PRESSNET

ZIKOO ROBOTICS

Pallet-Storage Robotics Pioneer

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Product Catalog | **www.zikooint.com**



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Core Products



PTP Smart Warehouse Software WMS | RMS (Basic Edition / Standard Edition / Professional Edition)

R-bot 4-Way Pallet Shuttle

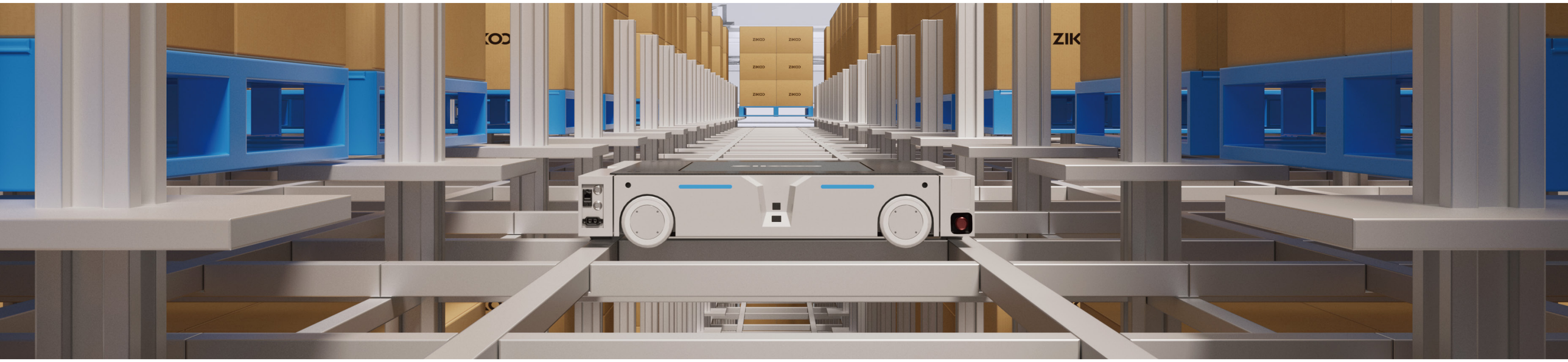
R-bot 4-way pallet shuttle is an intelligent warehousing robot suitable for “pallet to person” dense storage scenarios, with four-way flexible traveling, intelligent autonomous handling, multi-shuttle collaborative operation and other advantageous features, and H-bot 2-way vertical shuttle and other equipment linkage, flexible adaptation to various industries, pallet goods storage and picking scenarios.

125mm
Thickness

1500kg
Rated load

2.5m/s
Maximum speed

1.5s
Reversing time



Technological Innovation

Fully mechanical structure
Full gearbox mechanical transmission, long life and maintenance-free
Thickness of the body is only 125mm, carrying 1500kg

Maximum speed
Empty load speed 2.5m/s,
full load speed 1.8m/s
Lifting time 1.5s

Scene adaptation
Cover -25℃~45℃ temperature environment
Suitable for various pallet sizes，customizable

Network stability
High performance wifi6 for fastest roaming switching

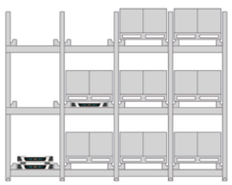
Core brain
Fully self-developed IP67 rated industrial controllers
Higher computing power and faster response speed

Accurate positioning
Positioning accuracy ±1mm, support different size pallets mixing storage in the pallet lane
RFID + magnetic induction + encoder positioning, high robustness

Reliable energy
Double BMS intelligent charging protection, energy security
Extra large battery capacity, 10h long duration time

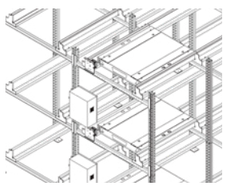
Safety protection
Ultra-long distance laser obstacle avoidance, STO function in power system
Single 64-point pallet skew detection, tilt angle detection to prevent derailment

Functional modules



- **10-minutes emergency rescue**

With specialized rescue tooling, a malfunctioning shuttle can be lifted, removed from the storage rack and transported to a repair facility by coordinating with other shuttles. This process is both streamlined and efficient, enabling the rapid completion of rescue operations in just 10 minutes. The modular design enables rapid fault diagnosis within 5 minutes. With readily available spare parts, damaged components can be replaced in 20 to 60 minutes, allowing the shuttle to return to service promptly.



- **Safe charging stations**

The charging stations feature a connector designed for over 100,000 plug-in cycles, ensuring safety, stability and reliability. The independently developed charging strategy accommodates a wide range of temperatures, from -25°C to 45°C, enhancing charging safety. Real-time monitoring capabilities cover the status of the charging stations, and include protective measures against short circuits, overload, overheating, overvoltage and overcurrent.

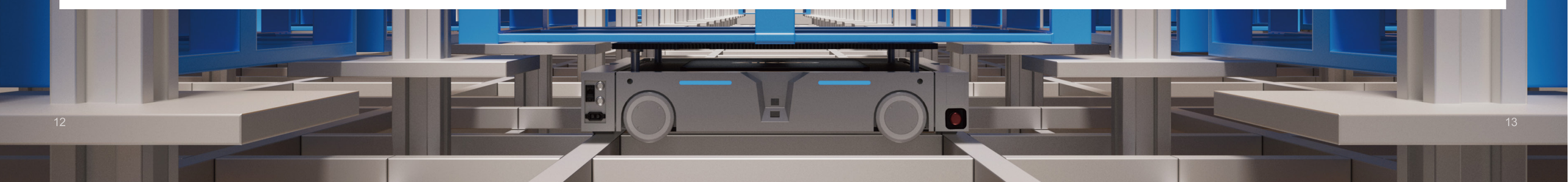


- **Remote control**

Operating independently of WiFi networks, our remote control uses a long-distance communication solution that ensures extended transmission ranges and improved penetration within storage racks.
It features a status display and a user-friendly interface for easier interaction. The remote control system can connect to multiple devices and only requires one unit per warehouse to manage them all.

R-bot 4-way Pallet Shuttle product parameters

Type	Item	Unit	R1000MH	R1500MH	R2000LH	R1500MF	R1000MA	R1000LA	R1500MA	R1500LA
Parameters	Weight	Kg	260	260	360	260	275	285	315	325
	Rated load	Kg	1000	1500	2000	1500	1000	1000	1500	1500
	Body dimensions	mm	L1005*W900*H125	L1005*W900*H125	L1200*W972*H150	L1000*W900*H152	L960*W760*H152	L960*W960*H152	L960*W760*H178	L960*W960*H178
	Applicable pallet sizes	mm	1100~1400*800~1200	1100~1400*800~1200	1200~1600*1000~1400	1100~1400*800~1200	1200*1000	1200*1200	1200*1000	1200*1200
Performance Indicators	Navigation	-	RFID + Magnetic Induction + Encoder	RFID + Magnetic Induction + Encoder	RFID + Magnetic Induction + Encoder	RFID + Magnetic Induction + Encoder	RFID + Magnetic Induction + Encoder	RFID + Magnetic Induction + Encoder	RFID + Magnetic Induction + Encoder	RFID + Magnetic Induction + Encoder
	Positioning accuracy	mm	±1	±1	±1	±1	±1	±1	±1	±1
	Travel Aisle No/ Full-Load Speed	m/s	2.5/1.8	2.5/1.8	1.4/1.1	2.5/1.8	2.5/1.8	2.5/1.8	2.5/1.8	2.5/1.8
	Pallet Lane No/ Full-Load Speed	m/s	2.0/1.5	2.0/1.5	1.4/1.1	2.5/1.8	2.5/1.8	2.5/1.8	2.5/1.8	2.5/1.8
	No/Full-Load Maximum Acceleration	m/s^2	2/0.3	2/0.3	1.5/0.3	2/0.3	2/0.3	2/0.3	2/0.3	2/0.3
	No/Full-Load Reversing Time	s	1.5/2.5	1.5/2.5	1.8/3	1.5/2.5	1.5/2.5	1.5/2.5	1.5/2.5	1.5/2.5
	Lifting time	s	1.5	1.5	2	1.5	1.5	1.5	1.5	1.5
Battery Indicator	Applicable temperature	℃	-15~45 / -25~0	-15~45 / -25~0	-15~45 / -25~0	-15~45 / -25~0	-15~45 / -25~0	-15~45 / -25~0	-15~45 / -25~0	-15~45 / -25~0
	Battery capacity	V/Ah	51.2V/30Ah / 51.2V/30Ah	51.2V/30Ah / 51.2V/30Ah	51.2V/40Ah / 51.2V/30Ah	51.2V/30Ah / 51.2V/30Ah	51.2V/30Ah / 51.2V/30Ah	51.2V/30Ah / 51.2V/30Ah	51.2V/30Ah / 51.2V/30Ah	51.2V/30Ah / 51.2V/30Ah
	Duration at full charge	h	8-10 / 6-8	8-10 / 6-8	8-10 / 6-8	8-10 / 6-8	8-10 / 6-8	8-10 / 6-8	8-10 / 6-8	8-10 / 6-8
	Fully charging time	h	1.2 / 2.5	1.2 / 2.5	1.2 / 2.5	1.2 / 2.5	1.2 / 2.5	1.2 / 2.5	1.2 / 2.5	1.2 / 2.5
	Type of batteries	-	Lithium-iron phosphate battery	Lithium-iron phosphate battery	Lithium-iron phosphate battery	Lithium-iron phosphate battery	Lithium-iron phosphate battery	Lithium-iron phosphate battery	Lithium-iron phosphate battery	Lithium-iron phosphate battery
Product Certification	Certificate type		CE UL	-	CE UL	CE UL	CE UL	CE UL	CE UL	CE UL



H-bot 2-way Vertical Shuttle

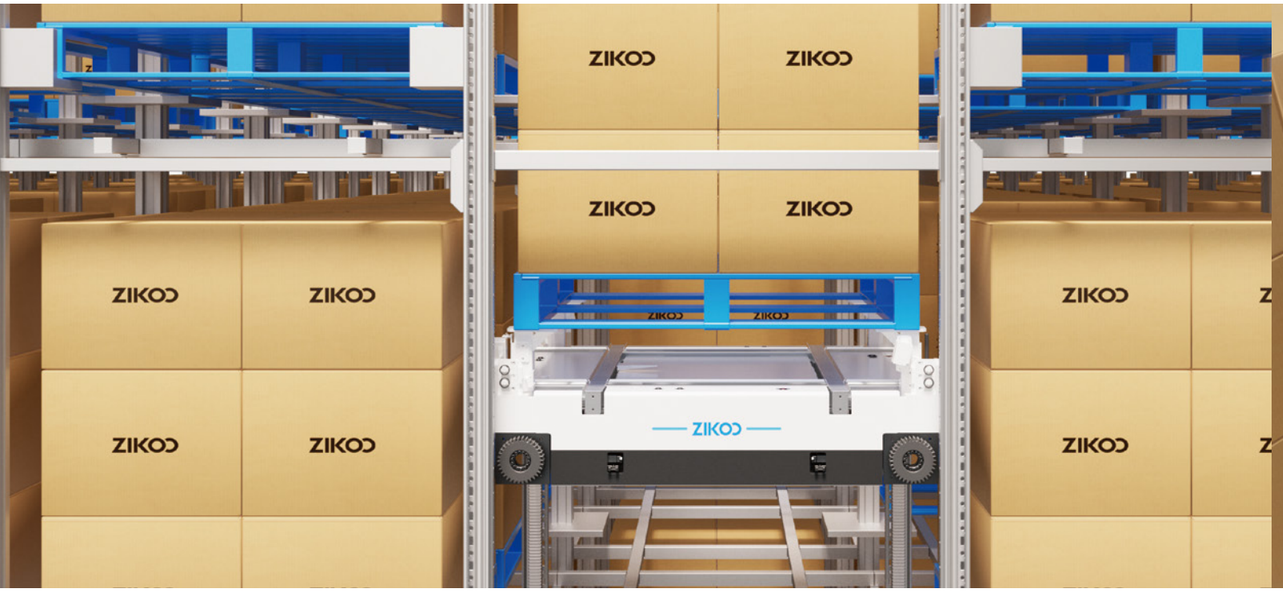
H-bot 2-way vertical shuttle is an intelligent warehousing robot designed for “pallet to person” dense storage, storage-picking scenario, with vertical lift, flexible layout, fast delivery and other advantages, and R-bot 4-way Pallet Shuttle seamless synergy, to realize the space of 6-way pallet shuttle driving. It replaces the traditional elevator and conveyor line in the elevator, and is a comprehensive upgrade product for space utilization and cost reduction.

1800kg
Rated load

-25℃~45℃
Applicable temperature

1m/s
Max lifting speed

±1mm
Positioning accuracy





Technological Innovation

Streamlined design
Platform and modular design for high reliability

Extreme speed
Empty load speed 1m/s, full load speed 0.5m/s
Empty load acceleration 1m/s², fullHoad acceleration 0.3m/s²

Accurate positioning
Rack and pinion drive, positioning accuracy ±1mm

Safety Protection
Multi-protection, electrical interlocks, overrun detection

Scene Adaptation
Covering temperature environments from -25℃ to 45℃, and adapting to a variety of pallet sizes.

Ultimate space
Occupies only 1 cargo space for better space utilization

Flexible Planning
Flexible deployment in any location inside or outside of the warehouse

Fast delivery
Dramatically reduced lead times with standard products delivered as soon as they are installed

Advantage Comparison

2-way Vertical Shuttle VS Elevator	
Advantage 1	Standardized product design, shorten the delivery cycle by more than 80%, delivery cost is greatly reduced.
Advantage 2	The outer frame borrows the rack column piece, the product cost is more than 30% lower than that of the elevator.
Advantage 3	Occupying only one pallet position, reducing the number of occupied spaces by more than 80%.
Advantage 4	It can be deployed either embedded in the warehouse or external inside of warehouse, which makes the program layout more flexible.

H-bot 2-way Vertical Shuttle product parameters

Type	Item	Unit	H1500SH	H1500MH	H1500LH	H2000XH	H1500SF	H1500MF	H1500LF	H1000XA	H1500XA
Parameters	Weight	Kg	470	470	470	490	470	470	470	450	470
	Rated load	Kg	1800	1800	1800	2400	1800	1800	1800	1300	1800
	Body dimensions	mm	L1423*W1090*H425	L1423*W1290*H425	L1323*W1190*H425	Customization	L1423*W1090*H450	L1423*W1290*H450	L1323*W1190*H450	L1472*W1471*H288	L1472*W1471*H288
	Applicable pallet	mm	1200*800~1000	1200*1000~1200	1100*1000~1100	Customization	1200*800~1000	1200*1000~1200	1100*1000~1100	1200*1000~1200	1200*1000~1200
	Applicable temperature	°C	-15~45 -25~0	-15~45 -25~0	-15~45 -25~0	-15~45 -25~0	-15~45 -25~0	-15~45 -25~0	-15~45 -25~0	-15~45 -25~0	-15~45 -25~0
Performance Indicators	Positioning accuracy	mm	±1	±1	±1	±1	±1	±1	±1	±1	±1
	Empty/full load speed	m/s	1/0.5	1/0.5	1/0.5	0.8/0.4	1/0.5	1/0.5	1/0.5	1/0.5	1/0.5
	Acceleration	m/s^2	1/0.3	1/0.3	1/0.3	1/0.3	1/0.3	1/0.3	1/0.3	1/0.3	1/0.3
Battery Indicator	Total power	KW	16	16	16	17.6	16	16	16	16	16
	Control mode	-	Servo	Servo	Servo	Servo	Servo	Servo	Servo	Servo	Servo
	Transmission mode	-	rack and pinion	rack and pinion	rack and pinion	rack and pinion	rack and pinion	rack and pinion	rack and pinion	rack and pinion	rack and pinion
Product Certification	Certificate type	-	CE UL	CE UL	CE UL	CE UL	CE UL	CE UL	CE UL	CE UL	CE UL



U-bot Omnidirectional Stacker Robot

The U-bot Omnidirectional Stacker Robot is an intelligent warehousing robot designed for "pallet-to-person" narrow aisle storage scenarios. It offers a multitude of benefits, including the ability to maneuver around narrow aisles, precise positioning, flexible deployment and adaptable functionality, thus fully addressing complex storage needs across various industries. By working in conjunction with AMR, robotic arms and other devices, it can effortlessly handle sorting, picking, and inbound and outbound operations.

0-8 m
Lifting height

1000kg
Rated load

2100 mm
Minimum aisle width

1370 mm
Minimum turning radius



Technological Innovation

New design
The enclosed U-shaped body prevents cargo from tipping, falling or sliding off

Omnidirectional maneuvers
A new "dual steering wheel" chassis is used for enhanced speed and maneuver stability

Accurate positioning
Dual-laser SLAM navigation, optional reflector and QR code are integrated for accurate positioning

Ultimate lifting capabilities
High quality steel gantry with an adjustable lifting height from 0m to 8m, ensuring no load loss up to 6m

Smart recognition
A 3D camera is used to ensure the smart recognition and automatic correction of a pallet's position

Forward mechanism
Rack and pinion forward gantry increase the forward movement speed by 100%

Advantage Comparison

	Manual + forklift	Counterbalanced stacker AGV	U-bot Omnidirectional Stacker Robot
Maneuver mode	Manual maneuvers, featuring a large turning radius	Two-way maneuvers, featuring a large turning radius	360-degree omnidirectional maneuvers On-the-spot maneuvers, featuring a small turning radius
Storage density	Aisle width≥3.2m Low storage density	Aisle width≥3.2m Relatively low storage density	Aisle width≥2.1m High storage density
Comprehensive efficiency	High efficiency	Low efficiency	High efficiency Increase by more than 40%
Safety	Low	Average	High

U-bot omnidirectional stacker robot product parameters

Type	Item	Unit	U1045	U1060	U1080
Parameters	Dimensions	mm	2198*1784*2100	2198*1820*2685	2198*1820*3465
	Rated load	Kg	1000	1000	1000
	Weight	Kg	3000	3300	3600
	Lifting height	mm	4500	6000	8000
	Applicable pallet sizes	mm	1000-1200*800-1200	1000-1200*800-1200	1000-1200*800-1200
Performance Indicators	Maximum speed	m/s	1.5	1.5	1.5
	Minimum turning radius	mm	1370	1370	1370
	Minimum aisle width	mm	2100	2140	2140
	Navigation	-	Dual-laser and SLAM hybrid navigation	Dual-laser and SLAM hybrid navigation	Dual-laser and SLAM hybrid navigation
	Operational positioning accuracy	mm	±10	±10	±10
	Lifting speed (empty/full load)	m/s	0.25/0.2	0.25/0.15	0.25/0.15
	Descending speed (empty/full load)	m/s	0.2/0.2	0.2/0.2	0.2/0.2
	Maximum forward speed	m/s	0.3	0.2	0.2
Battery Indicators	Applicable temperature	℃	-10~45	-10~45	-10~45
	Battery capacity	V/Ah	51.2V/210Ah	51.2V/210Ah	51.2V/210Ah
	Duration time	h	8~10	8~10	8~10
	Charging time	h	2~3	2~3	2~3
	Battery indicator	-	Lithium-iron phosphate battery	Lithium-iron phosphate battery	Lithium-iron phosphate battery
Product Certification	Certificate type	-	CE	CE	CE





PTP Smart Warehouse Software

PTP (Pallet-To-Person) Smart Warehouse Software is a core control platform designed for smart warehouse scenarios. It integrates the WMS Smart Warehouse Management System, RMS Smart Robot Management System (Basic Edition / Standard Edition / Professional Edition), and Data and Simulation Platform to build a unified, collaborative, and flexible smart warehouse architecture. This enables warehouse operations to fully embrace the new era of intelligence and automation.

WMS

AI Order Forecast | AI Storage Diagnostics | AI Operational Decision

Receipt Management | Storage Management | Inventory Management | Reporting Management

Business Layer API | Execution Layer API | Scheduling Layer API

RMS

AI Storage Location Allocation | AI Dynamic Tallying | AI Equipment Maintenance

Task Management | Route Planning | Intelligent Scheduling | Intelligent Charging

Simulation System

Efficiency Simulation

Algorithm Validation

Performance Prediction

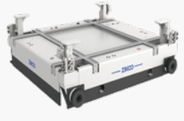
Intelligent Warehouse Robots

R-bot 4-way Pallet Shuttle



· Full gearbox and mechanical transmission ensures long life and maintenance-free operation
· Self-developed IP67 industrial controller offers reliable protection and easy scalability
· Fusion positioning using RFID, magnetic induction, and odometers ensures precise positioning and strong anti-interference capabilities
· Omnidirectional obstacle avoidance and pallet tilt detection, safety protection and high robustness

H-bot 2-way Vertical Shuttle



· Replaces traditional lifter; standardized products are ready for delivery upon installation
· Gear-rack mechanical drive ensures precise positioning and multiple layers of protection
· Occupies only one storage location, allowing flexible deployment at any location in front of or inside the warehouse

Multifunctional Workstation



· Adaptable to various operational scenarios, with flexible deployment at any location on a single level
· Supports multiple operating modes, including full-pallet outbound and piece-picking
· Compatible with various integration methods, including AGVs/AMRs and manual forklifts

Implementation System

Map Management

Workflow Orchestration

Equipment Management

Core Advantages

Standard Interfaces

The PTP software uses standard interfaces compatible with ERP, MES, SAP and other systems, supporting a variety of automated equipment for stereoscopic warehouses, such as palletizing/de-palletizing robots, robotic arm and AGVs. This integration facilitates data interoperability and enhances operational efficiency.

System Coupling

The PTP Smart Warehouse Software offers multiple integration methods, catering to customer needs through black-box, gray-box and white-box modes. The system can be deployed either independently or in combination to suit various business scenarios.

Smart Algorithms

Our software is equipped with a sophisticated suite of smart algorithms, including those for task distribution, optimum routing and smart charging. It also features business algorithms designed for storage strategy, wave picking strategy, sorting strategy and platform strategy, all aimed at continuously boosting operational efficiency.

Swift deployment

By entering a customer's specific scenario requirements into our simulation system and running tests with simulated robots, we can collect data and validate the warehousing solution in advance. This process enables customers to identify the most efficient warehouse design and achieve quick deployment capabilities.



Smart Warehouse Management System

WMS

Empowers intelligent warehouse material management systems across procurement, production, and sales scenarios. Supports multi-warehouse management, enabling order management, basic data management, dock scheduling, and inventory views. The system offers excellent scalability and flexibility, capable of integrating functions across industries to accommodate diverse requirements. Additionally, WMS provides rich statistical data and BI modules to assist warehouses in making rapid decisions, achieving precise management, and enhancing overall operational efficiency.



Smart Robot Management System

RMS

Basic Edition

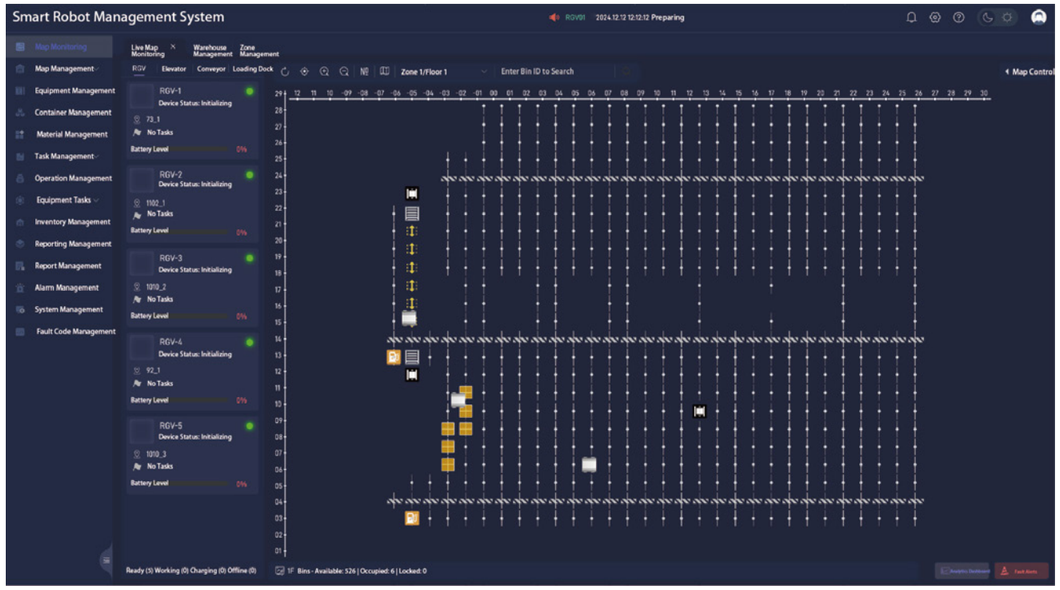
Basic Edition RMS Integrated with the next-generation Smart Robot Control System (RCS), it supports efficient collaborative operations among multiple robots. The system performs collision detection based on spatial models, enabling functions such as vehicle following, obstacle avoidance, congestion detection, and deadlock avoidance. It also uses time window heatmap algorithms to reduce the number of avoidance maneuvers and plan optimal paths. It supports intelligent charging scheduling to ensure continuous and stable operation of equipment.

Standard Edition

Standard Edition RMS Integrates the functions of the Smart Robot Control System (RCS) and the Smart Warehouse Control System (WCS) to build a unified dispatching center. The system supports the global collaborative operation of various types of equipment such as RGVs, elevators, and conveyor lines, and realizes dynamic path optimization, intelligent obstacle avoidance, and charging dispatching through time window algorithms and heat map mechanisms. Combining device status and task priority, it achieves intelligent resource allocation and efficient scheduling, significantly enhancing warehouse operation efficiency and system stability.

Professional Edition

Professional Edition RMS Deeply integrates the three core systems—the Smart Warehouse Execution System (WES), the Smart Warehouse Control System (WCS), and the Smart Robot Control System (RCS)—to create a unified intelligent warehouse equipment management platform. The system adopts a modular architecture and open interface design, supporting seamless integration with various types of robots and warehousing equipment to achieve full process automation from order processing and task decomposition to multi-device collaborative operations. Relying on intelligent algorithms, the platform optimizes storage strategies, path planning, and conflict management, and uniformly dispatches key equipment such as RGVs, conveyor lines, and elevators to achieve an optimal balance between efficiency, stability, and safety, comprehensively improving the level of warehousing automation and overall operational efficiency.





PTP System 1

AI Warehouse Storage & Picking System

The AI Warehouse is an integrated pallet storage and picking solution based on the deep integration of AI and robotics. By deeply embedding AI Agent capabilities into WMS and RMS systems, and utilizing 6-way pallet shuttle as the core smart warehouse robots, it enables fully automated operations across the entire process—from inbound and storage to picking and outbound. The solution offers core advantages such as high density, high efficiency, high intelligence, and low cost. It dynamically optimizes storage locations allocation and operational efficiency, fully meeting the needs of clients across various industries for flexible warehouse upgrades and efficient operations.

Application scenarios: Warehouse Net Height ≤ 30m Number of SKUs: Unlimited Storage Density: High

Inbound and Outbound Efficiency: High Picking Efficiency: High

Applicable industries: 3PL, manufacturing,retail, shoes and clothing , supermarkets, e-commerce, food, etc.

R-bot
4-way Pallet Shuttle

+

H-bot
2-way Vertical
Shuttle

+

PTP
Smart Warehouse
Software

+

Multi-Functional
Workstation

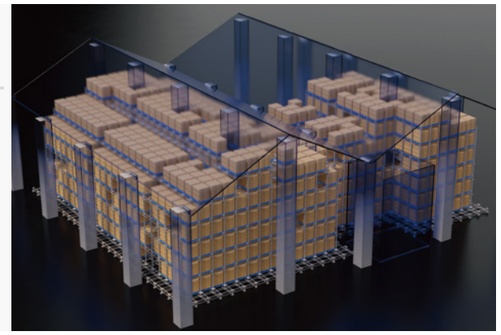
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Pallet Racks

System Advantages

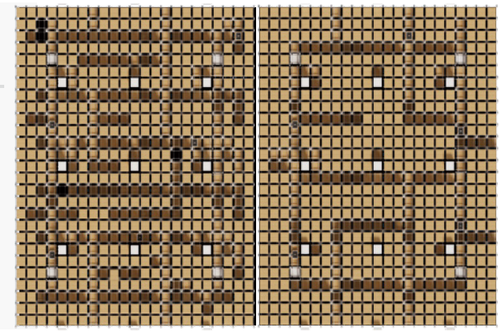
Maximize Space

- Unrestricted by space, it adapts to any warehouse layout and maximizes the use of every inch of space
- Pallets can be placed in any location, truly maximizing storage capacity



Maximize Efficiency

- Shuttle can move to any location, and every movement follows the optimal path
- Inbound station can be set up anywhere on the ground floor, with pallet outbound in just 5 seconds
- The rack rails have been redesigned, enabling a travel speed of 2.5 m/s in any aisle



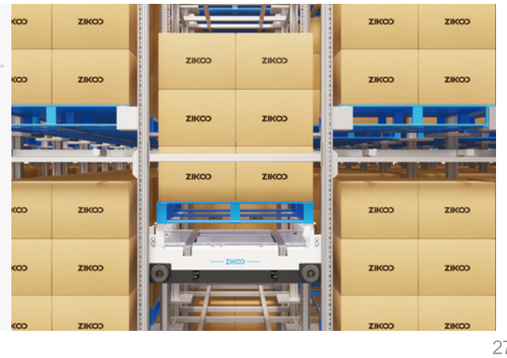
Smarter Decision-Making

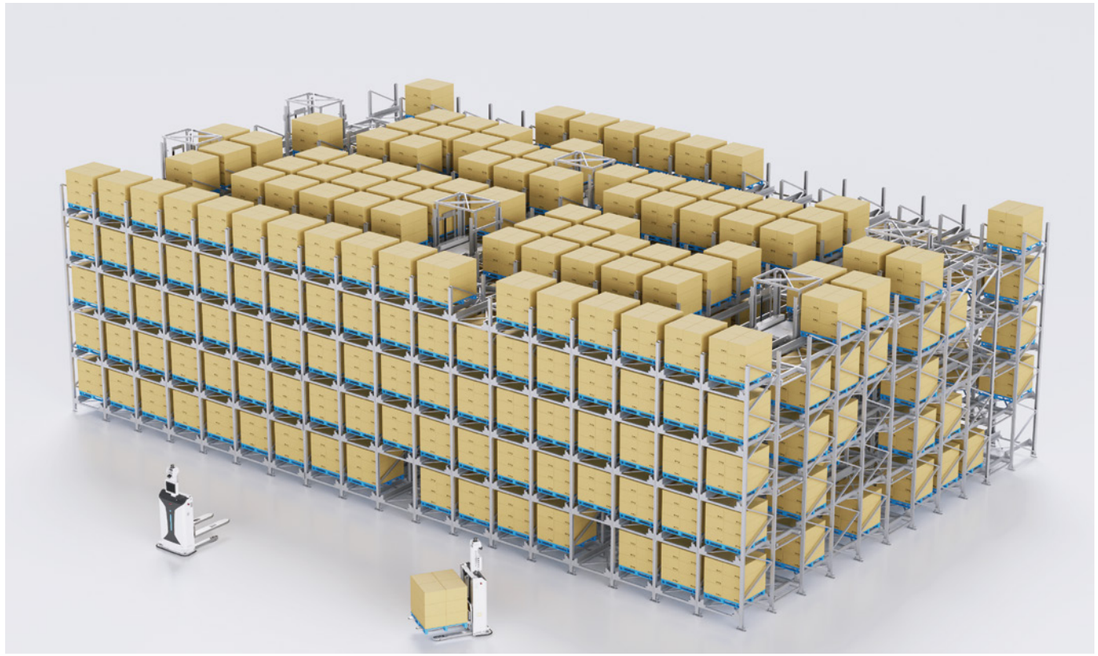
- Smart Storage: Automatically assigns storage locations and aisles based on changes in SKU volume and demand
- Smart Realign: Automatically prepares orders based on order waves and storage situation
- Smart Operations and Maintenance: Predictive maintenance, autonomous monitoring, and anomaly detection



Lowest Cost

- With increased density and efficiency, the cost of equipment and facilities per storage location is lower
- Standardized products have significantly reduced delivery costs
- Operating, maintenance, and renovation and expansion costs have been significantly reduced





PTP System 2

6-way Pallet Shuttle Dense Storage System

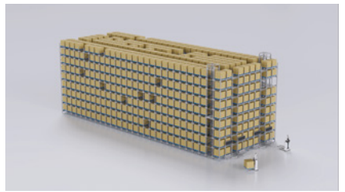
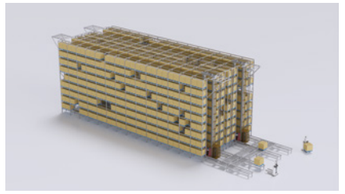
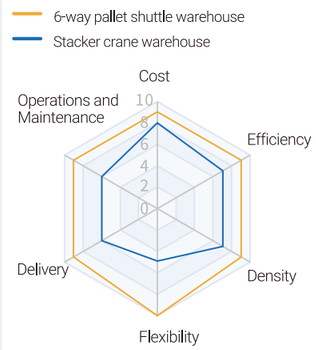
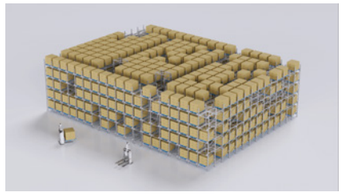
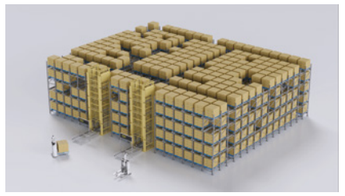
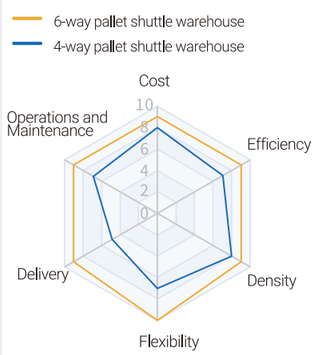
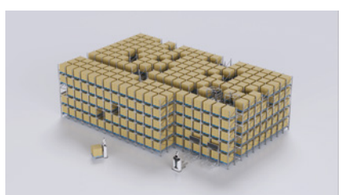
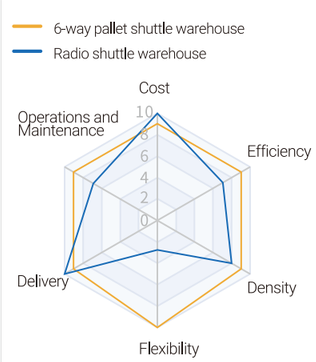
The innovative combination of R-bot 4-way pallet shuttle and H-bot 2-way vertical shuttle is suitable for dense storage scenarios of whole pallet inbound and outbound or a small amount of picking inbound and outbound, with significant advantages in cost, efficiency and density. H-bot can be deployed flexibly at any position inside or outside of the warehouse, with even efficiency configuration, fast delivery and easy maintenance, which is the best choice for customers who are in pursuit of the maximum storage density and inbound and outbound efficiency.

Application scenarios: Warehouse net height ≤ 30m Number of SKUs: Unlimited Storage density: high
Inbound and outbound efficiency: high Picking efficiency: general;

Applicable industries: food, manufacturing, cold chain, energy, chemical industry, building materials, etc.

R-bot 4-way Pallet Shuttle + H-bot 2-way Vertical Shuttle + PTP Smart Warehouse Software + Multi-Functional Workstation + Pallet Racks

Advantages Comparison

	Layout Comparison	Advantages Comparison	
6-way Pallet Shuttle warehouse VS Stacker crane warehouse	 		**Efficiency** Integrated cluster scheduling for greater efficiency and uniformity **Flexibility** According to the site, flexible planning of storage space According to SKU, flexible planning of deep space According to the efficiency, flexible planning cache position **Delivery** Standardized products with significantly reduced delivery costs and lead times
6-way Pallet Shuttle warehouse VS 4-way Pallet Shuttle warehouse	 		**Cost** No elevators, no conveyor lines, lower cost per pallet position. **Density** Full utilization of space in the front area of the warehouse **Delivery** No electrical commissioning, delivery on installation
6-way Pallet Shuttle warehouse VS Radio shuttle warehouse	 		**Efficiency** Integrated cluster scheduling for greater efficiency and uniformity **Flexibility** SKUs can be mixed, FIFO **Operations & Maintenance** Digital management, not dependent on people



PTP System 3

U-bot Narrow Aisle Storage System

The Narrow Aisle Storage System, featuring the U-bot Omnidirectional Stacker Robot, efficiently manages both entire-pallet storage and split-case picking operations. Compared to traditional counterbalanced stacker AGVs, this system boosts efficiency by 30%. Designed to operate in extremely narrow aisles, it is easy to deploy and delivers rapid results. This makes it an ideal solution for customers aiming to upgrade from conventional manual forklift operations to enhance storage density and overall efficiency.

Application scenarios: Warehouse Clear Height: ≤10m; Number of SKUs: Large; Storage Density: Relatively high; Inbound and Outbound Efficiency: Relatively high; Picking Efficiency: Relatively high;

Applicable industries: supermarkets, retail, 3PL, manufacturing, energy, etc.

U-bot Omnidirectional Stacker Robot + PTP Smart Warehouse Software + Multi-Functional Workstation + Pallet Racks



PTP System 4

U-bot + AMR Narrow Aisle Picking System

The Narrow Aisle Picking System, featuring U-bot + AMR , facilitates efficient collaborative operations such as “high-rack storage and low-rack buffering” and “high-rack storage and low-rack picking.” It can be integrated with multi-functional workstations to accommodate the picking and outbound requirements of a wide range of item sizes, from large to small. The system can also connect with production lines via AMR to flexibly adapt to various operational scenarios. The PTP Smart Warehouse Software enables multi-vehicle smart scheduling, significantly enhancing overall efficiency.

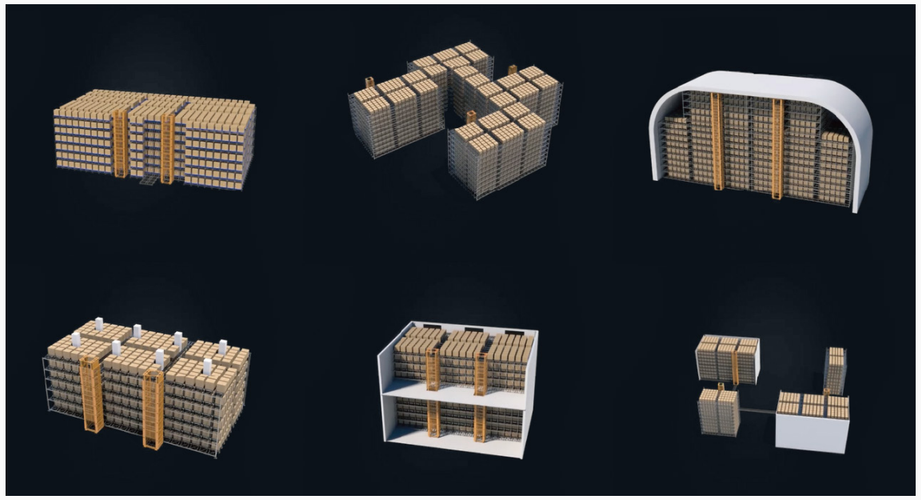
Application scenarios: Warehouse Clear Height: ≤10m; Number of SKUs: Large; Storage Density: Relatively high; Inbound and Outbound Efficiency: High; Picking Efficiency: High

Applicable industries: e-commerce, manufacturing, shoes and clothing, etc.

U-bot Omnidirectional Stacker Robot + AMR Transfer Robot + PTP Smart Warehouse Software + Multi-Functional Workstation + Pallet Racks

Rack

- Independent structural design, tailored for 4-way pallet shuttles maneuverability
- Multiple tests, proven effective across numerous project applications
- Premium materials, superior manufacturing standards and rigorous quality control inspections
- Standardized procedures for rack installation and acceptance



Pallet

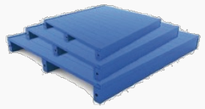
- Customizable pallet sizes with a choice of plastic, steel or wood materials
- Existing pallets can be repurposed, with samples sent to the factory for testing and verification
- Versatile pallet solutions designed to accommodate items of irregular shapes in large, medium and small sizes



Plastic pallet



Wooden pallet



Steel pallet



Single pallet



Pallet storage cage



Pallet rack



Case pallet



Coal Industry-A Coal Group Shenwei Pipeline Transportation Intelligent Material Warehouse in Shanxi

Zikoo Solution

• Upgrading of the spare parts warehouse with two warehouses for small parts and heavy shaped parts, respectively
• 4 sets of 4-way pallet shuttle, 1 set of high-speed elevator, 1 set of stacker crane, AGV, forklift, conveyor line, decoder, etc
• 1 set of WMS、WCS、RCS

Project Achievements

• The system needs to have integrated computer control, network, data communication, automatic identification of material information and other advanced technologies, and all data can be shared to meet the relevant requirements for data access
• The entire material pickup and delivery requirements to achieve the approval of paperless, less manned warehouse, receiving and dispatching operations mechanisation, automation, warehouse management digital, 3D storage unit, information transmission network and security monitoring visualisation











Electric Power industry-A power center warehouse in Anhui

Zikoo Solution

• The stereoscopic warehouse, equipped with a 4-way pallet shuttle system, spans an area of 1,260 square meters. It features 3-layer rack with 1,272 storage locations, 6 four-way shuttles, and 2 elevators. It also includes one set of both WMS and WCS systems
• Various smart logistics robots, a wireless network in the warehouse, a handheld operation APP, and other information systems are used to achieve internal connectivity and communication

Project Achievement

• Establish three different types of warehouses along with one storage system to enable smart “goods-to-person” picking
• The Internet of Things and machine vision technology are used to achieve AI facial recognition, automatic matching, and error reporting
• Information management is achieved by using the WMS system, a handheld operation APP, and a smart large display

Electric Power industry-An Electric Power Material Depot Renovation Project in Jiangsu Yancheng

Zikoo Solution

• Adoption of U-bot narrow aisle storage system, conversion of manual forklift warehouse into stacked height AGV warehouse, 5-level crossbeam racking warehouse with single pallet load of 1000kg
• Deployment of U-bot omni-directional stacking AGV (6 metres), PTP smart warehouse software (WMS, WCS, RCS) set. The original beam shelves are used and rebuilt

Project Achievements

• Beam racks were converted from old to new, and the aisle was changed from 4.1m to 2.1m, which greatly improved the space utilisation.
• After the renovation, the warehouse storage density was increased by more than 50%
• After the transformation, the overall operational efficiency of the warehouse increased by more than 150%

Electric Power industry-An Electric Power Material Depot Renovation Project in Shandong Jinan

Zikoo Solution

• The total area of the warehouse is 8300 square metres, and the warehouse is a two-storey building. The ground floor of the warehouse is planned for U-bot narrow aisle storage system, 432 bays of 4-layer beam shelves, 1 U-bot automatic up and down storage, lifting height 6m, load 1t
• The first floor of the warehouse is planned for U-bot+AMR narrow aisle picking system, 1503 bays of 3-layer beam shelves, deploying 2 sets of U-bot and 2 sets of AMR with lifting height of 4.5m and load of 1t

Project Achievements

• It realises intensive storage and efficient picking of standard pallets. The minimum aisle width of the racks is 2100mm, the U-bot on the first floor of the warehouse is used for handling and loading and unloading pallet materials, and the AMR is used to change the layer of pallet materials between the first floor and the ground floor of the warehouse, and realises the automatic layer changing operation by docking with the freight elevator
• Warehouse storage density increased by 300 %, with an efficiency of 70 pallets/hour in and out of the warehouse

Electric Power industry-An Electric Power Material Depot Renovation Project in Zhejiang Huzhou

Zikoo Solution

• Pallet warehouse warehouse area of 800 square metres, to create a 3-layer U-bot narrow aisle three-dimensional warehouse, a total of 177 warehouse position
• Deployment of U-bot omni-directional stacking AGV (6 metres), PTP smart warehouse software (WMS, WCS, RCS) set. The original beam racks are used and rebuilt

Project Achievements

• The U-bot works in conjunction with other automated equipment to form a high level pallet storage + small parts shelf storage operation mode
• The conversion has resulted in a 150 per cent increase in storage capacity compared to a flat floor stacker
• The operating efficiency of U-bot is 2-2.5min/pallet, which is 50% more efficient in accessing the warehouse compared to manual work





Pharmaceutical industry - A medical Package Material Warehouse In Hebei

Zikoo Solution

• Warehouse area: 300 square meters, 248 storage locations
• 1 set of 6-way pallet shuttle, multi-functional workstation, 1 set of WMS and WCS systems
• Multi-functional workstation integrates control cabinet, barcode scanning, pallet guidance, and shape detection functions
• Comprehensive warehouse goods dimensions: 1200mm x 1100mm x 1200/1500mm (including pallet). The first and second floors store goods up to 1500mm in height, while the top floor stores goods up to 1200mm in height

Project Achievements

• Multi-functional workstations are installed at the warehouse entrance to replace traditional conveying equipment. Compared to traditional 4-way pallet shuttle solutions, the overall cost is reduced by 10%
• Standardized products are delivered upon on-site installation, reducing the overall installation and commissioning time by 25%
• Flexibly add storage locations and six-way shuttle quantities according to changes in production capacity and SKU numbers

Pharmaceutical industry-A Finished Biopharmaceuticals Warehouse in Chongqing

Zikoo Solution

• Warehouse area: 480㎡，3 layers of warehouse，pallet position: 645
• Deployment of 2 sets of 4-way pallet shuttle, 2 sets of high-speed elevator, a number of conveyor lines, a set of software system WCS / RCS
• Pallet size 1200*1000mm, cargo height 1200mm and 1550mm, single pallet load 1.2t

Project Achievements

• Meet the requirements of Good Manufacturing Practice (GMP) and Good Manufacturing Practice (GSP), docking with Fuller's WMS for full-process monitoring of materials
• 3D storage replaces flat storage, increasing storage capacity by more than six times
• Goods to the person picking out of the warehouse, according to the order system execution, the full name of the paperless, the accuracy of the rate to improve
• It meets the requirements of 2℃~8℃ temperature and 35%-75% humidity in the storage environment of biological medicine, and the equipment operates stably

Pharmaceutical industry - A Pharmaceutical Warehouse in Italy

Zikoo Solution

• Warehouse area: 3,350 square meters, 5-layers warehouse, 6,561 storage locations
• 6 four-way shuttle, 11 two-way vertical shuttle, 2 elevators
• One set of WES and WCS software systems

Project Achievements

• The system uses Two-way vertical shuttle to fully utilize the space between the factory's beams, increasing storage capacity by 20% compared to traditional lift-based solutions.
• The factory mezzanine features a two-level 6-way shuttle high-density warehouse that connects directly to the main high-bay warehouse.
• It supports dual-temperature zone storage (cooled and ambient) to meet the storage requirements of different pharmaceuticals.
• The warehouse interfaces with AMRs at the front to enable "goods-to-person" picking operations.

Food industry - A Dairy Products Warehouse in Ningxia

Zikoo Solution

• Warehouse area：4350㎡, pallet position：9760, 4-way pallet shuttle:15, high speed elevator: 5
• Pallet size：1200*1000*150mm Cargo size：1200*1000*2100mm
• WMS、WCS、RCS system: 1 set，as well as a customised automated palletising system, forklift dispatch system, and a set of flat storage management systems

Project Achievements

• Planning of a 4-way pallet shuttle warehouse to achieve intensive storage of materials, and a customised flat warehouse management system for the 3D warehouse field stacking area to achieve unified management of vertical and non-vertical warehouse product inventories
• Installation of manual operation terminals on forklift trucks, intelligent scheduling of forklift operations, and at the same time the transformation of existing production lines, in conjunction with robotic manipulators, to achieve fully automated material grouping plate





Food industry - A Dairy Products Warehouse in Hebei

Zikoo Solution

- Warehouse area: 1400 ㎡, net height: 8.6m, 4 layers warehouse, pallet position: more than 1400
- 4-way shuttle: 8, elevator: 5, 2 sets of shape detection equipment and 4 sets of fixed barcode readers. WMS、WCS、RCS system: 1
- Pallet size: 1500*1200*180mm, load capacity: 1.2t

Project Achievements

- 4-way shuttle 3D storage system, upward expansion of storage space, improve warehouse capacity
- Improvement of the level of service in the provision of materials by achieving an efficiency of 90 pallets/hour in the movement of materials in and out of the warehouse
- Intelligent, less-personalised operations to improve operational accuracy and reduce operator safety risks

Food industry - A Low-Temperature Cold Storage Warehouse in Beijing

Zikoo Solution

- Warehouse area: 2,400 ㎡, storage locations: 4,015
- 5 cold chain 4-way pallet shuttles, 2 elevators, 1 set of WMS and WCS systems
- Warehouse ambient temperature: -20°C

Project Achievements

- Equipped with cold chain-specific 4-way pallet shuttle models capable of stable operation at -20°C
- Real-time monitoring of cold storage operation data, timely response to fault alerts, ensuring long-term stable equipment operation
- For future business expansion and warehouse expansion, 4-way pallet shuttle racks can be directly spliced and combined to connect the warehouse area, and the number of 4-way pallet shuttles can also be increased or decreased to adapt to the efficiency requirements of the warehouse
- If the business expands in the future and upper-level production management systems such as MES, SAP, ERP, or other systems are added, interface docking can be performed

Textile Industry—Automated Storage and Retrieval System (AS/RS) for a Textile Company in Russia

Zikoo Solution

- 4-way Shuttle Warehouse area: 370 m²; total number of usable storage bins: 138
- 2 four-way shuttles, 1 two-way vertical shuttle, 1 WCS system; pallet dimensions: 2000 × 1400 mm; rated load capacity: 1000 kg

Project Achievements

- Standardized six-way shuttle system, ready for delivery upon installation, reducing the delivery cycle by 80%
- Forklifts dock directly at workstations, eliminating the need for lifter and conveyor lines and reducing system costs
- Supports oversized pallets measuring 2 m × 1.4 m, achieving 95% space utilization
- Seamlessly integrates with the existing WMS to enable end-to-end intelligent management

Textile Industry - A Raw Material Warehouse for a Textile Company in Egypt

Zikoo Solution

- Warehouse area: 804 square meters, net height: approximately 6 meters, 3-layers 3D warehouse, 402 storage locations
- 4-way pallet shuttle:2, 2-way vertical shuttle:1，one set of WCS system

Project Achievements

- Steel material cages are used to store fabric rolls, which are structurally stable, suitable for roll-shaped materials, and improve storage safety and load-bearing capacity
- Compared with the traditional 4-way pallet shuttle solution, the cost (hardware + implementation) is reduced by 10%, and the implementation and installation man-days are reduced by 40%
- Equipped with the WCS system, it supports the accurate scheduling and management of multiple batches of fabrics of different sizes, improving overall operational efficiency





Textile Industry - A Raw Material Warehouse of a Textile Company in Shanghai

Zikoo Solution

- Warehouse area: 1,600 square meters, 883 storage locations, over 4,000 SKUs
- Comprehensive warehouse goods dimensions: Length × Width × Height: 1,600 mm × 1,700 mm × 350/650 mm (including material frames)
- 4-way pallet shuttle:4, 2 elevators, and a WCS system
- 3 inbound and outbound stations, each equipped with 1 PDA + large screen TV

Project Achievements

- Pallets are not removed from the racks, and all inbound and outbound ports are used as picking stations
- WCS flexibly allocates elevator inbound and outbound operations, no longer requiring designated elevators for inbound and outbound operations
- Customized material racks use a three-sided enclosure + one-sided opening design, balancing load capacity and ease of manual operation to meet the efficient storage and retrieval needs of different sizes of fabrics

Cold chain industry - A High-Density Frozen Food Warehouse in Japan

Zikoo Solution

- Warehouse area: 325㎡, 4 layers warehouse, pallet position: 296
- 4-way pallet shuttle(cold chain): 3　　WMS，WCS、RCS system: 1
- Pallet size: 1100mm*1100mm*130mm

Project Achievements

- Build a multi-deep, dense, 3D warehouse to increase space utilisation by 50%
- High-speed operation at low temperature -25℃, efficiency increased by more than 2 times
- Fully automated operation to ensure the cold storage temperature (humidity) steady state environment
- Full battery life of 6~8 hours, effective alternative to manual labour, to solve the problem of recruitment difficulties

Cold chain industry - A High-Density Frozen Food Warehouse in Taiwan, China

Zikoo Solution

- Warehouse area: 408m², clear height: 19.4m, storage locations: 1,206 locations
- 4-way pallet shuttle (cold chain model)::4 , 2 elevators, 1 set of WMS and WCS systems
- Ambient temperature: Warehouse interior -25°C; Pre-cooling room 5°C; Buffer room -2°C

Project Achievements

- Multi-shuttle coordination achieves overall inbound/outbound throughput of 40 pallets/hour
- Fully automated inbound inspection and intelligent bin allocation significantly boosts operational efficiency and accuracy
- Insulated doors synchronized with conveyor lines ensure seamless material transfer and secure cold chain handling

Cold chain industry - A high-density cold store for food in Guangxi

Zikoo Solution

- The cold store spans an area of 5,194 square meters. It features 12,390 storage locations.
- 4-way pallet shuttle (cold chain model):10, 4 high-speed elevators, and one set of WMS, WCS, and RCS software systems

Project Achievements

- Dense storage enhances space utilization, and automated operations ensure robust security for food storage
- The 4-way pallet shuttle (cold chain model) are deployed at -25℃ to guarantee safe and stable goods storage and transportation in a low-temperature environment



Pallet-Storage Robotic - Pioneer



Precision Manufacturing Industry-A Rubber Precision Manufacturing Lineside Warehouse in Suzhou

Zikoo Solution

- Lineside storage area of 400 square metres, net height of 18m, build 14 layers 3D warehouse about 1,000 cargo space
- 4-way pallet shuttle :4, 2 sets of embedded elevators, 1 set of WMS, WCS, RCS software system

Project Achievements

- Built 3:1 ratio linerside warehouse, flat warehouse upgraded to 3D warehouse, limited space is fully utilised
- Warehouse upgraded to digital dynamic management, the number of SKUs of goods is large, and FIFO can be realised
- Inbound and outbound docking unmanned AGV, unified scheduling of the entire field, greatly reducing labour costs

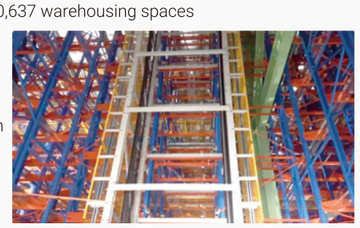
Precision Manufacturing Industry-An Automobile Manufacturing 4-way Shuttle Project in Anhui

Zikoo Solution

- 2 warehouses with a total area of 3,840 square meters of 3D warehouses and a total of 10,637 warehousing spaces
- 4-way pallet shuttle :24, 12 sets of elevators, 1 set of WCS and RCS software

Project Achievements

- Automobile industry line-side warehouse, close to the production line, significantly shorten the material turnaround time, improve the continuity and stability of production
- 24 hours a day operation, seamlessly connecting production demand
- Multi-truck cooperative work, inbound and outbound efficiency up to 189 tons/hour



Precision manufacturing industry - A 3D Warehouse for Automotive Parts in Suzhou

Zikoo Solution

- The stereoscopic warehouse spans an area of 2,973 square meters. It has a clear height of 11 meters. The 3D structure features 5-layer racks with 6,350 storage locations, 4 inbound/outbound gates
- 4-way pallet shuttle:9, 6 elevators, several conveyors, and one set of WMS, WCS, and RCS software systems

Project Achievements

- A high-density stereoscopic warehouse is built, allowing the 4-way pallet shuttle to flexibly maneuver around columns during operation. The warehouse accommodates two pallet sizes, enabling diverse material management through the use of IWMS, IWCS, and RMS systems
- An overhead corridor is built to connect the warehouse and workshop using conveyor belts, creating a smart, integrated production line
- Scheduling across multiple devices ensures efficient inbound and outbound operations, offering 123 pallets per hour

Intelligent Manufacturing Industry - An Industrial Robot Lineside Warehouse in Jiangsu Province

Zikoo Solution

- Vertical warehouse area of 200m², net warehouse height of more than 6 meters, the number of cargo spaces 630, 2 picking stations
- 4-way pallet shuttle:5, 2 elevators, 1 set of WMS, WCS, RCS software system

Project Achievements

- Storage and picking of 2000+ SKUs of parts and components.
- Reduced the number of operators from 7-8 to 3, reducing the working hours per day by 12.5%
- Efficient storage and retrieval, one cycle takes only 3 minutes, storage and retrieval accuracy 99.99%
- 90 days from project planning to full operation





Intelligent Manufacturing Industry-A Raw Material Warehouse of a Manufacturing Company in Nantong

Zikoo Solution

- Warehouse area: 2,065 square meters, clear height approximately 19 meters, 8-layers 3D warehouse, 2,916 storage locations
- Goods dimensions: L1300 × W1300 × H1260/1660/2500 mm
- 4-way pallet shuttle:4, one vertical two-way shuttle, and two elevators，one set of WMS and WCS software systems

Project Achievements

- Double-deck floors are connected to forklift AGVs to achieve automatic transportation
- 20 inbound and outbound stations are designed to directly connect to production machines, improving outbound efficiency
- Supports manual forklifts and AGV forklifts for inbound and outbound operations, enabling automatic supply and stacking of mother pallets and automatic destacking of empty pallets. Supports material cage picking and automatic return of leftover materials and empty material cages to the warehouse. In the later stage, it can be connected to a destacking robotic arm to further improve the level of automation

Building materials industry-A tonne package raw materials 3D warehouse in Anhui

Zikoo Solution

- Tonne package raw material 2-layer ground stack warehouse transformed into a 5-layer 3D warehouse, the number of cargo spaces from 420 to 1208
- 4-way pallet shuttle:5, 2 elevators, more than 20 conveyor lines, 2 destackers, and a set of WMS/ WCS/RCS software systems

Project Achievements

- Upward expansion of storage space, space utilisation rate increased by 2.8 times
- The raw materials of tonnage packages can be loaded onto the production line immediately after outbound, and the efficiency of in and out of the warehouse reaches 65 tph
- Add tonnage weighing, warehousing inspection, quality inspection management and other functions

Third-party logistics industry - A storage and transportation center for home appliance in Tianjin

Zikoo Solution

- The warehouse spans an area of 3,000 square meters, with an available height of 11 meters. The 3D structure features 4-layer racks with 4,700 storage locations
- 4-way pallet shuttle:6, 2 elevators, 2 auto photo scanning OCR systems, and one set of WMS, WCS, and RCS software systems

Project Achievements

- A high-density 3D warehouse is built, with more than 400 types of materials
- The auto photo scanning feature allows for the automatic scanning of various types of products for inbound orders, with an accuracy rate of 99.99%
- Cut down the number of warehouse staff, including handlers and scanners, to save up to 60% on labor costs.
- Efficient collaboration between hardware and software, along with multi-depth planning, results in a comprehensive inbound and outbound efficiency of 90 pallets per hour

Third-party logistics industry - A Kazakhstan Energy 3PL Warehouse

Zikoo Solution

- Warehouse area of 20,000 square meters, with 50,000 storage locations
- 4-way pallet shuttle:30 , 2-way vertical shuttle:14
- One set of WCS and RCS software systems

Project Achievements

- 20% reduction in automated equipment costs
- Standardized and modularized equipment, significantly reduced overall project construction cycle, and reduced labor input by 200 man-days
- Maximum inbound and outbound efficiency of 360 pallets/hour, meeting customer requirements for large-volume, multi-batch business processing

Global Cases



Cooperative partner

www.pressnet.com.au