W@W
Autonomous Order Picking System

Material Handling to Material Moving

W@W
数智新仓 | 仓储从此改变

Digital solution for small materials

EP Autonomous Order Picking Solution

EP autonomous order picking solution is composed of two core components: the "DAS" (digital autonomous system) and the "autonomous order picking system". The DAS autonomous factory serves as the decision-making hub, overseeing the entire operation, while autonomous order picking system and robots efficiently handle warehouse operations including material entry/exit, handling, and sorting. This integrated system enables autonomous material management functions such as inventory tracking, stock monitoring, first-in-first-out (FIFO) operations, and automated warehouse rotation.
Accurately addresses the pain points of small materials with a wide variety of types and difficult management, this solution is suitable for a variety of application scenarios, and can provide highly customized solutions based on customers' needs for warehouse automation upgrade.

Application Scenarios

High-density flexible storage and picking for small, multi-category, high-turnover materials, such as workshop-side warehouses and spare parts warehouses.

Flexible and minimal deployment

- No infrastructure: the ground is level without modification
- Quick deployment: 3-5 days

Worry-Free Service

- Enjoy lifetime worry-free digital after-sales service with wireless expansion anytime, anywhere

Space efficiency rewards

- Extremely high storage density: 20m² can accommodate more than1000 storage positions
- Ultra-fast container handling speed: 180 containers/hour with fully automated high-speed entry/exit system
- The rotary box can be mixed with large and small boxes: suitable for small parts of multiple sizes

Management Return

- Digital and transparent management of goods information: accurate and real-time traceability of goods information
- Break down information barriers between supply and demand: link the supply and demand sides, and efficiently connect production plans
- Supports integration with various external systems, including ERP, WMS, MES, and WCS.

Order Pick System ——Autonomous pick+robot transfer/pick

WAREHOUSE @ANYWHERE

Holistic Coordination | Real-Time Driving | Data Empowerment

DAS Factory Digitalization serves as the intelligent command center and decision engine for "Autonomous Order Picking System", surpassing traditional warehouse management systems. Through three core capabilities—holistic coordination, real-time execution, and data empowerment—it transforms static 3D warehouses into dynamic, responsive smart logistics hubs. DAS represents the critical leap enabling "Autonomous Order Picking System" to evolve from smart devices to digitally intelligent operations, equipping them with thinking and perception capabilities. This not only ensures efficient and stable operations for autonomous picking system themselves, but also extends their data value across the entire supply chain, becoming an indispensable digital foundation for enterprise smart manufacturing and lean logistics.

Core Value

01

The dispatching revolution from "passive execution" to "active command"

Millisecond-level task optimization
Plan the optimal path
Effectively improve work efficiency

As the command hub, DAS enables millisecond-level dynamic task planning. When massive inbound and outbound warehouse instructions surge in, DAS analyzes equipment status, locations, and task queues in real time to compute globally optimal solutions rather than local optima. This effectively prevents equipment congestion and path conflicts, ensuring absolute smoothness in warehouse "traffic" flow. By maximizing cluster coordination efficiency, it precisely matches production rhythms and achieves uninterrupted continuous operations.

02

Transparent management from "information island" to "digital twin"

Material information is visible in real time to facilitate accurate decision-making

As a digital twin platform, DAS achieves 1:1 real-time replication of the entire warehouse's operational status in the virtual environment through data acquisition. Every container's location, status (inbound, in storage, outbound pending), batch, and expiration date are clearly visible. This not only visualizes inventory management but also operational workflows, providing managers with unprecedented transparency that serves as the foundation for making precise decisions.

03

Value extension from "internal optimization" to "supply chain collaboration"

Provide deep real-time sharing of two-end information to promote supply chain collaboration and achieve win-win value.

As a bridge for supply chain collaboration, DAS effectively breaks down data barriers between demand-side entities and upstream suppliers, as well as downstream production lines. By deeply sharing data on material consumption, inventory levels, and expected deliveries, DAS empowers suppliers to "anticipate demand" and flexibly adjust their production and shipping plans. This significantly reduces the risks of inventory overstock and material shortages in autonomous order picking system, transforming these facilities from cost centers into hubs that stimulate supply chain synergy and create win-win value.

04

Smart risk control from "remediation after the event" to "prevention before the event"

Intelligent risk warning and inventory structure optimization

As an all-weather risk monitoring system, DAS features an intelligent risk control model that operates 7x24 to automatically track critical metrics like inventory age, expiration dates, and stock turnover rates for all materials. When preset thresholds are breached (e.g., nearing expiration or slow turnover), the system triggers proactive alerts instead of passive monitoring. This enables managers to intervene early, address near-expiry materials, optimize inventory structures, and transition from reactive "remediation after the event" to proactive "pre-emptive management" – effectively preventing financial losses.

Order Pick System ——Autonomous pick+manual transfer

WAREHOUSE @ANYWHERE

It consists of shelves, box carrier, multi-specification material boxes, weighing platforms, and display screens.

1 Unit

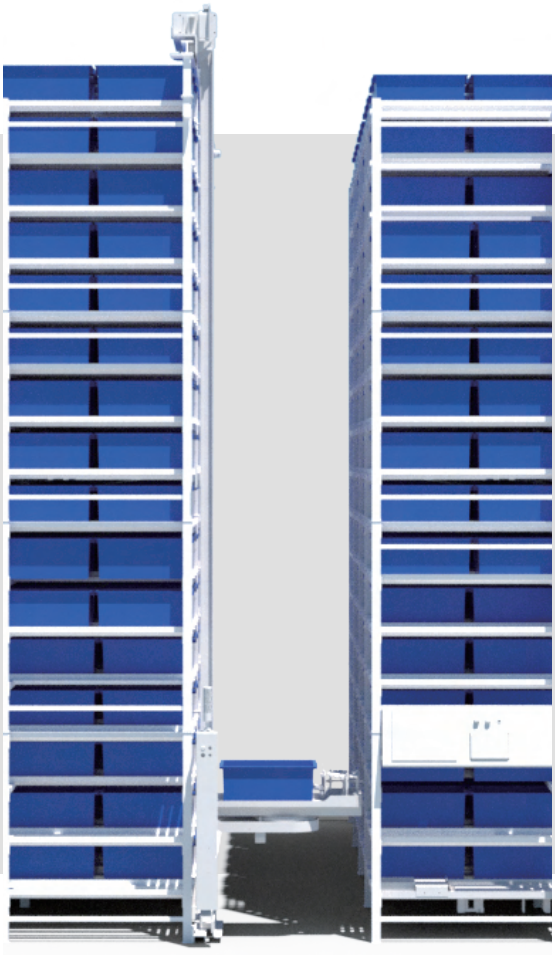
20.46m²
6.2m long × 3.3m wide
Unit area

180 boxes/h
fastest time to enter and leave the warehouse

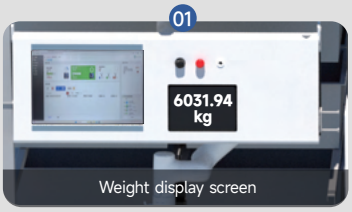
Mix large and small boxes for flexible expansion
unlimited extension according to site layout, no changes to existing site

5.5m
Standard height

1530 units
Max storage capacity

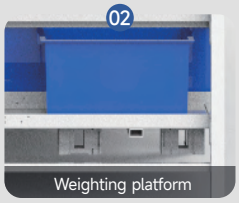


01



Weight display screen

02



Weighting platform

03

Shelves

04

Multi-specification matorialboxes

05

Box carrier

1 Unit

Small Box

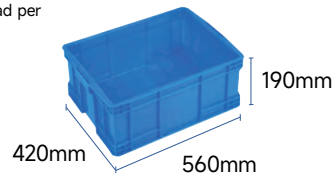
Unit storage capacity:
1530 units

Maximum load per single unit:
20kg

Large Box

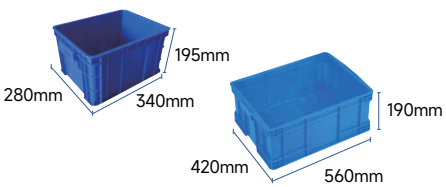
Unit storage capacity:
760 units

Maximum load per single unit:
30kg



Storage quantity

Unit storage capacity
1145 units



Order Pick System ——Autonomous pick+robot transfer/pick

WAREHOUSE @ANYWHERE

The embodied dual-arm picking robot can perform lifting, turning, bending, picking, and carrying boxes, realizing goods picking and transfering.

Order Pick System ——Autonomous pick+robot transfer/pick

WAREHOUSE @ANYWHERE

Material Box Transfer Robot XCL0051

Efficient operation

2m/s travel speed (unladen);
50kg load capacity; **5%** max gradeability

Autonomous navigation

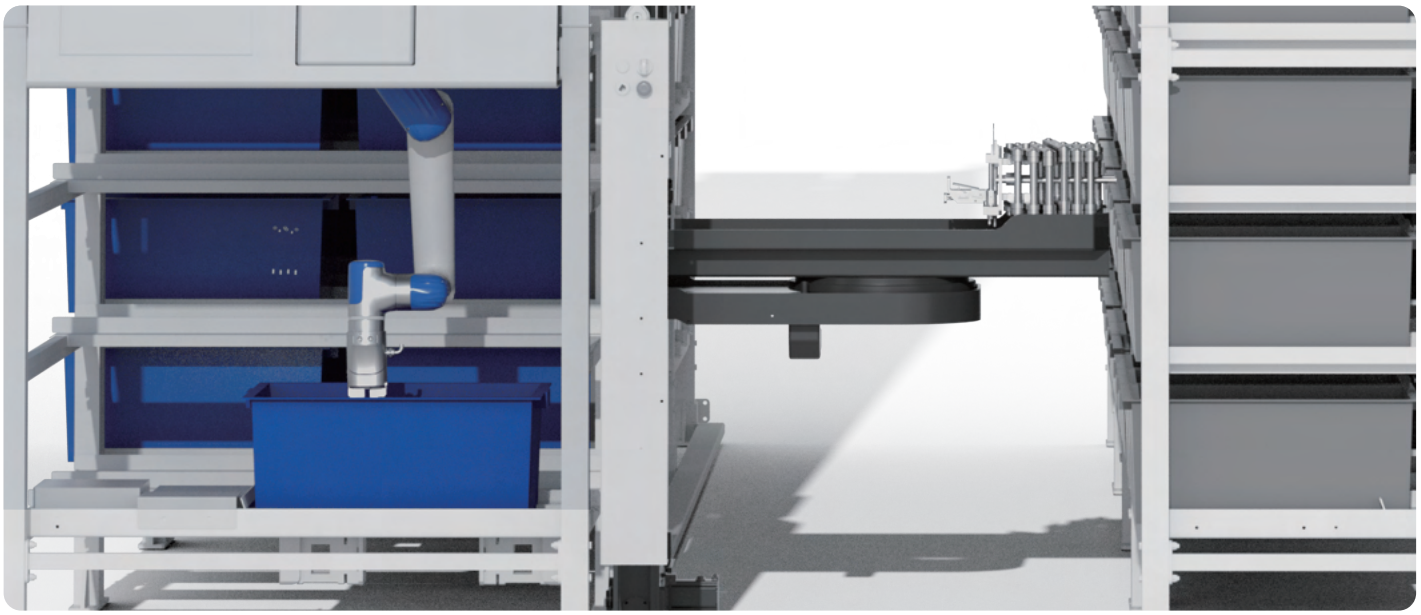
supports laser and QR code navigation, precise positioning, and flexible obstacle avoidance in complex environments

Safety and reliability

It is equipped with multiple safety protection devices such as robot obstacle avoidance and emergency stop to ensure the safety of human and machine.

Order Pick System

Autonomous Order Pick System
Autonomous pick+robot pick



Work flow

After the goods are released from the warehouse, the robotic arm picks the required parts and goods.

Autonomous Order Pick System
Autonomous pick+robot transfer

Work flow

Embodied Single-Arm Picking and DeliveryOperation Process: After the material box is released from the warehouse, the single-arm robot picks the required goods and transports them to the destination.