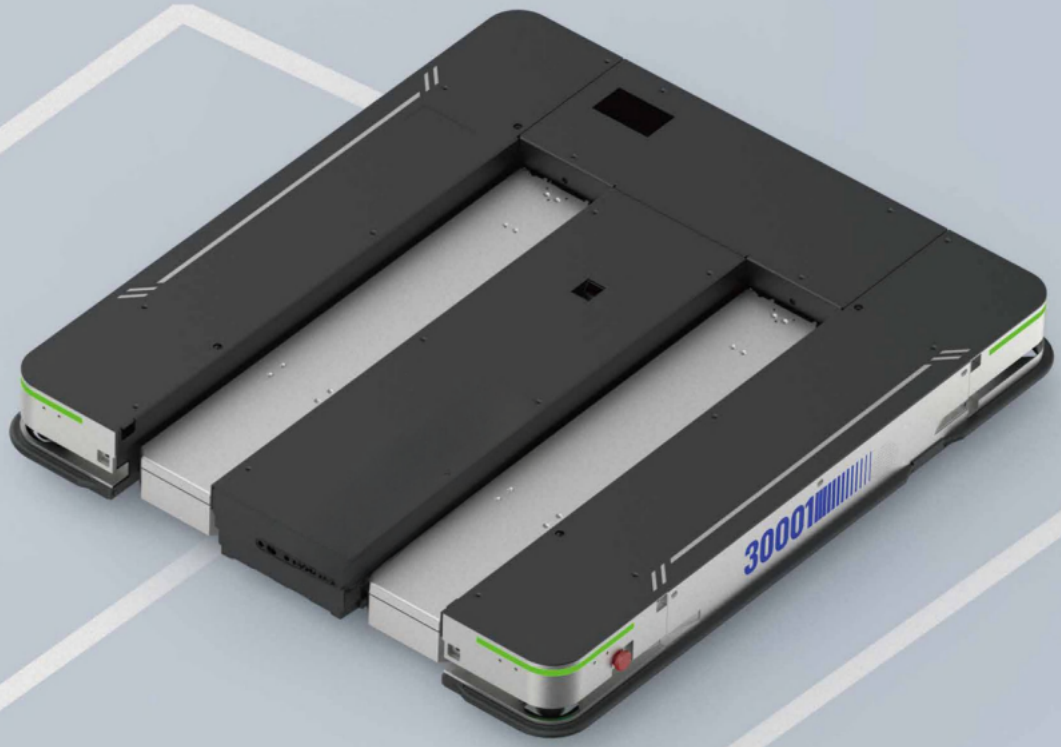
TROY INTELLIGENT

Narrow path of AMR Robot



Start with Intelligence
Growth with Sincerity

AMR Robots devote ourselves to empowering factory and logistics to become intelligent, making handling easier and more efficient. We take the lead in launching this handling and picking intelligent robot product with global unique innovation which can highly fit in the international standard pallets. headquartered in Foshan, Guang-dong, with prod uction facilities based there as well. We have local customer service/support teams in Beijing, Shanghai, Hangzhou, Suz hou, Wuhan, Changsha, Chengdu, and Chongqing. Our versatile robotic solutions find extensive applica-tions in indust ries such as automotive, pharmaceutical, tobacco, new energy, electronics, and commercial trade, enabling busin esses to achieve higher efficiency and safety through continuous automation in material handling.



130+
Global Plant Patents

100+
R&D Personnel

20+
Industrial Applications

30+
Global Channel Coverage

APR Series
No Auxiliary Equipment Required

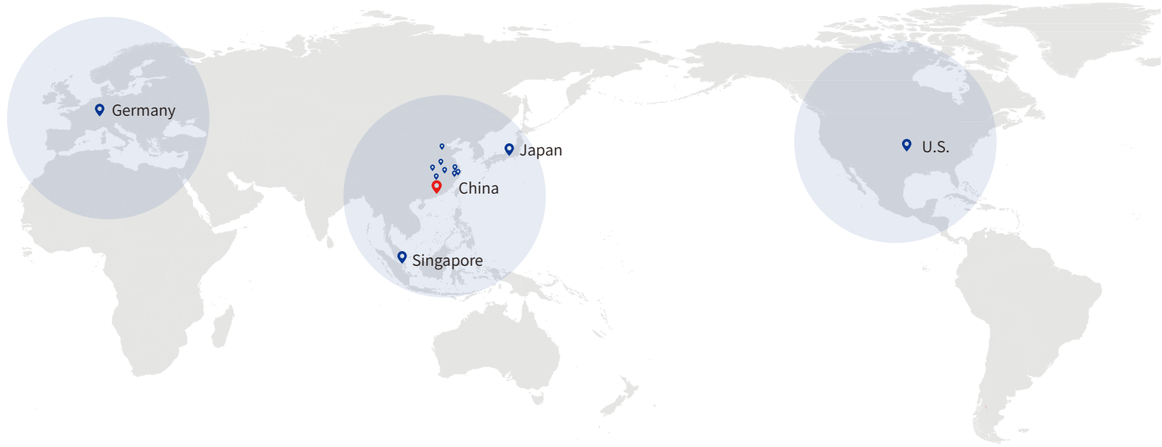
Robot Scheduling System
Integrated Platform System, Visual Bin Detection

Diverse Accessory Products
Supporting Various Business Scenarios

China Headquarter
Foshan

China Branches
Beijing/Shanghai/hangzhou

After-sales service network extends globally including Europe, North America, and Southeast Asia.



Headquarter Branch

Honors

CE Marking

ISO9001

2023 RBR50 Robotics Innovation Awards

Red Dot Design Award

IF Design Award

LT Award

GG-Led Golden Globe Award

Golden Ant Awards

World Innovation Award

Equal Ocean Rising Global Enterprises Top50

Outstanding Industrial Robotics Companies

56 PinPai

Implementation of Preparation

Equipment Inventory
On-Site Review of the Solution
Check of Implementation Conditions
Software Pre-Integration and Debugging

Implementation in Project Site

DM Code Construction、SLAM Mapping
System Map Drawing System
Environment and Parameter Configuration
Software and Hardware Debugging

Launch and Support

User Training / Launching Trial Run
Handbook Information Handover / Maintenance Training
Sign for Acceptance
After-sale Technical Support Service

- 7x24 remote technical support
- On-Site Maintenance Service
- Preventive Maintenance Service
- Peak On-Site Support Service
- Accessories and Tooling Equipment Package
- Technical Training Service
- System Upgrade and Maintenance Service
- Annual Framework Service

Company History

2018

1.Innovatively introduced the concept of the APR (Automated Pallet Robot).
2.The founding team initiated the R&D process, conducting prototype validation.

2019

1.Introducing our second-generation Omni -directional Pallet Robot, which underwent on-site testing and application with our esteemed angel customer.
2.We participated in the Shanghai Logistics Expo, making our first public appearance.

2020

1.Launched the third-generation industrial-grade version and introduced the multi-robot scheduling management system to the market.
2.Successful implementations in pharmaceutical and 3C industries.
3.Introducing the E-Series: Our First Differential Pallet Robot

2021

1.Continuously secured multiple rounds of funding totaling billions of RMB.
2.Established a production base in Foshan.
3.Launched the fourth-generation robot, along with the SLAM navigation edition.
4.Introduced a large-scale robot cluster scheduling system, wireless control module, and terminal app, which extensively support the integration of automatic doors, elevators, robotic arms, and other equipment, enabling a comprehensive pallet robot system solution.
5.Projects in the renewable energy and automotive electronics industries have been effectively implemented.

2022

1.Established multiple regional marketing and after-sales operation centers to provide global coverage
2.Obtained the ISO 9001 quality management system certification.
3.Introduced the fifth-generation heavy-duty 1.2t APR
4.Introduced the F-Series forklift-style robot and C-Series lift-style robot.
5.Leveraging deep learning technology, we proudly launched the fourth-generation robot management system with support for visual bin detection.
6.We participated in the Chinese logistics exhibition for the first time and received the Golden Ant Award.
7.We have successfully implemented over 100 cases across 20+ industries, earning recognition and repeat orders from multiple Fortune Global 500 companies. The APR product started to widely promoted within China.

2023

1.Initiated global expansion by establishing branches in North America, Europe, Japan, and Southeast Asia
2.Actively engaged in international exhibitions such as PROMAT in the U.S., HANNOVER MESSE in Germany, and KANSAI LOGISTICS EXPO in Japan, strategically expanding our presence in the global market.
3.Introduced the sixth-generation high-performance E-Series pallet robot.
4.Awarded the prestigious international Red Dot Design Award and the German iF Design Award.
5.Honored to receive the "Logistics Oscars," the LT China Logistics Technology Award for Innovation in Product.
6.Awarded the 2023 RBR50 Global Robotics Innovation Award, making us the only Chinese company to receive this prestigious honor

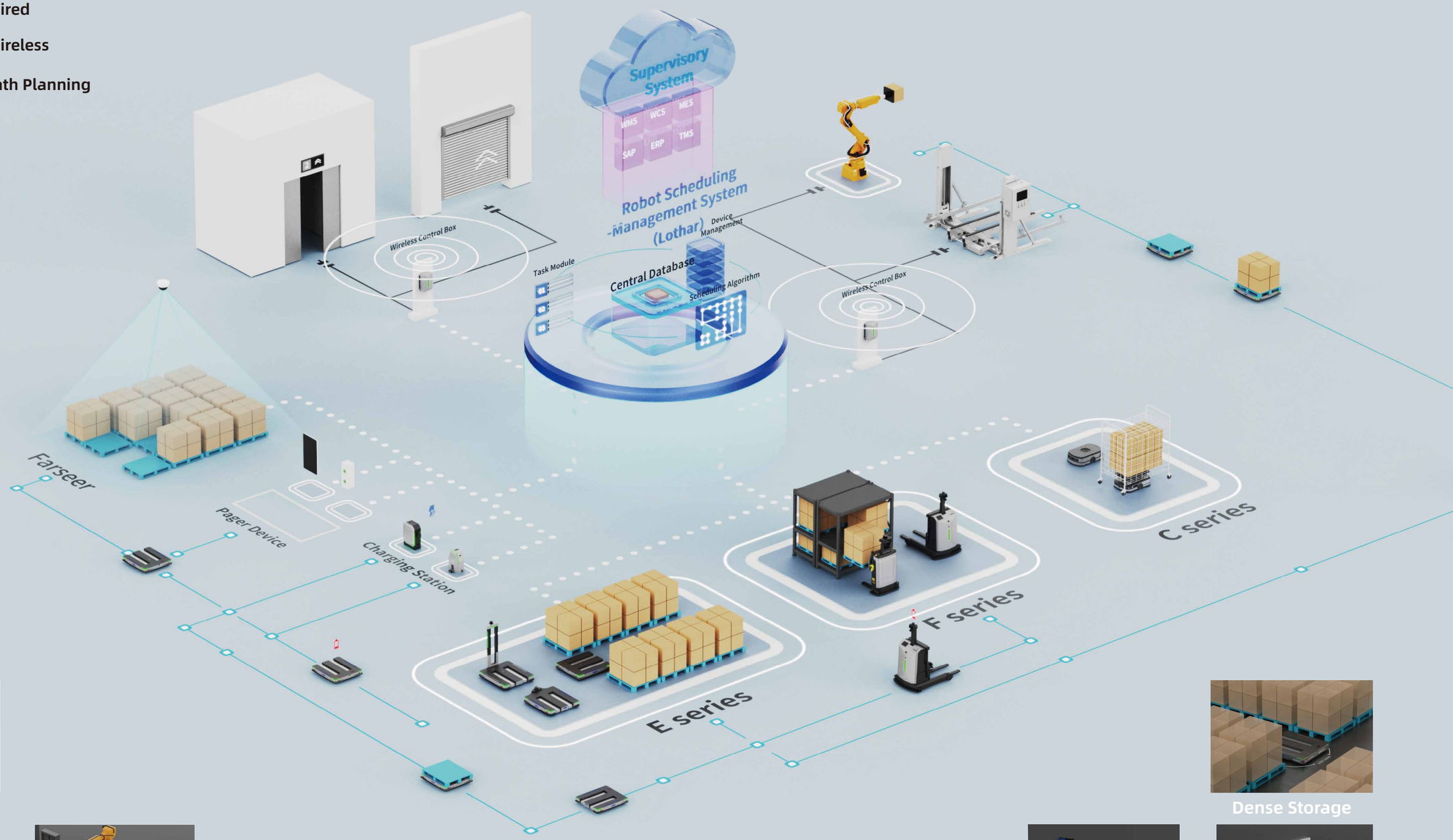
APR Scene Architecture

TROY INTELLIGENT

Wired

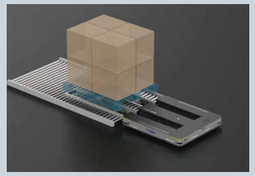
Wireless

Path Planning





Lift Conveyor Line

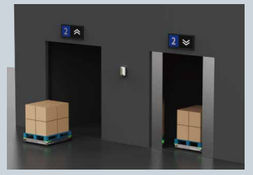


Ground Roller

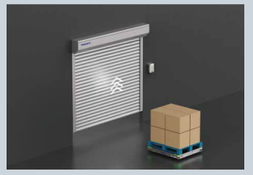


Robotic Arm

Dense Storage



Elevator



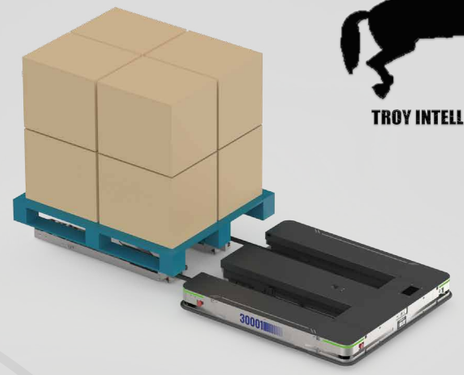
Automatic Door

E-series Function Introduction

Lifting Mechanism

Invisible Fork Arm Direct Pallet Pickup

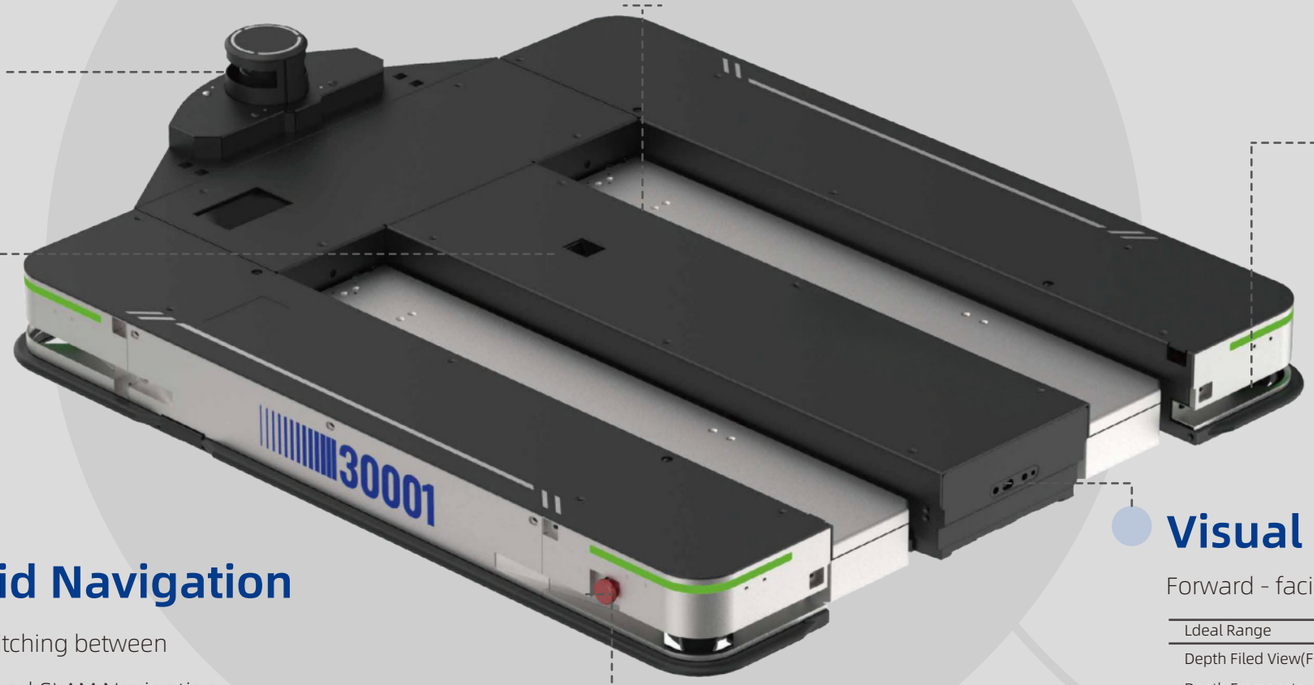
Body-Backed Operation

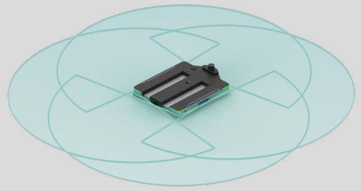


1000KG
Rated load

1.5m/s
Move Speed

8H
Battery Endurance





360° Obstacle Avoidance

4 laser configuration, 360° laser protection

Detection distance	6m
Scanning angle	270 °
Frame rate	30 fps
Resolution	0.5°/1mm
Absolute accuracy	±20mm
Protection	IP65

Hybrid Navigation

Hybrid Switching between

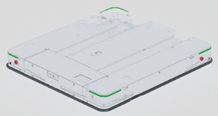
DM Code and SLAM Navigation

SLAM Laser	
Detection distance	25m
Scanning angle	360°
Frame rate	10-30 fps
Resolution	0.05°/1mm
Resistant to light interference	80000 Lux
Protection	IP65

Visual Obstacle Avoidance

Forward - facing stereo camera, stereoscopic space protection

Ldeal Range	3m
Depth Filed View(FOV)	87°×56°
Depth Frame rate	90 fps
Resolution	1280×720

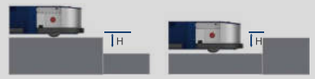


Multi-dimensional Protection

Safety Bumper, Emergency Stop Button, Status Indicator Lights, Voice Alarm, providing real-time monitoring of APR operation status and safety protection from all directions

Ground Adaptability

Step — H≤15mm within a range of 100mm length



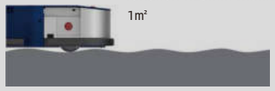
Slope — α≤4°



Gap — L≤40mm



Surface Roughness — Variation w≤5mm within 1m²



E10

Standard Pallet

Available for 1000*1200mm plastic pallet handling

High-level Safety

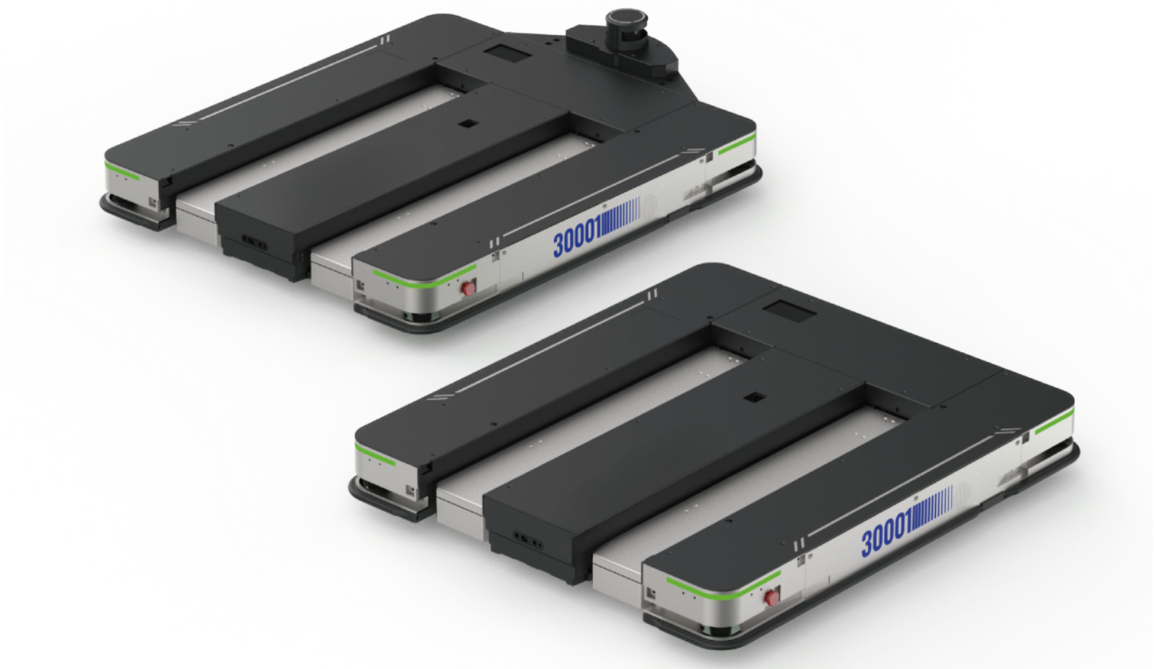
360° laser obstacle avoidance detection, cargo detection, etc.

Narrow Aisle

The minimum width of pallet handling aisle is 1800mm

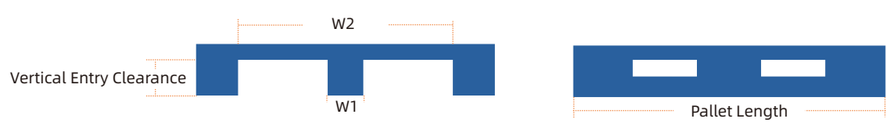
Equipment Docking

Multi-equipment types docking support,- such as lift, elevator, mechanical arm,etc.





Project	Specifications	E10	E10-SLAM
Basic Parameters	Size(mm)	1233×1102×170	1399×1102×170 (SLAM component can be elevated)
	Rated Load (kg)	1000	
	Self-Weight (kg)	310	330
	Rotation Diameter (mm)	1593	
	Fork Height (mm)	90	
	Fork Stretch Out Max Limit (mm)	1400	
	Fork Max Lifting Height (mm)	≤330	
	Display Screen	5 inches	
	Telecommunication Modes	Default WIFI version：Support dual-band 2.4G/5G, IEEE802.11b/g/n (-5G version support 5G communication)	
Safety Protection	Obstacle Avoidance Protection	Front laser sensors + Rear laser sensors, 360° obstacle avoidance detection	
	Three-dimensional Protection	Forward-facing stereo camera visual obstacle avoidance	
	Detection Distance of Front Laser	≤3m	
	Mechanical Protection	Emergency stop button，Reset button，A protection strip around the whole vehicle body	
	Caution Function	With voice and photoelectric alarm functions	
	Navigation Mode	DM code	SLAM + DM code Dual Navigation
	Max Speed	1.5m/s（Zero Loaded）/ 1.2m/s（Fully Loaded）	
	Robot Stop Accuracy	±5mm /±1°	±10mm /±1°
	Movement Mode	two-wheel differential	
	Maximum Robot Ground Adaptability	40mm(Gap)/4°(Slope)/15mm(Stair-step)	
	Maximum Fork Ground Adaptability	10mm(Gap)/1.9°(Slope)/5mm(Stair-step)	
Lithium Battery Performance	Rated Voltage/Capacity	51.2V/30AH	
	Battery Life	The times of fully charging: 1500 times (The battery capacity is guaranted to be more than 70% of the new battery)	
	Battery Endurance/Charging Time	≥8H/≤1.5H	
	Battery Type	LFP	
Pallet Requirement	The Width of W1 and W2 (mm)	W1≤190， 700≤W2≤970	
	Vertical Entry Clearance(mm)	95-130	
	Pallet Length (mm)	≤1400	≤1300



E-Arctic

Cold storage APR

Hot & Low Temperature Operation

Operating temperature -20℃ - 30℃

High Temperature Difference

Suitable for the temperature difference of 30℃

Multiple Waterproof

Structure and electronic devices multiple waterproof









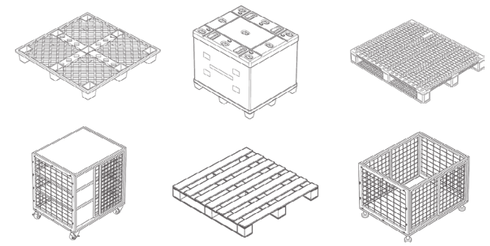
Project	Specifications	E10(Arctic)	E10-SLAM(Arctic)
Basic Parameters	Size(mm)	1233x1102x170	1399×1102×272.5
	Rated Load (kg)	1000	
	Self-Weight (kg)	323	333
	Fork Height (mm)	90	
	Fork Stretch Out Max Limit (mm)	≤330	
	Fork Max Lifting Height (mm)	95-130	
	Display Screen	5 inches	
	Telecommunication Modes	Default WIFI version: Support dual-band 2.4G/5G, IEEE802.11b/g/n (-5G version support 5G communication)	
	Suitable for ambient temperature	-10℃ - 50℃	
Safety Protection	Obstacle Avoidance Protection	Front laser sensors + Rear laser sensors, 360° obstacle avoidance detection	
	Detection Distance of Front Laser	≤3m	
	Mechanical Protection	Emergency stop button，Reset button，A protection strip around the whole vehicle body	
	Caution Function	With voice and photoelectric alarm functions	
Lithium Battery Performance	Navigation Mode	DM code	SLAM + DM code Dual Navigation
	Zero Loaded	0-2.0m/s	
	Fully Loaded	0-1.5m/s	
	Rated Acceleration	1 m/s²	
	Robot Stop Accuracy	±5mm /±1°	±10mm /±1°
	Movement Mode	two-wheel differential	
	Maximum gap	40mm	
	Maximum slope	4°(7%)	
	Maximum step	15mm	
	Maximum slope of the fork arm telescopic	1.9°	
Pallet Requirement	Rated Voltage/Capacity	51.2V/30AH	
	Battery Life	The times of fully charging: 2000 times (The battery capacity is guaranted to be more than 70% of the new battery)	
	Battery Endurance/Charging Time	≥6H/≤1.5H	
	Battery Type	Lithium iron phosphate	

Carrier Adaptation

Standard	Parameters	
Inner width slots W1(mm)	W1≤190	
outer width slots W2(mm)	700≤W2≤950	
Inner pallet heigh H(mm)	95≤H≤130	
Pallet Length L(mm)	≤1400(DM-code)	≤1300(SLAM)



Types



E08

EPAL Euro Pallet

Available for EPAL Euro pallet handling

High-level Safety

360° obstacle avoidance detection,cargo detection, etc.

Narrow Aisle

The minimum width of pallet handling aisle is 1700mm

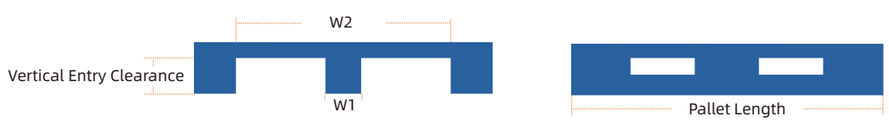
Equipment Docking

Multi-equipment types docking support, such as lift, elevator, mechanical arm, floor roller, etc.





Project	Specifications	E08	E08-SLAM
Basic Parameters	Size(mm)	1283×983×170	1449×983×170 (SLAM component can be elevated)
	Rated Load (kg)	800	
	Self-Weight (kg)	290	300
	Fork Height (mm)	90	
	Pallet Insertion Height (mm)	95-130	
	Fork Max Lifting Height (mm)	≤330	
	Display Screen	5 inches	
	Telecommunication Modes	Support Dual-band WIFI and 5G communication	
Environment	Operating temperature(℃)	0~45	
Safety Protection	Obstacle Avoidance Protection	Front double laser sensors + Rear laser sensors, 360° obstacle avoidance detection	
	Three-dimensional Obstacle Avoidance	Optional	
	Detection Distance of Front Laser	≤3m	
	Mechanical Protection	Emergency stop button, Reset button, A protection strip around the whole vehicle body	
	Caution Function	With voice and light alarm functions	
	Fork Tip Protection	Photoelectric Sensor with Detection Range ≤100mm, Collision Switch	
	Navigation Mode	DM code	SLAM + DM code
	Maximum Speed (Full Load/Empty Load)	1.5/ 1.2m/s	
	Robot Stop Accuracy	±5mm /±1°	±20mm /±2°
	Movement Mode	two-wheel differential	
	Maximum Slope Performance	4°(7%)	
	Maximum Slope Gradient for Fork Arm Extension	1.9°	
Lithium Battery Performance	Rated Voltage/Capacity	51.2V/30AH	
	Battery Life	The times of fully charging: 2000 times (The battery capacity is guaranted to be more than 70% of the new battery)	
	Battery Endurance/Charging Time	≥8H/≤1.5H	
	Battery Type	LFP	
Pallet Requirement	The Width of W1 and W2(mm)	W1≤160, 600≤W2≤800	
	Vertical Entry Clearance(mm)	95-130	
	Pallet Length (mm)	≤1400	≤1300



TR-FH14

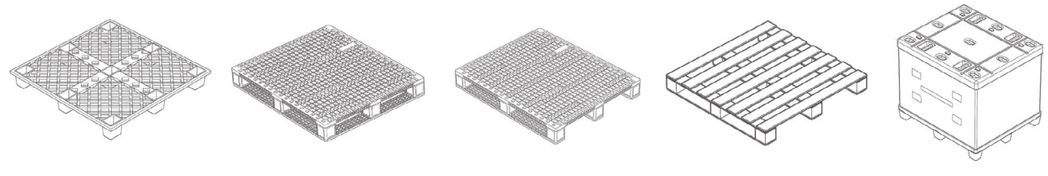
Stacker Forklift Robot



- **1.4t**
  Maximum Load
- **1.6m**
  Maximum Lifting Height
- **Open Pallet**
  Pallet Adaptation

Project	Specifications	FH14	FM14
Basic Parameter	Drive Mode	Steering wheel	Steering wheel
	Navigation ModeR	Laser slam	Laser slam
	Self-weight(kg)	880	1890
	Rated Load(kg)	1400	1400
	Standard Lifting Height(mm)	1600	1600
	Fork Height from Ground Level (at its lowest position)(mm)	90	-
	Navigation Laser Scanning Height(mm)	1900	1850
	Overall Size(L*W*H)(mm)	1665*950*2000	2077*1200*2120
	Fork Size(L*W*H)(mm)	1150*190*60	1200*122*40
	Fork Outside Distance(mm)	680	650
	Ground Clearance(Wheelbase Center)(mm)	25	30
	Turning Radius(mm)	1150	1480
	Telecommunication Modes	Default WIFI version: support dual-band 2.4G/5G, IEEE802.11b/g/n (-5G version support 5G communication)	
	HMI Display Screen	10 inches	7 inches
	Work Noise Level dB(A)	≤73	≤70
Movement Capability	Operation Speed (Full Load/Empty Load)(m/s)	1.0/1.5	1.4/1.7
	Positioning Accuracy(mm)	±10	±10
	Angle Accuracy(°)	±1	±1
	Fork Lifting Speed (Full Load/Empty Load) (mm/s)	115/175	115/170
	Fork Lowering Speed (Full Load/Empty Load) (mm/s)	160/128	114/114
	Ground Adaptation(Slope/Step/Gap)	≤5%/10mm/30mm	≤5%/15mm/30mm
Battery Parameters	Battery Capacity	24V/200Ah	24V/180Ah
	Battery Life	Times of fully charging over 1500	Times of fully charging over 1500
	Endurance Time/Charging Time	≥10H/≤2H	≥8H/≤2H
	Charging Mode	AUTO/Manual	AUTO/Manual
	Battery Type	LFP	LFP
Safety Functions	Obstacle Avoidance Laser	360° Laser Protection	360° Laser Protection
	Mechanical protection	Vehicle Body Semi-Wrap Bumper Guard	Vehicle Body Semi-Wrap Bumper Guard
	Pallet Position Detection	Dual In-Position Inspection, Contact-Type	Dual In-Position Inspection, Contact-Type
	Fork Tip Collision Detection	Photoelectric Detection	Photoelectric Detection
	Emergency Stop Button	Left/Right Emergency Stop Button	Left/Right Emergency Stop Button
	Audio-Visual Alarm	Audio-Visual Alarm	Audio-Visual Alarm

CARRIER ADAPTATION

Types




- **1.4t**
  Maximum Load
- **1.6m**
  Maximum Lifting Height
- **Open and Closed Pallet**
  Pallet Adaptation

TR-FM14

Forward-Moving Forklift Robot

C-series Latent Mobile Robot

Collaborative Operations

Multi-Series Robot Collaborations
Supports Third-Party Integration

Safety Protection

Multiple Safety Protection Measures,
Reliable and Secure

Adaptable to Multiple Scenarios

Suitable for various scenarios, including warehousing, workshops, and 3PLs



Project	Specifications	C06-D	C06C-D	C10-D	C10C-D
Basic Parameters	Rated Load(kg)	600		1000	
	Overall SizeL*W*H(mm)	950×650×250		1150×650×255	
	Rotation Diameter(mm)	965		1201	
	Lifting Height(mm)	60		60	
	Ground Clearance(mm)	25		25	
	Lifting Plate Size(mm)	850×600		850×600	
	Lifting method	Electric lifting			
	Self-weight(kg)	130		180	
	Communication method	Default WIFI dual-band, 5G optional			
	Navigation Mode	DM Code	DM Code + Laser SLAM	DM Code	DM Code + Laser SLAM
	LCD Display	Equipped			
Safety Protection	Front Protection	250° Laser			
	Rear Protection	Laser Optional			
	Collision Strip Detection	360° Inspection			
	Emergency Stop Button	One at the front and one at the rear			
	Lighting alerts	Equipped			
	Voice prompts	Equipped			
	3D Obstacle Avoidance	Optional			
Movement Capability	Maximum Speed (Full Load/Empty Load)	2.0/1.5		1.8/1.5	
	Rated Acceleration	1 m/s²		1 m/s²	
	Stop Angle Accuracy(°)	±1		±1	
	Stop Position Accuracy(mm)	±5	±10	±5	±10
Lithium Battery Performance	Rated Voltage(v)	51.2		51.2	
	Capacity（Ah）	24		40	
	Number of Charge Cycles	2000 Full Charge and Discharge Cycles			
	Battery Endurance/Charging Time	≥8H/≤1.5H			
	Charging Time（H）	Duration of Charging after Full Discharge			
	Battery Type	LFP			

Accessories



Charging Station



System Control

Wireless Communication and Centralized System Control

Intelligent Control

Real-time monitoring of temperature and current
Overcurrent, Overvoltage, and Overheat Protection, Intelligent Cooling

Intelligent Identification

Charging Identity Recognition and Access Inspection

Protection

Electric Shock Protection, Protection against Motor Exposures and Foreign Object Detection

Dual-Charging Mode

Supports Manual and Automatic Mode Switching

Communication Module

Supports Dual-band WiFi and Mobile 5G Communication

Calling Device

One-Click Call

Call tasks directly with a single button press.

Fault Location

Achieve fault location through an intelligent system.

Live Monitoring

Real-time display of task status, location information, and equipment status.

User-Friendly Operation

Visualized operational logic for easy and intuitive operation and equipment status.



Wireless Control Box



IO Interface

Provides Multiple Digital Input and Output Interface and equipment status.S

Communication Interface

Provides RS232 and RS485 Communication Interfaces

Network Connectivity

Support dual-frequency WIFI and 5G communication

Customization

Supports Customizable and Multiple Protocols.

Various Devices

Supports integration with automatic doors, elevators, signal lights, and other devices

Third Party

Supports Third-party Device Integration into the System

Instanders for forklifts

Fingerprint login

Log in through fingerprints, identify, control driving permissions;

Safety belt detection

Whether to wear a seat belt detection to ensure the driver's safety

Intelligent speed measurement

In real-time detection of forklift operation speed, providing reference and overspeed alarm for the driver

Sound and light alarm

Equipped with sound and light alarms, providing multiple sensory prompts



Software System Introduction



Intelligent Management Platform

Access Layer

PC | Mobile Phone | Tablet PC | PDA | Third-Party(ERP/WMS/MES/SAP/TMS)

Appli-cation Layer

Data Board	Map Management	Task Management	Basic Configuration	Other Tools
Task Execution	Real-time Monitoring	Task List	Service Management	User Role
Equipment Efficiency	Monitoring Playback	Task Configuration	Equipment Vehicle	Log Management
Equipment Connection	Map Editing	Task Debugging	System Parameter	Data Dictionary
Electricity Supervision	Regional Management	Alarm Management	Charging Strategy	Coding Tools

Platform Layer

LOTHAR Platform System | PALADIN Dispatching System | NAGA Simulation System | FARSEER Location Detection System

Infras-tructure Layer

External Perception | Network Communications | Computing Resource | Storage Resource | DevOps

Equip-ment Layer

AGV	Forklift	Ground Roller	Charging Pile	Hoister	Button Box Pager	Camera
Automatic Door	Elevator	Mechanical Arm	Conveyor Line	Pallet Stacking Machine	Palletizer	Wrapping Machine



Real-Time Display



Homepage Data Dashboard

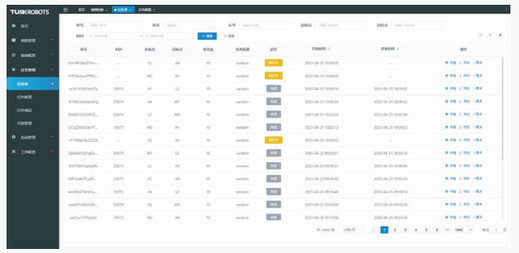
Offering real-time and historical visualized data toempower data analysis and aid in business decision-making.



Real-time Map Tracking

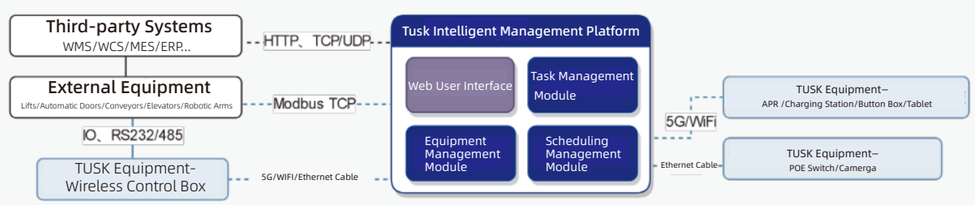
Quick and easy visualization of map construction enables real-time monitoring of on-site conditions at project location

Task Management



- Transportation Mode: Combination of Point and Area Handling,
- Picking Mode: Call from Operation Station,
- Fixed Mode: Initialization, Clearing, and Organizing,
- Collaborative Mode: Multi-vehicle Collaborative Box Picking,
- Manual Mode: Manual Task Assignment, Cancellation, and Designated Charging

External Interface

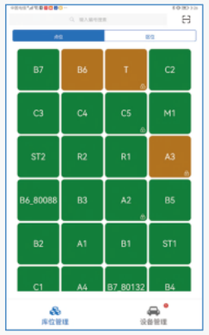


Mobile Application

self-developed mobile app for Android devices offers real-time manaement o f storage locations, zones, and device status. It facilitates quick task initiation, simple inventory management, and device anomaly alerts.
With an intuitive UI design, it ensures low learning curve and easy usage for operators.

- Supports All Android Devices
- Real-time Query of Devices
- Swift Initiation of Tasks
- Exception Diagnosis
- Easy Inventory Management
- DM Code Scanning Input



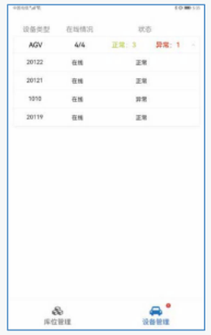


Location Management



Point/Area Operation

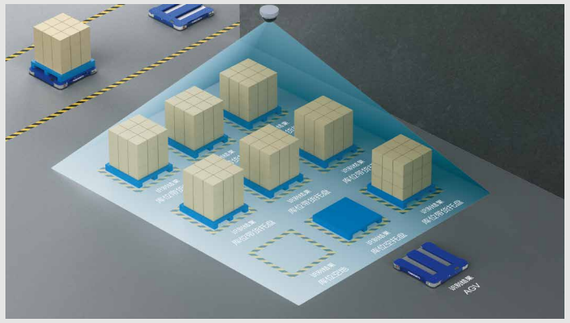
Performing inbound and outbound operations in designated location



Device Management

Storage Location Visual Inspection System

The Storage Location Visual Inspection System uses deep learning image recognition to monitor storage locations in real-time. It updates information to Intelligent Management Platform and optimizes robot deployment for factory operations accordingly.



Recognizable Storage Location States



Unoccupied Ground without Pallets

Empty Pallets

Loaded Pallets

The Storage Location Visual Inspection System paired with the LEGO Task Configuration Module, offers flexible application for various business scenarios and task workflows. It enables automated triggering of pre-configured transport tasks like semi-finished product offloading, finished product offloading, raw material replenishment, empty pallet recycling, and empty pallet replenishment based on storage location status changes.

Case

Automotive Electronics Industry



Phase 2 of the APR Handling Project for Finished Products and Raw Materials at a Shenzhen Automotive Parts Manufacturer;

APR Handling Project for XAP (Electronic Group) Raw Materials and Finished Products

Pharmaceutical Industry



Intelligent APR Handling Project for Logistics in the Clean Area of a Pharmaceutical Limited Company;

APR Project for Intelligent Expandable Forklifts in a New Solid Dosage Workshop

Tobacco Industry



Automation Project for Discrete Material Handling in the Semi-Finished Tobacco Production at a Cigarette Factory;

APR Handling Project at a Central Tobacco Logistics Transfer Center

Electrical Vehicle



APR Project for Line-side Delivery of Aluminum Shells and Top Covers in a New Energy Company;

APR Project for Material Transfer at a Limited Company's Foil Materials Division

Food Industry



Cross-Floor Material Transfer Project for Raw Materials and Finished Products at a Food Company in Guizhou;

APR Handling Project for Semi-Finished Product Warehousing at a Limited Company in Fujian

Home Appliance Industry



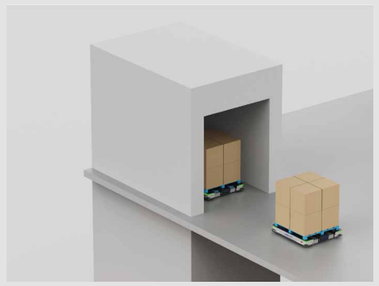
NB Packaging Line and Warehouse Material Distribution Project in Hefei;

APR Material Handling Project in a Environmental Systems Sub-factory in Foshan

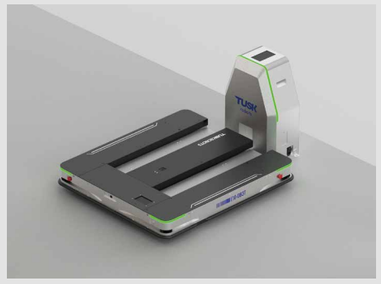
- Cosmetics Industry
- Logistics Industry
- Furniture Industry
- Printing Industry
- Electronics Components Industry
- Automotive Parts Industry
- .....



Lift Docking



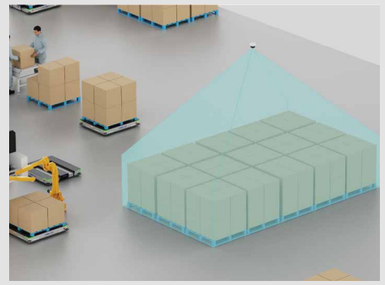
Elevator Docking



Automatic Charging



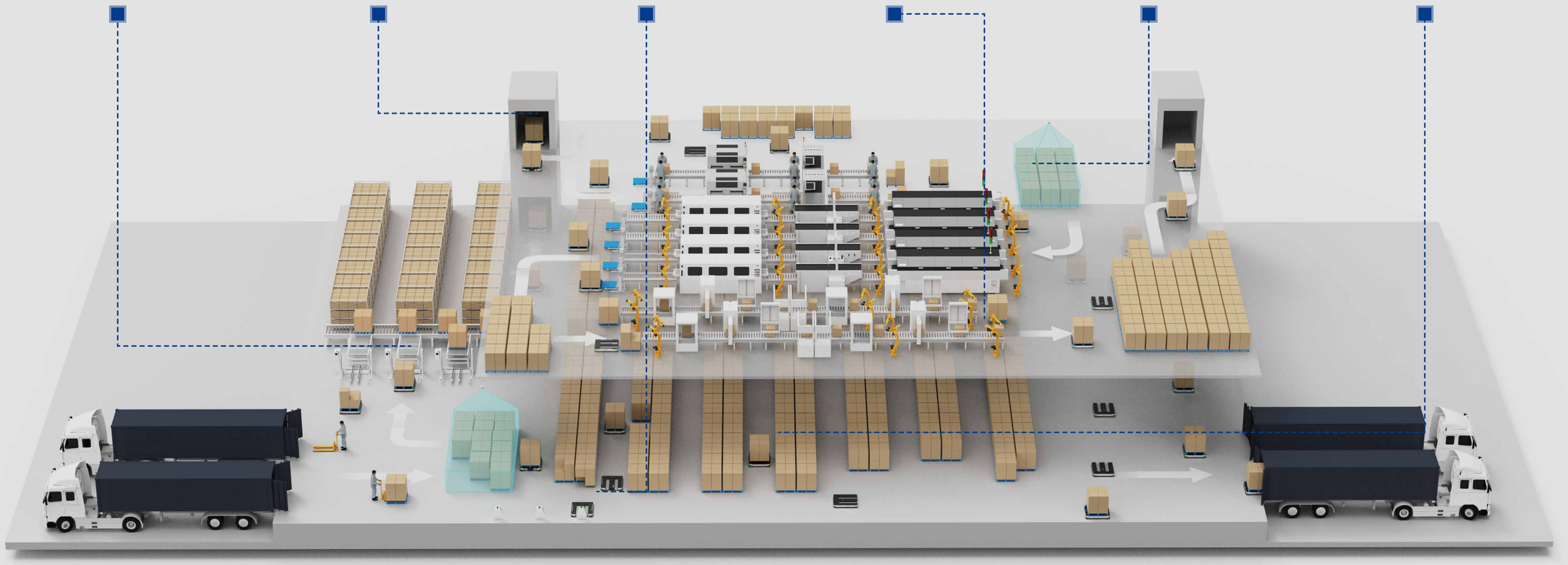
Line-side Transportationv



Farseer Bin Location Detection

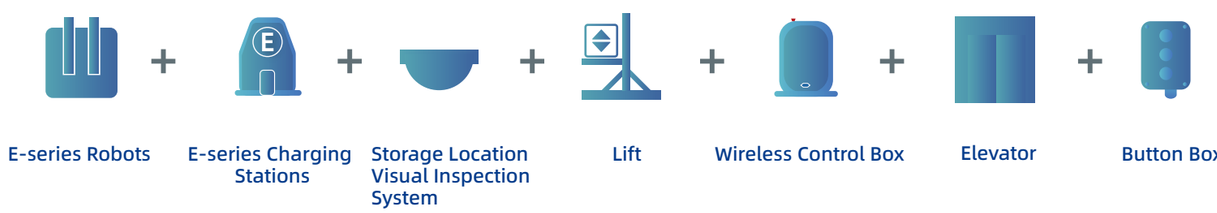


High-Density Storage



Creates Smart Factory Solutions

ment system, in conjunction with factory automation production lines, MES, and WMS systems, the material flow paths of inbound and outbound docks, staging areas, production line areas, and semi-finished and finished goods storage areas are interconnected. This enables end-to-end traceability, control, and visualization, providing a comprehensive and integrated solution for intelligent factory logistics, covering production and inventory management.



Automotive Electronics Industry

APR Handling Project for XAP (Electronic Group) Raw Materials and Finished Products.

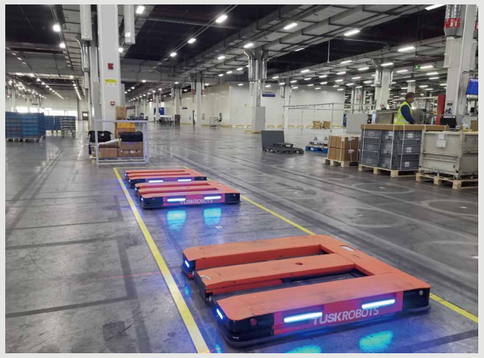
Industry Case Studies

Client Profile

- **Leading global** automotive electronics company, a **Fortune Global 500** German corporation;
- Three-shift operation with strong workforce, but delayed manual material replenishment;
- Diverse carrier categories lacking process monitoring, resulting in high management costs.

Solution

- **Button call system** for seamless raw material replenishment and finished product transfer;
- **360° laser safety protection** with intelligent human-machine interaction for collision avoidance;
- Real-time integration with WMS/JIS digital systems for online monitoring through data fusion;
- Standardization of 16 pallet types down to **4**, reducing management costs;



Project Value

- Average daily operation 18 hours
- More than 25% Efficiency Increase
- ROI 1.5 years
- Cost reduction and efficiency enhancement
- Stable Operation with 2 Repurchases in 2 years

Pharmaceutical Industry

Intelligent APR Handling Project for Logistics in the Clean Area of a Pharmaceutical Limited Company

Industry Case Studies

Client Profile

- A nationally recognized innovative enterprise engaged in the research, production, and global distribution of novel pharmaceuticals;
- Challenges include low manual labor efficiency in multi-floor, multi-zone warehouse transfers;
- Varied sterilization requirements across zones make manual aseptic handling **difficult to control**;

Solution

- Automatic distribution and transfer of packaging materials, raw materials, and finished products in **multiple zones**;
- Full automation with **elevator integration** for efficient multi-floor operations;
- SLAM + DM code **hybrid navigation** for adapting to various environmental requirements in different areas;
- Zone-based door control switching and **automatic disinfection and sterilization**;



Project Value

- 20 Units of APRs Utilization
- Cost Reduction and Efficiency Enhancement
- Inter-Floor Transportation
- Hybrid Navigation Operations

Home Appliance Industry

NB Packaging Line and Warehouse Material Distribution Project in Hefei

Industry Case Studies

Client Profile

- A famous enterprise in the home appliance manufacturing industry looking to establish an intelligent, lean **benchmark factory**;
- Operates 24/7 with high labor intensity, leading to fatigue issues;
- Facing high labor cost and recruitment challenges;
- Current inventory management lacks **material information integration**;



Solution

- Achieved automated material transfer within the workshop and at the production line side by integrating APR.
- APR automatically docks with **the hoister**, enabling cross-floor material transfer for production;
- **Customized business processes** integrated deeply with the customer's MES, enabling end-to-end automation and flexibility in production;



Project Value

More than 30% Efficiency Increase

Reduction of 15 Personnel

Cost reduction and increased efficiency

Flexible, efficient, and safe production

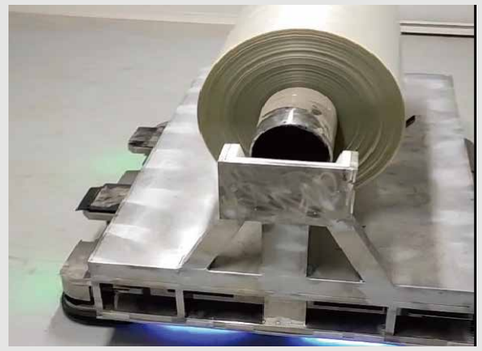
Electrical Vehicle

APR Project for Line-side Delivery of Aluminum Shells and Top Covers in a New Energy Company

Industry Case Studies

Client Profile

- A well-known domestic high-tech enterprise established in 1995, leading in multiple fields such as batteries, electronics, and automobiles;
- Working across multiple floors, long-distance transportation, resulting in high-intensity labor and **high safety risks**;
- **Low efficiency** in temporary storage management and material handling interactions;



Solution

- Pallet handling of foil and electrode materials for warehouse inventory, including cross-floor transportation, with **high-precision alignment** to elevators within **±5mm**;
- Customized carriers equipped with automatic recognition capabilities, compatible with various equipment;
- Real-time integration with WMS for end-to-end visibility and control throughout the process;



Project Value

Over 80 Units of APRs Utilization

More than 35% Efficiency Increase

Multiple Project Launches Across Locations

Customized Carriers

Visualized Tracking



Food Industry

Cross-Floor Material Transfer Project for Raw Materials and Finished Products at a Food Company in Guizhou

Industry Case Studies

Client Profile

- Positioned as a high-quality chain bakery brand, occupying a modern industrial park of over 60,000㎡;
- Chain-operated business with high production capacity and **stringent delivery schedule accuracy requirements**;
- Involves long-distance, cross-floor material handling, with a heavy reliance on manual labor that faces staffing instability;
- Complex passageways and transfer areas, with a high risk to personnel safety;



Solution

- PDA task instructions are issued promptly, ensuring seamless task execution;
- Efficient transportation with seamless transitions **across floors and diagonal warehouse** map locations;
- Utilizes 5G device communication for low latency and high stability;
- Employs SLAM+DM code **hybrid navigation** for highly adaptable environmental navigation;



Project Value

- 8 Units of APRs Utilization
- Reduction of 6 Personnel
- Increase in Inventory by Over 30%
- Hybrid Navigation Operations
- 5G Communication



Tobacco Industry

Automation Project for Discrete Material Handling in the Semi-Finished Tobacco Production at a Cigarette Factory

Industry Case Studies

Client Profile

- Well-known tobacco industry corporation with 6 major cigarette production plants;
- Multiple on-site handling scenarios with long transportation distances, imposing significant manual labor;
- High-stacked goods pose substantial safety risks during handling;



Solution

- Automated Integration of **Robotic Arm** for Unpacking and Palletizing;
- **Double-Stacking** of Tobacco Bales in the Casing Box for **Enhanced Stability and Safety** during Transportation;
- **360° Laser** Safety Protection for Effective Hazard Elimination;
- Real-time Integration with WMS Digital System for Data Fusion and Online Monitoring;



Project Value

- Over 20 Units of APRs Utilization
- Reduction of 6 Personnel
- Stable Operation for Over 1 Year
- 360° Laser Safety Protection
- Precision Integration



Automotive Parts Industry

Advancing Automated Multi-Vehicle Collaboration in the Logistics of an Automotive Parts Enterprise

Industry Case Studies

Client Profile

- Established in 1972, a world-leading automotive technology manufacturer with a global sales presence;
- Significant safety hazards exist due to **the coexistence of numerous manual material handling equipment** in the workshop;
- Dependence on manual operations for goods in/out and transfers, leading to delayed response to demands;
- Complex working conditions, **diverse carriers**, and high difficulty in task allocation and vehicle scheduling;



Solution

- APR seamlessly **integrates with third-party equipment** for efficient t ransfers and automated outbound processes;
- Combining with the **C-series Submersible Lifting Robot** can ensure precise material distribution and automatic retrieval of empty carts;
- Visual Inspection System autonomously updates inventory statuses, enabling **human-machine collaboration** and one-click deliveries;



Project Value

30% Efficiency Improvement

RReduction of 30 Personnel

Precise and Efficient Human-Machine Interaction

Collaborative Operation of Different Types of Equipment

APR Creator

Expert in Pallet Handling Scenarios

Product and Solution Consulting

Marketing Department

Offcial Website

www.Troysupply.com