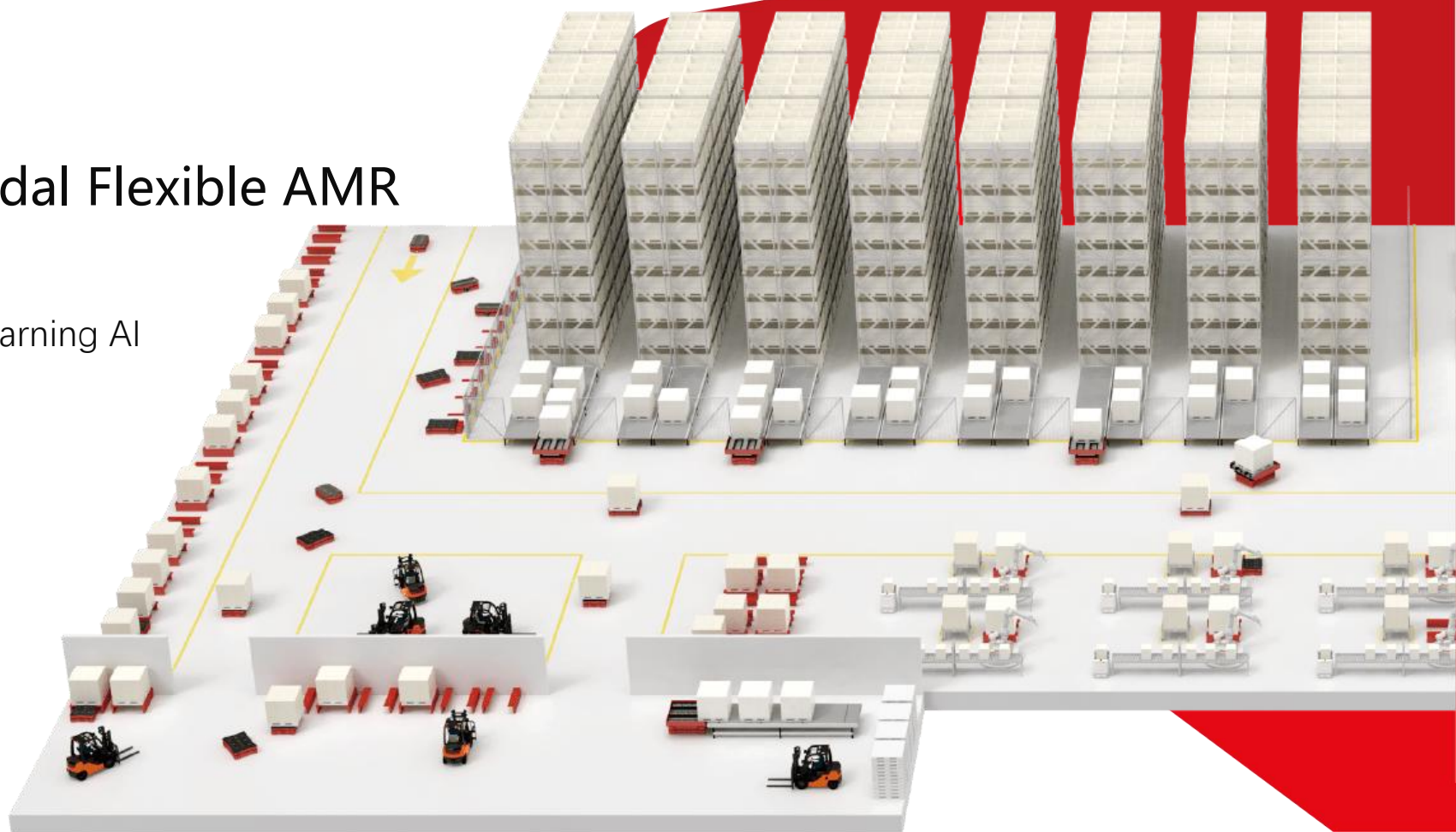# Let the robotics handle the heavy load, while humans concentrate on innovation

A Leading Provider of efficient and cost-effective logistic solutions

Global First Launch
Fifth Generation Multi-Modal Flexible AMR

- ◆ Computing cluster cloud server
- ◆ High performance, real-time, deep learning AI
- ◆ Autonomous driving technology
- ◆ ChatGPT large model network

CONTENTS

About Us

RoboticsAlpha Shenzhen Ltd.(RA) is a leading enterprise in the field of intelligent logistics solutions, that specializes in the research and application of Autonomous Mobile Robots (AMR) and unmanned forklift technology. Driven by continuous innovation, RA utilizes advanced technologies such as SLAM (Simultaneous Localization and Mapping), visual fusion navigation, and cluster scheduling algorithms to provide all-scenario flexible solutions across various industries, aiming to create stable and efficient productivity. These advanced technology has allowed RA to be able to recently introduce the world's first fifth-generation multi-modal flexible AMR. RA possesses a team of top industry experts and technical elites, who has assisted dozens of Fortune 500 companies, both domestic and international, in achieving intelligent upgrades in industrial logistic applications. RA projects span across various industries such as cosmetics, medical, 3PL, footwear and apparel, and electronics. RA consistently views technological innovation and customer needs as its core which in turn leads to transformation in intelligent logistics while propelling customers into a new era of intelligent manufacturing.

Enhance efficiency
2-3 Times

Repurchase rate
60%+

Proven in commercial application by
Top 500 Enterprises

Fast deployment
1 Week

International Safety Standard
CE

Fast ROI
1.5 Years

稳石机器人
Robotics α

Complete R&D, Production, and Solution Demonstration Factory

5000 m²
Production And Research Base

1500 AMRs/Year
Delivery Capability

Robotics α

Fifth-Gen Multi-Modal Flexible New Products

Boundless Integration, Empowering Innovative Factory and Warehouse Logistics

稳石机器人
Roboticsα

Labor Replacement Rate： 85%

Multi-Modal Scenarios: Our proprietary asynchronous positioning fusion algorithm integrates an odometer, IMU, single-line LiDAR, multi-line LiDAR, RGBD camera, and RTK technology to deliver highly accurate and stable positioning information. The system supports various navigation methods, including QR codes, parallel parking spaces, four-point parking spaces, V-shaped features, and pallet recognition. Additionally, it facilitates automated tasks such as recharging, warehouse inbound, pallet handling, and high-precision arriving at the task point.

High computing： Intelligent positioning management algorithms support various indoor and outdoor scenarios *(open indoor spaces/crowded areas/narrow alleys, outdoor mixed pedestrian and vehicle areas/traffic intersections)*.

Solutions: Achieving near-unmanned management throughout the entire process, including raw materials inbound, warehouse management, assembly line operations, intra-factory transport, and finished products outbound.
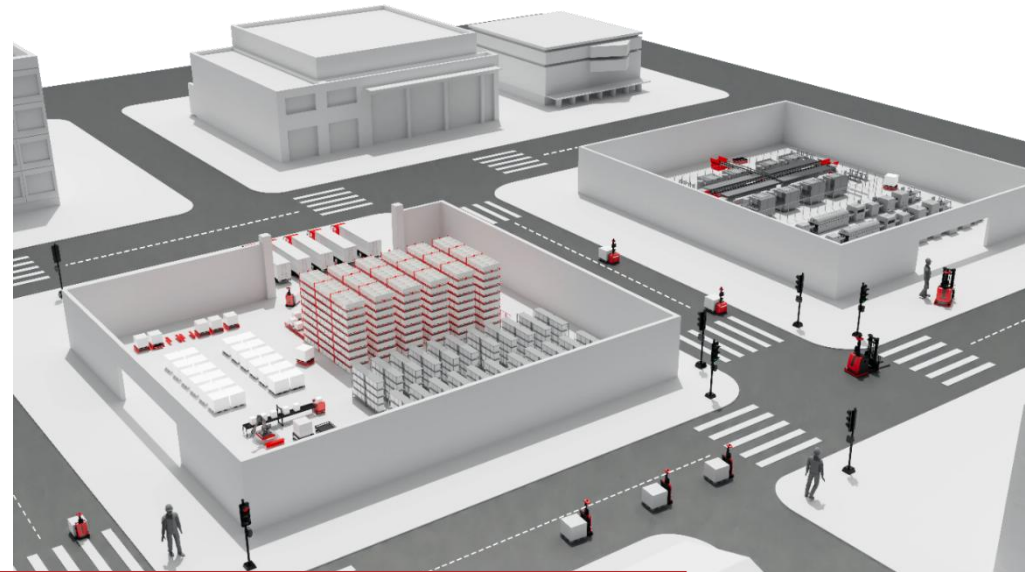
The 5th generation multi-modal flexible integrated controller

Embracing Industry 4.0+ Intelligent Manufacturing

稳石机器人
Robotics α

Ushering in a new Era of Smart Logistics Providing Flexible Solutions for All Scenarios

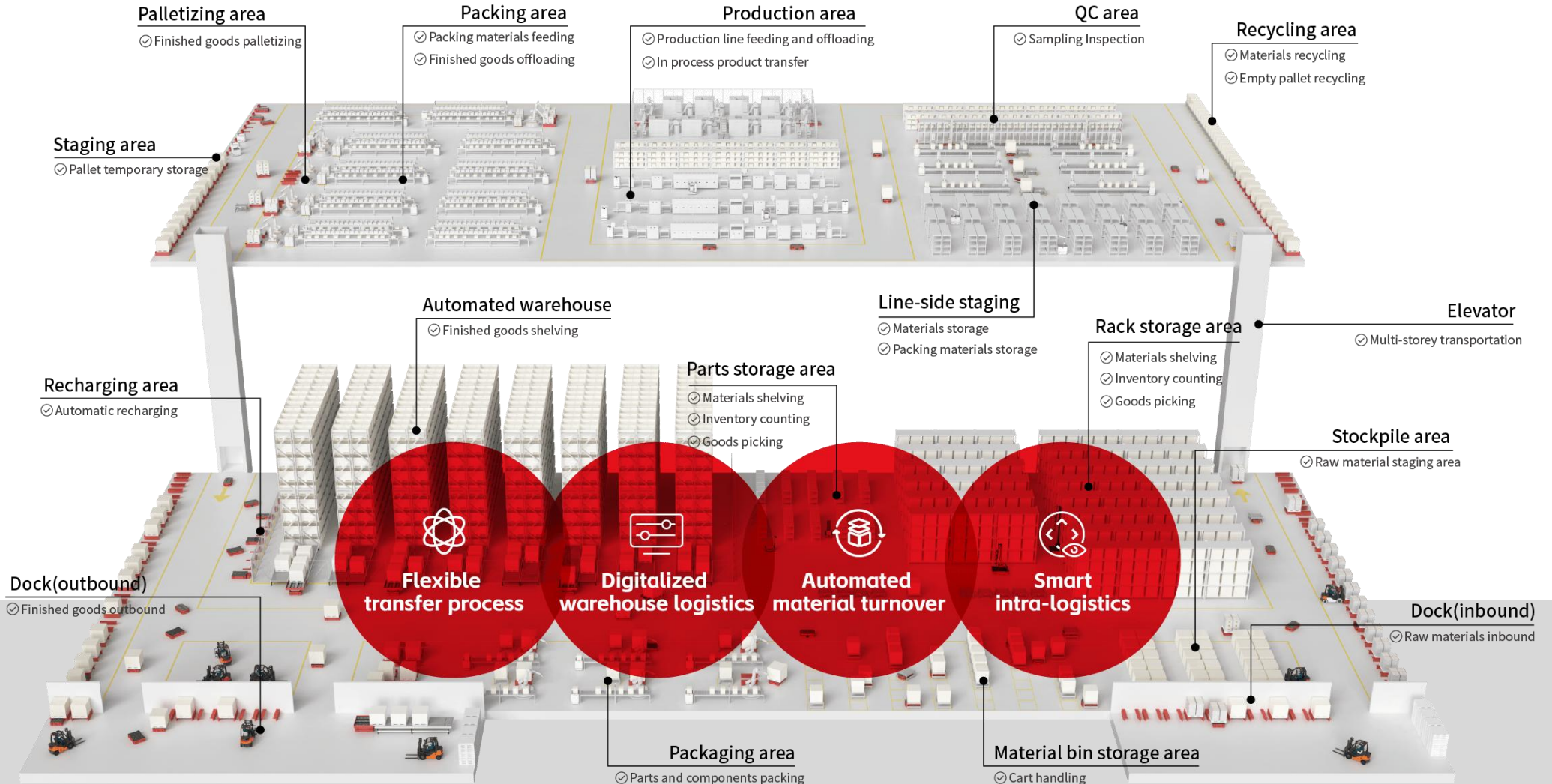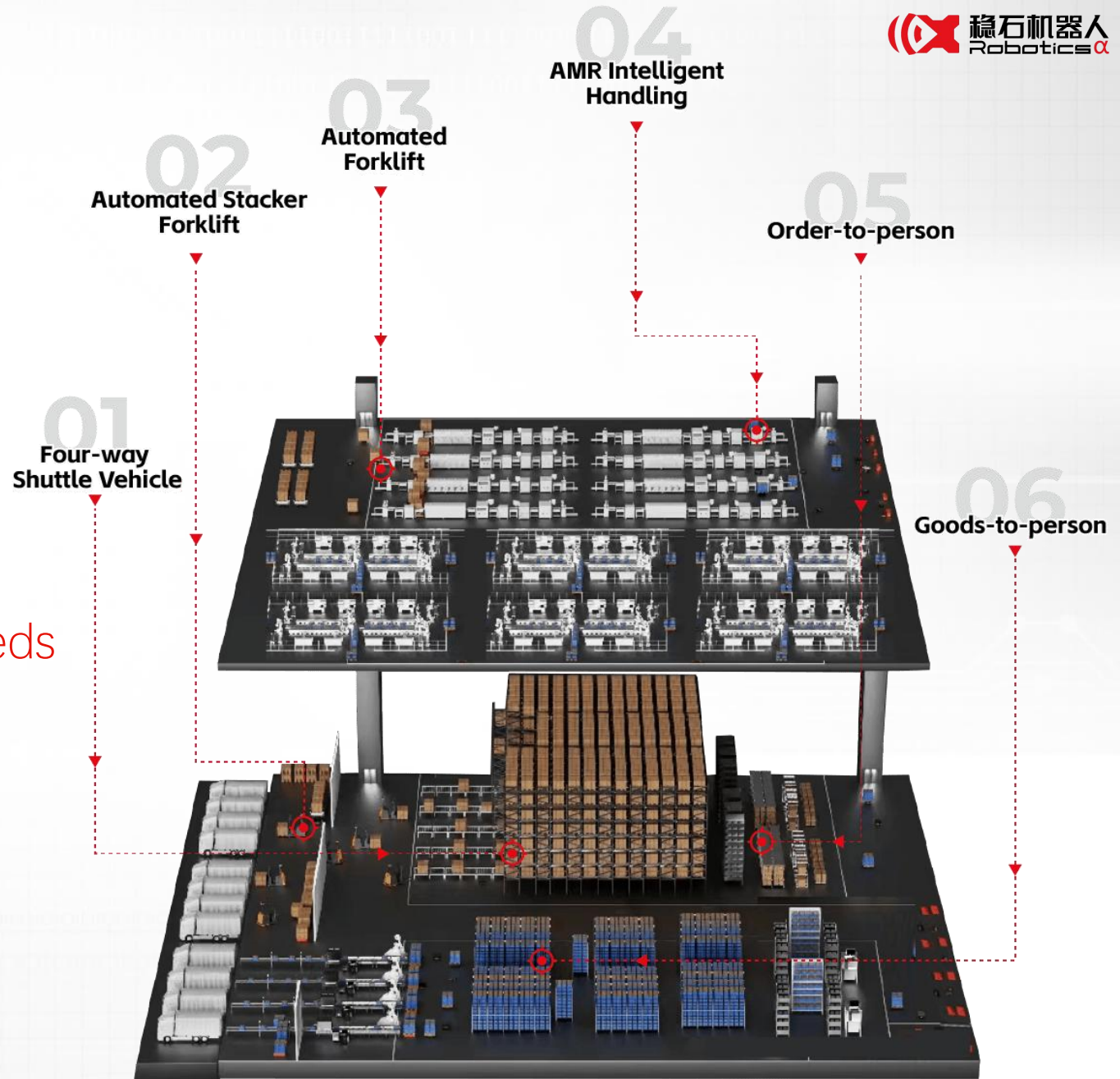We have launched multi-scenario flexible logistics solutions by integrating AMRs together with distributed scheduling systems. Which in turn, provides efficient flexible logistics productivity support through the entire process from raw material inbound to in-process product circulation to finished product outbound. By using real-time production data, seamless third-party systems integration, data visuals, real-time monitoring of factory and warehouse information, and bridging the data flow of upstream and downstream logistics, we can facilitate the process of industrial production intelligence for our various clients and their industries.

Palletizing area
- ⊘ Finished goods palletizing

Packing area
- ⊘ Packing materials feeding
- ⊘ Finished goods offloading

Production area
- ⊘ Production line feeding and offloading
- ⊘ In process product transfer

QC area
- ⊘ Sampling Inspection

Recycling area
- ⊘ Materials recycling
- ⊘ Empty pallet recycling

Staging area
- ⊘ Pallet temporary storage

Automated warehouse
- ⊘ Finished goods shelving

Line-side staging
- ⊘ Materials storage
- ⊘ Packing materials storage

Rack storage area
- ⊘ Materials shelving
- ⊘ Inventory counting
- ⊘ Goods picking

Elevator
- ⊘ Multi-storey transportation

Recharging area
- ⊘ Automatic recharging

Parts storage area
- ⊘ Materials shelving
- ⊘ Inventory counting
- ⊘ Goods picking

Stockpile area
- ⊘ Raw material staging area

Dock(outbound)
- ⊘ Finished goods outbound

Flexible transfer process

Digitalized warehouse logistics

Automated material turnover

Smart intra-logistics

Dock(inbound)
- ⊘ Raw materials inbound

Packaging area
- ⊘ Parts and components packing

Material bin storage area
- ⊘ Cart handling

Key Solutions Provided to Construct a Smart Plant to Increase Competitiveness

Customized intelligent warehousing solutions to satisfy various customer needs

稳石机器人
Robotics α

01 Four-way Shuttle Vehicle

02 Automated Stacker Forklift

03 Automated Forklift

04 AMR Intelligent Handling

05 Order-to-person

06 Goods-to-person

稳石机器人
Robotics

A.
Goods-to-person

Recommended Model | WS-A600XH

Utilizing strategic system planning, precise robot design, and advanced navigation and safety measures, our robots autonomously deliver goods to staff by accurately locating and reaching designated shelves.

Common Pre-Solution Challenges

- High Labor Costs
- High Labor Intensity
- High Human Error Rate
- High Safety Risks

Applications

E-commerce warehouses, large-scale manufacturing factories, and raw material distribution warehouses which have many SKUs with relatively small volumes and high picking efficiency requirements.

B.
Order-to-person

Recommended Model | WS- A300BSE / -A500LS / -A1200LSE

Automating goods distribution is achieved through a sequence of steps: receiving orders, planning routes, dispatching robots, locating targets, retrieving goods, navigating obstacles, delivering to specified locations, and finally, handing over the goods.

Common Pre-Solution Challenges

- Complex Production Process
- High Inventory Space Utilization
- Long Production Wait Times
- Inaccurate Material Distribution

Applications

Raw material warehouses in small and medium-sized manufacturing plants which have multi-level shelves or automated storage and retrieval system, or shelves in the warehouse for storing and picking, requiring human-robot mixed-use collaborative picking.

Material Turnover Handling

稳石机器人
Robotics α

A.
AMR Smart Handling

Recommended Model | WS- A300BSE / -A500LS / -A1200LSE

Achieving autonomous movement, efficient handling, and safe operation through steps such as task planning, visual recognition, movement path planning, goods pick and drop, load control, obstacle avoidance, safety measures, system integration, data interaction, monitoring, and alarms.

Common Pre-Solution Challenges

- High Labor Costs
- Low Handling Efficiency
- High Product Damage Rate

Applications

Narrow Aisles, Bin/Cart/Pallet Handling.

B.
Automated Forklift Handling

Recommended Model | WS-T1500BS / -L1400BS

Combining autonomous navigation systems, route planning, obstacle avoidance, goods identification, retrieval, integration with shelf management systems, load capacity safety features, battery management charging systems, real-time monitoring fault alarms, data analysis optimization, and unmanned forklifts help achieve automated operation, efficient handling, and safe operation in warehouse environments.

Common Pre-Solution Challenges

- High Safety Risks
- High Labor Costs
- Low Handling Efficiency
- High Rate of Goods Damage and Errors

Applications

Direct Handling of pallets/Large material crates.

Palletized Vertical Storage

稳石机器人
Robotics α

A.
Four-way Shuttle Vehicle

Recommended Model | WS-M1600BM

Integrating autonomous navigation systems, four-way driving capability, multi-level deck designs, precise cargo positioning and picking, task scheduling, route planning, monitoring and safety measures, data analysis and optimization, as well as charging and endurance management, works together to achieve autonomous and flexible handling, efficient operations, and safe functioning in warehouse environments.

Common Pre-Solution Challenges

- Low Precision in Storage and High Error Rate
- High Safety Risks for Personnel
- Low Efficiency in Material Handling

Applications

Brand New Constructed Automated Storage System, Intensive Storage, Suited for Scenarios Requiring High Efficiency in Inbound and Outbound Operations.

B.
Automated Forklift Handling

Recommended Model | WS-T1500BS / -L1400BS

By combining autonomous navigation systems, path planning, obstacle avoidance, traction and lifting capabilities, cargo identification, system integration and task scheduling, safety and stability, monitoring and fault alarm, and data analysis and optimization, work together to achieve automated operation, efficient handling, and safe operation of unmanned forklifts in warehouse environments.

Common Pre-Solution Challenges

- Low Storage Density
- High Damage and Error Rates
- Slow Handling Speed

Applications

Intelligent Upgrade of Existing Racking Systems, Neatly Organized Goods, Full Pallet Inbound and Outbound.

Committed to Manufacturing and Logistics
Proven in commercial application by tens of Top 500 companies

Continuously enhancing industry expertise, we provide comprehensive flexible solutions with autonomous mobile robots for all scenarios, allowing companies to position themselves strategically to become an industry leader.

Trades

Cosmetics

Auto Parts

Footwear and Apparel

E-commerce

Food

Lithium Battery

Photovoltaics

3C Electronics

Pharmaceuticals

Sanitary Ware

Customs

Manufacturer's Own Warehousing

Third-party Logistics (3PL)

Semiconductor

- ☑ Reduce labor costs, increase employee efficiency
- ☑ Accelerate automated processes;rapid deployment
- ☑ No reconstruction needed, low investment, low risk
- ☑ Digitize warehousing
- ☑ Relay picking, enhance efficiency

Added Values

Unleashing Efficiency Potential, Leading the Revolution in the Cosmetics Industry
One of the World's Largest Cosmetics Companies

Needs

1. Introduce automated transport equipment to replace some manual labor and forklifts on the production line;
2. Increase production capacity and efficiency;
3. Meet international safety standards, ensuring safe production.

Current situation

1. Factory layout is compact with narrow spaces to navigate; some areas have twisting, tight passages, most corridors are occupied by forklifts, also requiring integration with automatic roller doors;
2. Need to strictly maintain production rhythm.

Solution

CE Certified AMR Offers Full-Pallet Handling + Automatic Material Transfer, with a Distributed Scheduling System Ensuring Efficient Operation

Hardware | Custom Dual-Layer Roller AMR + 1200KG Payload AMR with Lifting Component + Charging Stations + Material Platform

Software | Distributed Cluster Scheduling System + Material Management Platform + Custom Mobile Interaction Software

Performance Value

- Replace Transport and Loading/Unloading Positions, and Significantly Reduce Manual Labor Intensity

- Significant Increase in Production Efficiency

- Substantially Reduce Forklift Operators

Cosmetics

WS- A300BSE + **WS**-A1200LSE

2 years
ROI

Model

Raw materials feeding+ FG offloading + Packing materials feeding
Workflow

Smart Warehousing Empowers the Auto Parts Industry with an Efficient Supply Chain
Major Chinese Auto Parts Manufacturer

Needs

1. Implement automation to alleviate work intensity;
2. Reduce labor costs.

Current situation

1. Multi-Storey transportation across three floors is required between the production line and the warehouse;
2. The factory uses a large number of special trolleys, which cannot be modified.

Solution

AMR Perfectly Adapts to the Original Scenario, with a Distributed Scheduling System Enabling Multi-Storey Transportation

Hardware | Customized Lifting AMR + Charging Stations + Automatic Lifting Platform

Software | Distributed Cluster Scheduling System + Material Management Platform + Customized On-Board Interaction Software

Performance Value

- Increase Transportation Efficiency by 40%, Significantly Reduce Manual Labor Intensity

- Replace Existing Transportation Positions, Saving Labor Costs Equivalent to 15 Personnel

Auto Parts

2 years
ROI

WS-A500LS
Model

Seat Framework material feeding
Workflow

Flexible logistics in the footwear and apparel industry, precise inventory management, helping to boost sales

Global top-tier sporting goods OEM factory

Needs

Introducing automated transportation equipment in old factories to replace manual, long-distance, and multi-storey transportation.

Current situation

Deployment in a twenty plus year old factory presents high difficulty, with elevators and some passageways being extremely narrow

Solution

Intelligent Dispatching Enhances Handling Efficiency, and the Distributed Scheduling System Integrates with Elevator IoT, Achieving Multi-Storey Transportation

Hardware | Customized lifting AMR + Custom Material Racks + Charging Stations

Software | Distributed Cluster Scheduling System + Material Management Platform + Customized Mobile Interaction Software

Performance Value

- Replace transportation human roles, with each AMR replacing an average of 2 manual workers

- Transportation efficiency increased by 70%

Footwear & Apparel

1.5 years
ROI

Sole materials transfer
Workflow

WS-A500LS
Model

Automated logistics support seamless shopping experience
Top domestic e-commerce warehousing in China

稳石机器人
Robotics α

Needs

1. Meet the demand for order shipments during the promotional season;
2. Increase production capacity and efficiency;
3. Reduce errors caused by human factors.

Current situation

1. Numerous production processes and transfer points;
2. Operating in the same area with forklifts and other equipment involved; Disorganized stacking of goods during peak periods.

Solution

Zone-based Relay Solutions Solve Large-scale Problems, Interactive AMR Enhances Order Picking Experience

Hardware | Customized Pick-and-Place AMR with Lifting Capability

Software | Distributed Cluster Scheduling System + Material Management Platform + Customized Vehicle-mounted Interactive Software

Performance Value

- AMR with clearly defined tasks, improves work efficiency by 50%

- Zone relay, intelligently connected to WMS, achieves 3000-5000㎡ per person zone picking, with AMRs autonomously conducting order relays through efficient scheduling

E-commerce

2 years
ROI

Multi-point order picking
Workflow

WS- A300BSE
Model

Steadily leading a breakthrough in transport capacity

Roboticsalpha's product line covers a variety of autonomous mobile robots for different application scenarios, providing comprehensive solutions that meet customer needs in logistics, warehousing, and manufacturing.

Autonomous Mobile Robots (AMR), automated forklifts, composite robots, and four-way shuttle vehicles all possess advanced technology and intelligent systems, to improve work efficiency and precision, enhancing companies' productivity and competitiveness.

- Amber | AMR
- Solidrock | Automated Forklift
- Sparkle | Composite Robot
- Vision | Stacker robot
- Cyber | Software

Stable & Smooth Operation

Capable in complex Scenarios

Rich open API

Safe & reliable design
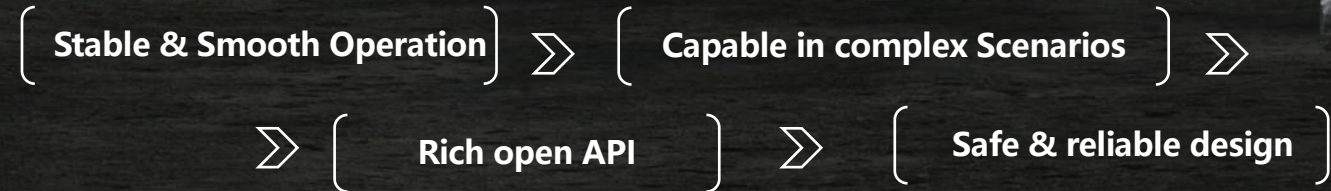
AMR

Amber Series

Autonomous navigation, flexible obstacle avoidance, and modular design achieve high-precision docking in multiple transportation scenarios and safe and reliable operation.

Enables autonomous material transfer, flexibly applicable to a variety of transportation scenarios, significantly improving efficiency, and reducing manpower.

Top Modules

Cart Lifts

Pallet Lifts

Roller Conveyor

Order Picking

Parameters

Model	WS-A300BSE	WS-A500LS	WS-A600XH WS-A1000XH	WS-A1200LS
Size(L*W*H)	885×586×316mm	1150×650×320mm	940×650×250mm 1150 ×820 ×250mm	1356×1002×329mm
Payload	300kg	500kg	600kg / 1000kg	1200kg
Lift Height	/	55mm	60mm	55mm
Speed	1.2m/s	1.2m/s	1.5m/s	1.2m/s
Turning radius	531mm	680mm	497.5mm / 595mm	845mm
Straight passage	890mm	950mm	1050mm / 1240mm	1310mm
U-turn passage	1565mm	1860mm	1050mm / 1240mm	2200mm
Second positioning accuracy	±10mm/±3°	±10mm/±3°	±10mm/±1°	±10mm/±3°
Safety protection	safety PLC kit	Radar, stereo camera	Laser obstacle avoidance, 360° anti-collision strip	safety PLC kit
Driving slope	8%	8%	5%	5%
Step height	10mm	10mm	5mm	10mm
Gap width	30mm	30mm	30mm	30mm
Charging time	2h	2h	1.5h/2h	2h
Drive mode	two-wheeled differential drive method	two-wheeled differential drive method	two-wheeled differential drive method	two-wheeled differential drive method
IP rating	IP21	IP21	IP21	IP21
Navigation mode	Autonomous navigation based on LiDAR	Autonomous navigation based on LiDAR	QR code and SLAM	Autonomous navigation based on LiDAR
Certification	CE	/	/	CE

Automated Forklift
Solidrock Series

Solve complex scenarios with heavy loads, achieving autonomous obstacle avoidance, multi-layer stacking, and significant renovation and labor cost reduction.

稳石机器人
Robotics α

Parameters Model	WS-T1500BS automated pallet truck	WS-L1400BS automated pallet sacker	WS-E2000BH automated counterbalance forklift	WS-L1600FH reach truck forklift
Size(L*W*H)	1590×850×1800mm	1630×900×2400mm	2877×1209×2045mm	2510×1450×2300mm
Maximum lifting height of the forks	120mm	3500mm	3000mm	9455mm
Speed	1m/s	1m/s	1.5m/s	1.5m/s
Turning radius	1335mm	1085mm	1730mm	1640mm
Right-angle stacking aisle	2150mm	2100mm	3250mm	2785mm
Navigation mode	SLAM	SLAM	3D-SLAM+RTK	SLAM
Positioning accuracy	±10mm/±3°	±10mm/±3°	indoor：±10mm/±3° outdoor：±20mm/±3°	±10mm/±3°
Driving slope	full load 3%，no load 6%	5%	5%	5%
Battery	48V/30Ah	24V/200Ah	24V/230Ah	24V/230Ah
Battery life	6-8h	8h	8h	8h
Safety protection	3 LiDAR sensors + collision prevention strips + fork tip sensors			
Gap width	30mm			
Step height	10mm			
IP rating	IP21			
Camera	Depth camera + pallet recognition camera			
Charging mode	Auto charging/Manual charging			
Audio and visual alerts	Standard configuration			
Temp.& Humidity	5~40℃，10~95RH%			

Composite Robot
Sparkle Series

Integrating advanced artificial intelligence technologies, machine vision systems, perception and control systems, etc., achieves autonomous navigation, environmental perception, and intelligent decision-making. They can realize flexible task planning and execution through programming and algorithms.
They play an important role in industrial production, intelligent inspection, warehousing, and logistics, enhancing production efficiency, reducing costs, and minimizing human labor input.

稳石机器人
Roboticsα

Model：WS-X200BHC

» **Precise docking**

Through vision and the recognition algorithm and motion control of the collaborative arm, it achieves the transfer and manipulation of items on the workbench.

» **Rich combination**

Equipped with a 6-axis collaborative robot arm, fitted with various types of end effectors such as clamps, suction cups, etc.

Parameters

Size(L*W*H)	820×560×1200mm
Navigation mode	LiDAR + Vision
Chassis positioning accuracy	±10mm
Chassis positioning angular accuracy	±1°
Mechanical arm end effector repeat positioning accuracy	±0.03mm
Mechanical arm payload	5KGS/10KGS
Degrees of freedom of the mechanical arm	6
Mechanical arm reach	700mm/860mm

Electric gripper	Multiple models available
Turning radius	500mm
Maximum travel speed of the chassis	1.2m/s
Charging mode	auto/manual/replace battery
Battery life	≥8h
Charging time	≤2h
Ambient temp.	5~40℃
IP rating	IP21

Parameters

Size	750×460×690mm
Navigation mode	Multi-line LiDAR
Navigation positioning accuracy	±20mm
Navigation angular accuracy	±3°
Motion mode	Four-wheel eight-drive
Obstacle avoidance	50mm
Waterproof Depth	200mm
Ambient temp.	-20°C ~60°C
IP rating	Max IP65（optional）
Visible light camera	Supports AI image recognition
Infrared camera	Supports infrared data analysis
Others	Supports two-way voice communication, gas and noise detection

Model：WS-XT7E

» **Wheeled robot**

The product features four-wheel eight-drive walking characteristics, capable of performing inspection tasks in outdoor scenarios. It can complete equipment checks, diagnostics, and fault pre-warning work unattended.

Size	350×250×400mm
Navigation	rail-mounted navigation
Navigation positioning accuracy	±5mm
Motion mode	track walking
Visible light camera	Supports AI image recognition
Infrared camera	Supports infrared data analysis
Ambient temp.	-20°C ~60°C
Charging mode	auto/manual charging
Others	Supports two-way voice communication, gas and noise detection

Model：WS-XT3F

» **Rail-mounted robot**

Boasts the smallest size in the industry, capable of performing inspection tasks in confined spaces. Achieves a closed-loop system for inspection operation and maintenance control that includes all-weather data collection, information transmission, and intelligent analysis and early warning.

Warehouse Storage Robot

Vision Series

Applied in scenarios with a large number of SKUs, dense storage, and personalized customization, enabling storage and picking at any location within the three-dimensional shelving.

Model：WS-F200B

》 Cost reduction

Switching between different levels of height in a multi-level warehouse to retrieve and store goods, thereby achieving the goal of reducing operational costs and improving warehouse efficiency.

Parameters

Item	Light-duty lift
Max payload	200kg
Lifting speed	3-6m/s(adjustable)
Positioning accuracy	±1mm
Positioning mode	photoelectric sensor + encoder
Max lift height	customized as required
Min lift height	450mm
Transmission method	synchronous wheel synchronous belt

Parameters

Size	980×1136×124.8mm
Pallet sizes	1200×1000 / 1200×1200mm
Payload	1600kg
Lift height	40mm
Main aisle direction (wheelbase)	875mm
Sub-aisle direction (wheelbase)	705mm
Rated speed	1.5m/s(no load); 1.2m/s(full load)
Direction-changing lifting time	2.5s
Battery life	8~10h
Ambient temp.	-25~45°C
Communication mode	WiFi/5G
Positioning mode	encoder + photoelectric sensor

Model：WS-M1600BM

》 Four-way shuttle vehicle (pallet level)

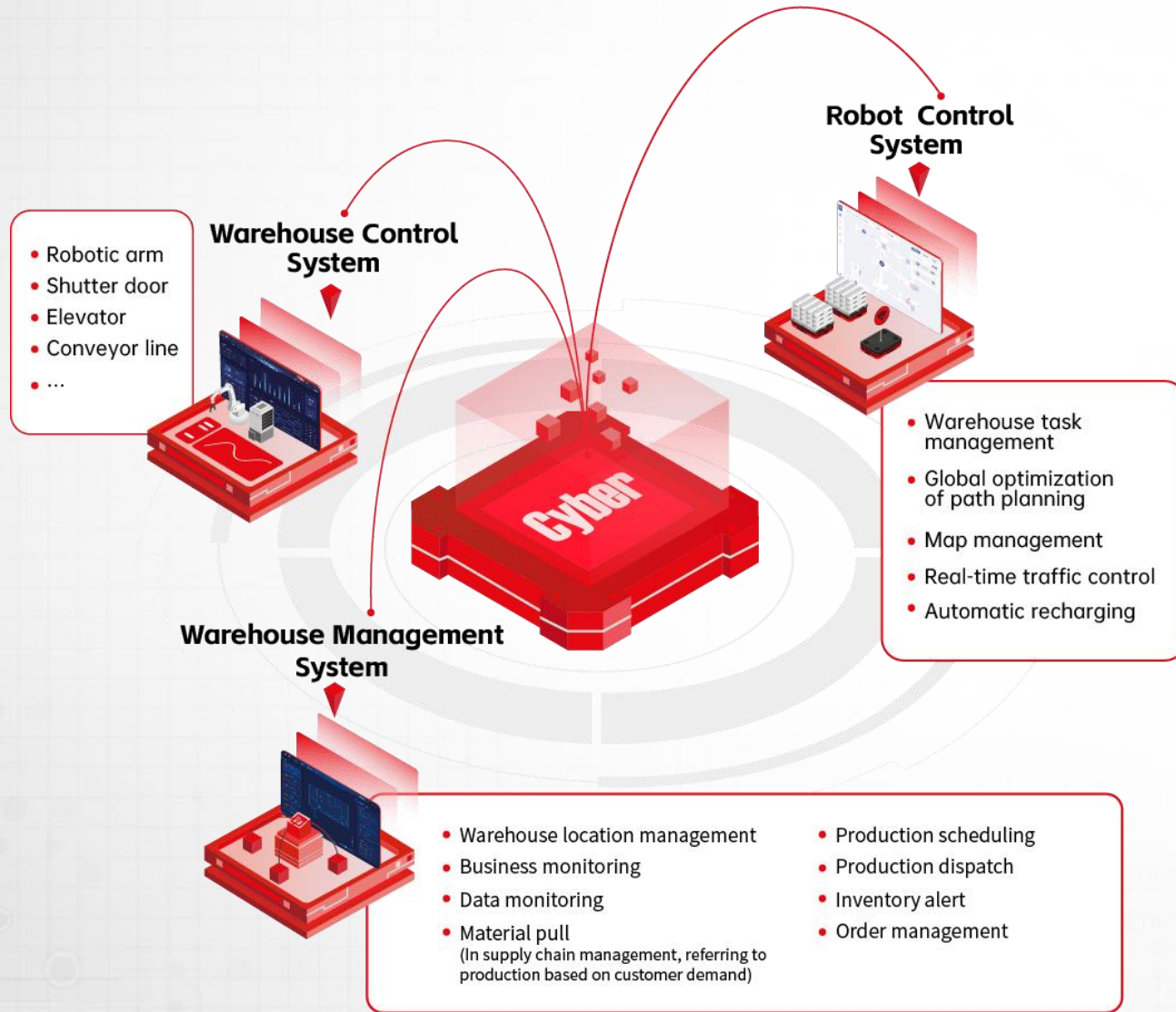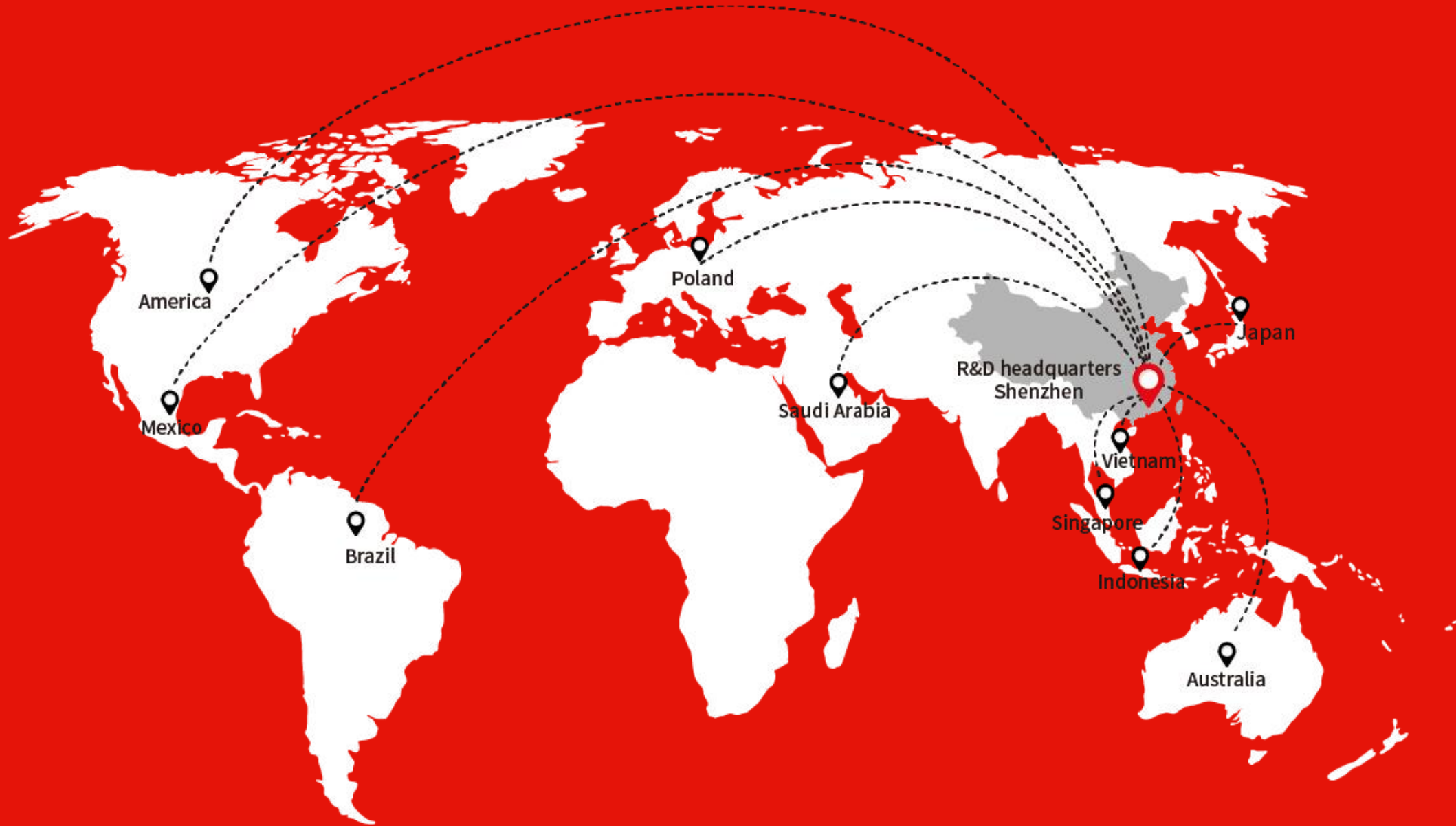| Size	1060x718x339/1200x1000x350mm
Bin size	250x250x200 / 640x400x280mm
Payload	30kg / 50kg
Self-weight	120kgs
Positioning accuracy	±1mm
Positioning mode	photoelectric sensors
Types of fork	single deep/double deep/adjustable distance
Running speed	vertically 5.5m/s, horizontally 2m/s
Ambient temp.	0~45°C

Model：WS-M50BM

》 Four-way shuttle vehicle (bin level)

Software
Cyber Series

RoboticsAlpha's Central Digital Management Platform composed of Warehouse Management System (WMS), Robot Control System (RCS), and Warehouse Control System (WCS)

Robot Control System

Warehouse Control System

- Robotic arm
- Shutter door
- Elevator
- Conveyor line
- …

- Warehouse task management
- Global optimization of path planning
- Map management
- Real-time traffic control
- Automatic recharging

Warehouse Management System

- Warehouse location management
- Business monitoring
- Data monitoring
- Material pull
  (In supply chain management, referring to production based on customer demand)

- Production scheduling
- Production dispatch
- Inventory alert
- Order management

Global Sales Supporting Network

America

Mexico

Poland

Saudi Arabia

R&D headquarters
Shenzhen

Japan

Vietnam

Singapore

Indonesia

Brazil

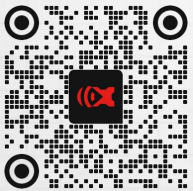Australia

稳石机器人
Robotics α

稳石机器人
Robotics α

Address

101, Building 5, Fuqiao 4th Zone, Qiaotou Community, Fuhai Sub-district, Baoan District, Shenzhen City

Contact us

Tel: 0755-23306707

Email: sales@roboticsalpha.com

www.RoboticsAlpha.com