|---|--|
| ● Battery category
Lithium iron phosphate battery | ● Charge-discharge ratio
1:5 |
| ● Running time (H)
8 | ● Full of Time (H)
1.5 |

Safety Performance

- Authentication
CE/NRTL
- Scram button
Front and rear emergency
- Obstacle detection mode
Front and rear laser detection
- Safety contact border collision
Front and back contact
- Three-dimensional protection
Optional
- Audible and visual alarm
Available

Basic Parameters

- | | |
|---|---|
| ● Working environment
Indoor, temperature 0-40°C, humidity 20-80% | ● Rated load (kg)
1500 |
| ● Noise (dB)
<70 | ● Rotating diameter (mm)
1150 |
| ● Overall Dimension L×W×H(mm)
1146×810×275 | ● Lifting stroke(mm)
60 |

Intelligent Warehousing Application in the Home Furnishing Industry

Project Location: Canada

A century-old European home furnishing brand, with hundreds of stores established globally across multiple countries, has set up its warehouses covering over 10,000 square meters in Canada. Managing thousands of types of home products in its warehouse zones, it provides home product distribution services to millions of customers in North America. With Guozi Robotics, it achieves various types and large quantities robot collaborative operations, intelligently completing path planning to achieve optimal traffic selection and operational efficiency, maximizing warehouse space utilization and enhancing operational efficiency.

Customer Pain Point

- During peak hours, there is a high demand for manual labor, resulting in high costs, low efficiency, and potential safety risks, making it difficult to meet the continuous operational needs of logistics.
- Home furnishing products vary greatly in appearance and characteristics, with a wide variety of types. Manual picking and sorting processes are time-consuming, inefficient, and prone to errors.
- Some goods are placed directly on the ground due to limitations in warehouse environment, resulting in low utilization of vertical space and wasted storage space.

Solutions

- Some goods are placed directly on the ground due to limitations in warehouse environment, resulting in low utilization of vertical space and wasted storage space.
- Employ Picking AGVs to transport medium and small-sized home furnishing products between the picking shelves and workstations, as well as between workstations and the storage shelves, facilitating their circulation and storage.
- Implement unified dispatching of multiple types of robots to accurately pick and place each SKU, thereby improving overall logistics efficiency and stability.
- Utilize various types of shelves to meet the handling requirements of different product types, and employ a mixed operation mode with two types of logistics robots to expand vertical shelf space, significantly increasing storage capacity.

Benefits

By implementing Guozi Robotics' intelligent home furnishing handling solution, the client's warehouse system has been successfully upgraded. Integration with the client's warehouse management system and security system has resulted in an improvement of over 40% in warehouse logistics transportation and picking efficiency. Additionally, effective utilization of the solution has increased warehouse capacity by over 50%.



Intelligent Warehousing Application in the Food Industry

Project Location: Italy

The customer is a manufacturer integrating agricultural planting, production processing, packaging, and transportation. Against the backdrop of rapid development in intelligent warehousing globally, they are committed to creating a new intelligent warehouse for food production. Guozi Robotics provides them with an intelligent warehousing handling solution, with the Ants3 lifting robot and the Slim stacking robot as its core. This solution enables the automatic circulation of pallets and crates between storage areas, conveyor lines, and picking stations, replacing manual labor and facilitating the intelligent upgrade of traditional warehousing models in the food industry.

Customer Pain Point

- The low efficiency and high error rate of manual handling make it difficult to adapt to the rapid development of enterprise business.

Solution

- Warehouses with diverse food types and intricate production processes, we innovatively utilize dynamic warehouse management and dynamic route planning in software development. This makes warehousing handling more intelligent, effectively tackling complex environments.
- The Ants A3 lifting robot transports loaded turnover boxes and food packaging materials to designated areas for picking, transportation, cleaning, and other tasks. Meanwhile, the Slim stacking robot handles trays filled with packaging materials and quality-inspected food product trays to enhance efficiency in transportation and outbound operations

Benefits

Guozi Robotics' intelligent warehousing handling solution has significantly boosted our client's warehouse handling efficiency, accelerating food production processes while ensuring a safe and healthy production environment. Our solution has doubled to tripled the overall product output compared to traditional food industry standards, resulting in an 80% increase in operational efficiency.



Intelligent Warehousing Application in the E-commerce Industry

Project Location: America

This customer is one of the largest home furnishing e-commerce platforms in North America, with a collection of over 2 million home furnishing products worldwide. Its warehouse in Florence, USA, is mainly used for storing and processing returned home furnishing products from the platform, covering an area of 360,000 square feet. Guozi provides them with an intelligent warehousing logistics solution, starting from the process of returning goods to inventory picking. Multiple Ants AGVs are used for picking and buffering, significantly improving the efficiency of the return process.

Customer Pain Point

- © The majority of returns on the platform come from individual consumers, with returned items often being single pieces and the timing, variety, and quantity of returns being uncertain. This results in a large and challenging workload for return inventory sorting, often leading to inaccuracies in inventory due to misclassification and omissions.
- © There is a wide variety of home furnishing products with significant differences in volume and weight, further complicating the logistics, transportation, handling, and warehousing of returns, leading to high logistics costs.
- © Return warehouse operations primarily rely on manual labor. During peak return periods, the warehouse may struggle to cope with the increased workload, impacting the efficiency of return processing on the platform.

Solutions

- © After the returned products are transferred to the picking station through the conveyor line, the operator evaluate and classify the returned products. Subsequently, ANTS will transport the returned products to the designated sorting area, significantly reducing the duration of manual ineffective movements and effectively ensuring the safety of warehouse personnel.

Benefits

Guozi assists customers in achieving refined management of return warehouses, improving the speed of return logistics, the quality of return services, and the overall operational efficiency of the platform. The efficiency of picking in return warehouses increases by 80%, and the accuracy of selection increases to 98%, effectively alleviating pressure during peak periods of platform return business.



Smart Warehouse Application in the Photovoltaic Industry

Project Location: China

The client is a leading company in the photovoltaic manufacturing industry in China, specializing in the research, development, production, and sales of solar cells, modules, and photovoltaic application products. Guozi employs the "AGV+" intelligent handling solution to assist its photovoltaic cell production base in achieving inter-factory logistics automation handling.

Customer Pain Point

- © In photovoltaic cell production, continuous operation 24 hours a day is required, with high demands on handling accuracy and efficiency. Previously, manual handling was used, leading to issues such as material damage, low efficiency, and low level of informatization in the logistics process, all of which hindered the improvement of production efficiency for the enterprise.

Solutions

- © In the dispensing workshop, the automatic dispenser is responsible for automatically delivering stack boxes into the material trolley, which are then transported by ANTS to the waiting machine station.
- © In the solar cell workshop, ANTS transports the basket trolley to facilitate the flow between upstream and downstream processes.
- © In the packaging workshop, bin boxes are sent by ANTS to the automated packaging line, allowing for rapid sorting via conveyor belts.

Benefits

Guozi Robots, with more than 200 Ants AGV robots as the core, combined with docking stations, basket trolleys, intelligent cleaning robots, environmental monitoring robots, dispensers, automated packaging lines, and other various automation equipment, interconnects 16 production line processes. With multi-vehicle dispatching and smart management, it achieves an annual production target of 8 GW. After the project is put into operation, users can real-time access inventory information through the management system, generate inventory, inbound/outbound, and handling volume reports, completely eliminating manual periodic inventory counting methods, and making the production process informatized and intelligent. At the same time, it allows on-site workers to bid farewell to the tedious and heavy production handling process, reducing the enterprise's production safety risks and labor costs.

- © The Guozi photovoltaic production platform (GZ-GFMCS) is utilized for multi-vehicle dispatching and intelligent control, significantly enhancing the level of informatization management in the user's production process. With built-in intelligent optimization logic, it can intelligently issue and adjust AGV handling tasks based on machine capacity and internal data status. Through the Guozi intelligent dispatching management system (GZ-RCS), dispatching process optimization and intelligent path setting are achieved to divert congested routes, efficiently completing handling tasks. Users can also freely adjust AGV running paths based on actual operation paths. The system supports the simultaneous management of over 1,000 AGVs.

