

HUAHENG

华外慧中，持之以恒
Enduring Excellence Pursuing



HUAHENG
华恒智能物流
HUAHENG INTELLIGENT LOGISTICS



华恒智能物流系统
HUAHENG Intelligent Logistics System

打造数字化，智能化的灯塔工厂
For Digital, Intelligent Lighthouse Factory

长沙华恒机器人系统有限公司
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华恒物流事业部
HUAHENG LOGISTICS DIVISION

华恒物流事业部致力于智能物流仓储和智能制造柔性化生产线的开发、设计、制造与服务，为客户提供一体化解决方案。产品涵盖：智能立体仓库、智能运载AGV小车、机器人、RV减速器、智能制造相关软件等。帮助企业突显核心优势，打造数字化、智能化的灯塔工厂，推动中国智能制造高质量发展。

华恒物流事业部的中部研发、设计、生产、销售服务中心—长沙华恒机器人系统有限公司坐落于湖南长沙市浏阳高新技术开发区，占地3万平方米，员工近300人，各科专业技术人员近100人，拥有激光、等离子切割机、机器人自动焊接设备、数控剪折板机、各种数控加工中心等上百台专业生产设备，累计申请知识产权100余项，累计获得授权91项，其中发明专利2项、实用新型专利53项，外观专利1项，软件著作权35项，另有软件产品证书6个。

华恒物流事业部的东部研发、销售服务中心—昆山华恒工程技术中心有限公司坐落于美丽的江苏省昆山市，拥有着具备国际先进水平的实验仪器及测试设备，先后承担并完成了国家863计划、国家重大科技专项、国家火炬计划、国家重点新产品计划等一批国家级的研发项目。

昆山光腾智能机械有限公司以新时代工匠之心，为智能装备打造核心部件—RV减速器，广泛适用于工业机器人及周边设备、自动化装备、RGV、AGV、高密度智能仓储设备、精密医疗设备等各类服务机器人产品。经过八年潜心研究和技术攻关、上亿元的研发投入、百万小时等运转测试、近万台的应用累计，产品可靠性、稳定性与国际接轨。目前装机容量超过6000台套，最常使用期限超过6年，积累了大量应用实践经验。

HUAHENG Logistics Division is committed to the development, design, manufacturing and service of intelligent AS/RS and logistics, intelligent manufacturing flexible production lines, providing integrated solutions to valuable customers. Our products include, intelligent AS/RS, intelligent AGV system, robotics system, RV reducer, intelligent manufacturing related software, etc. We help our customers highlight their core-value advantages, build digital and intelligent Lighthouse Factories, and promote the high-quality development of China's intelligent manufacturing.

The R&D, design, production, sales and service center under HUAHENG Logistics Division – Changsha HUAHENG Robot System Co., Ltd. is located center of China, in Liuyang High-tech Industrial Development Zone, Changsha City, Hunan Province. It covers an area of 30,000 square meters and has nearly 300 employees and there are nearly 100 professional and technical personnel. With hundreds of professional production equipment such as laser, plasma cutting system, robot automatic welding system, CNC shearing and folding machines, various CNC machining centers, etc. We have applied for more than 100 intellectual property rights and obtained a total of 91 authorizations, including 2 invention patents, 53 utility model patents, 1 appearance patent, 35 software copyrights, and 6 software product certificates.

The R&D, sales and service center of HUAHENG Logistics Division—Kunshan HUAHENG Engineering Technology Center Co., Ltd. is located eastern of China, in the beautiful city of Kunshan, Jiangsu Province. We have internationally advanced experimental equipment and test equipment, and has undertaken and completed a number of national-level R&D projects such as “The National 863 Plan”, The National Major Science and Technology Project”, “The National Torch Plan”, and The National Key and New Product Plan”.

Kunshan Quanta Machinery Co., Ltd., with the heart of new-era craftsmen, creates the core component for intelligent equipment – precision RV reducer, which is widely used in industrial robots and peripheral equipment, automation equipment, RGV, AGV, high-density intelligent AS/RS equipment, precision medical equipment, and various service robot products. After eight years of concentrated research and technological breakthrough, hundreds of millions of R&D investments, millions of hours of operational testing, and nearly 10,000 applications accumulated, product reliability and stability are in line with international standards. At present, the installed capacity exceeds 6000 sets, the most common use period exceeds 6 years, and a large amount of practical experience has been accumulated.



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PREFACE

华恒秉承“华外慧中，持之以恒”的精神及理念，通过不断创新，让企业、合作伙伴、客户与员工共同成长、持续发展，打造一个平等、公平、诚信、多方共赢的生态圈。

HUAHENG adheres to the spirit and philosophy of "Enduring Excellence Pursuing", through continuous innovation for company, partners, customers and employees to grow and constantly developing together, to build an equal, fair, honest and win-win ecosystem.

昆山华恒最早的厂房
KUNSHAN HUAHENG's earliest Factory



Since 1995
江苏·昆山
JIANGSU·KUNSHAN

昆山华恒焊接设备技术有限公司成立于江苏昆山南港镇，公司主营业务为焊接自动化装备的研发、生产和销售。

Kunshan HUAHENG Welding Equipment Technology Co., Ltd. was established in Nangang Town, Kunshan, Jiangsu. The company's main business is the research and development, manufacture and sales of welding automation equipment.



昆山开发区留学人员创业园
工厂建成投入使用

The Pioneer Park for Overseas Students in Kunshan Development Zone was completed and put into use.

2001



昆山华恒吴淞江路总装调试一期工厂建成投入使用

The Pioneer Park for Overseas Students in Kunshan Development Zone was completed and put into use.

2009

长沙华恒租赁厂房
CHANGSHA HUAHENG's rental factory



长沙华恒公司成立

Changsha HUAHENG Robot System Co., Ltd. was established

2011



总装厂二期建成投入使用、光腾工厂建成投入使用

Assembly Plant - Phase II was completed and put into use. The Quanta Machinery plant was completed and put into use.

2015



长沙华恒搬入新的研发办公大楼
New R&D building put into use.

2018

2021

长沙华恒二期，离散型制造业智能制造新标杆

Changsha HUAHENG's new plant self-built plant - Phase II, new benchmark of discrete intelligent manufacturing



2016

长沙华恒新厂建成投产

Changsha HUAHENG's new plant was completed and put into use.



自建一期厂房

Changsha HUAHENG's new plant self-built plant - Phase I

2016

印度工厂、马来西亚工厂投入使用

Indian Plant, Malaysian Plant put into use.



2008

完成股份制改造更名为昆山华恒焊接股份有限公司

Completed the shareholding system transformation and changed the name to Kunshan HUAHENG Welding Co., Ltd



2010

昆山清华科技园华恒工程技术中心、徐州华恒建成投入使用

Huaheng Engineering Technology Center in Kunshan Tsinghua Science Park, Xuzhou HUAHENG Robotics Co., Ltd. was completed and put into use.



1998

昆山华恒路100号研发楼和厂房建成投入使用

The R&D building and factory building at No. 100 Huaheng Road, Kunshan were completed and put into use.



发展历程

Development History





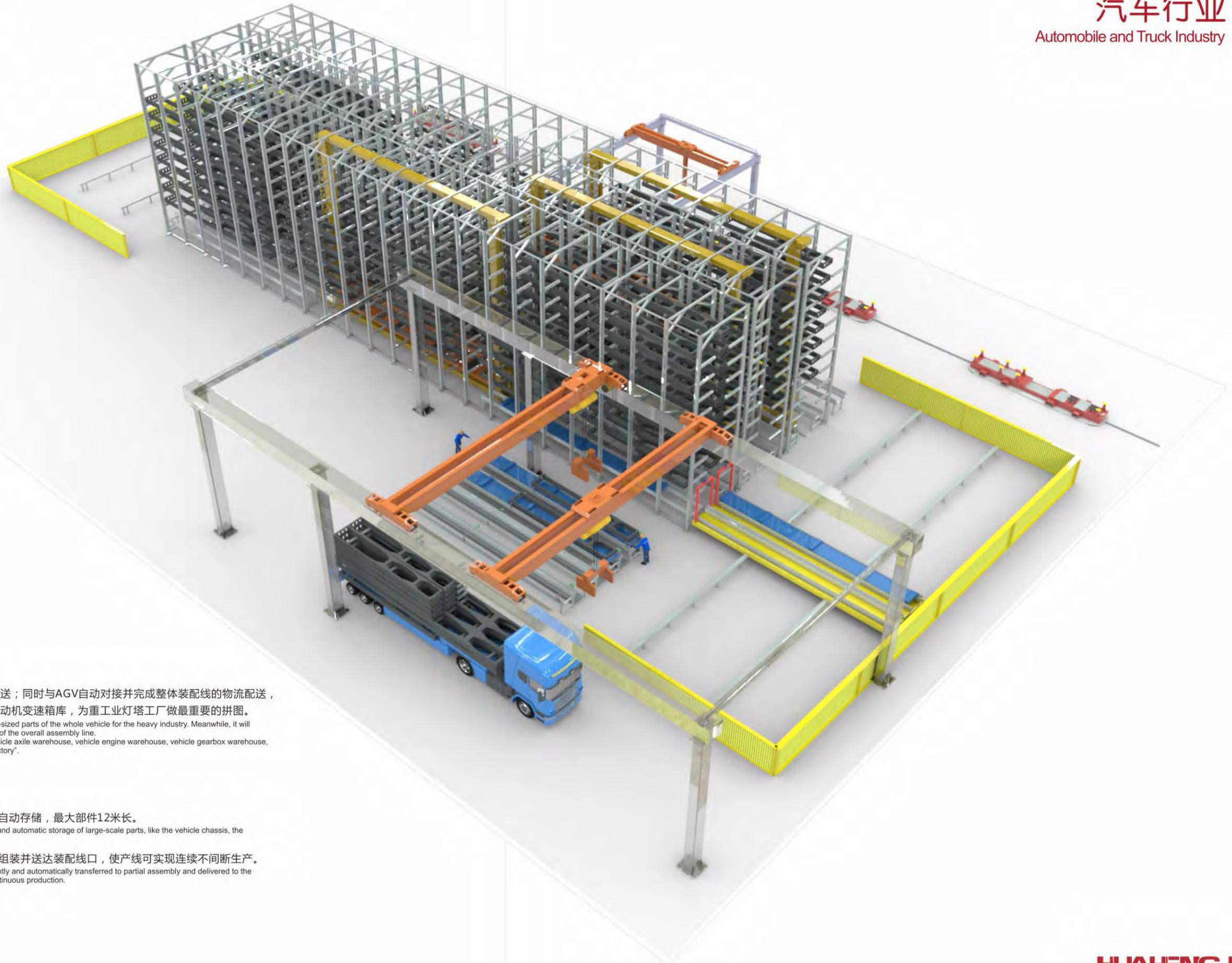
为行业打造多种解决方案，实现了从导线桶到开线机、端子盘到绕线工位、成品到打带缠膜入库等全流程自动化。
To bring various solutions for the industry, and realize the automation of the entire process, such as from the wire barrel to the wire-stripping machine, terminal disk to cable coiling station, finished product to strapping and wrapping, warehousing etc.

特点 / Features

1. 采用将线边仓改为上部存储下部开线工位的方式节省了大量的人员搬运。
Change side-line warehouse allocation, use upper-level for storage and lower-level for wire stripping for the convenience of minimize manual material moving.
2. 引入在线叫料系统，配料采用AGV自动完成。
Introduce the online material system and use AGV system for material distribution automatically.
3. 利用导线桶回库称重系统，记录每一环节生产所用线的重量，更精确掌握生产用料，做好产品溯源。
Use the weighing system for wire barrel which return to the warehouse to record the weight of the wire used in each production cycle, accurately record the production materials and useful for product traceability.





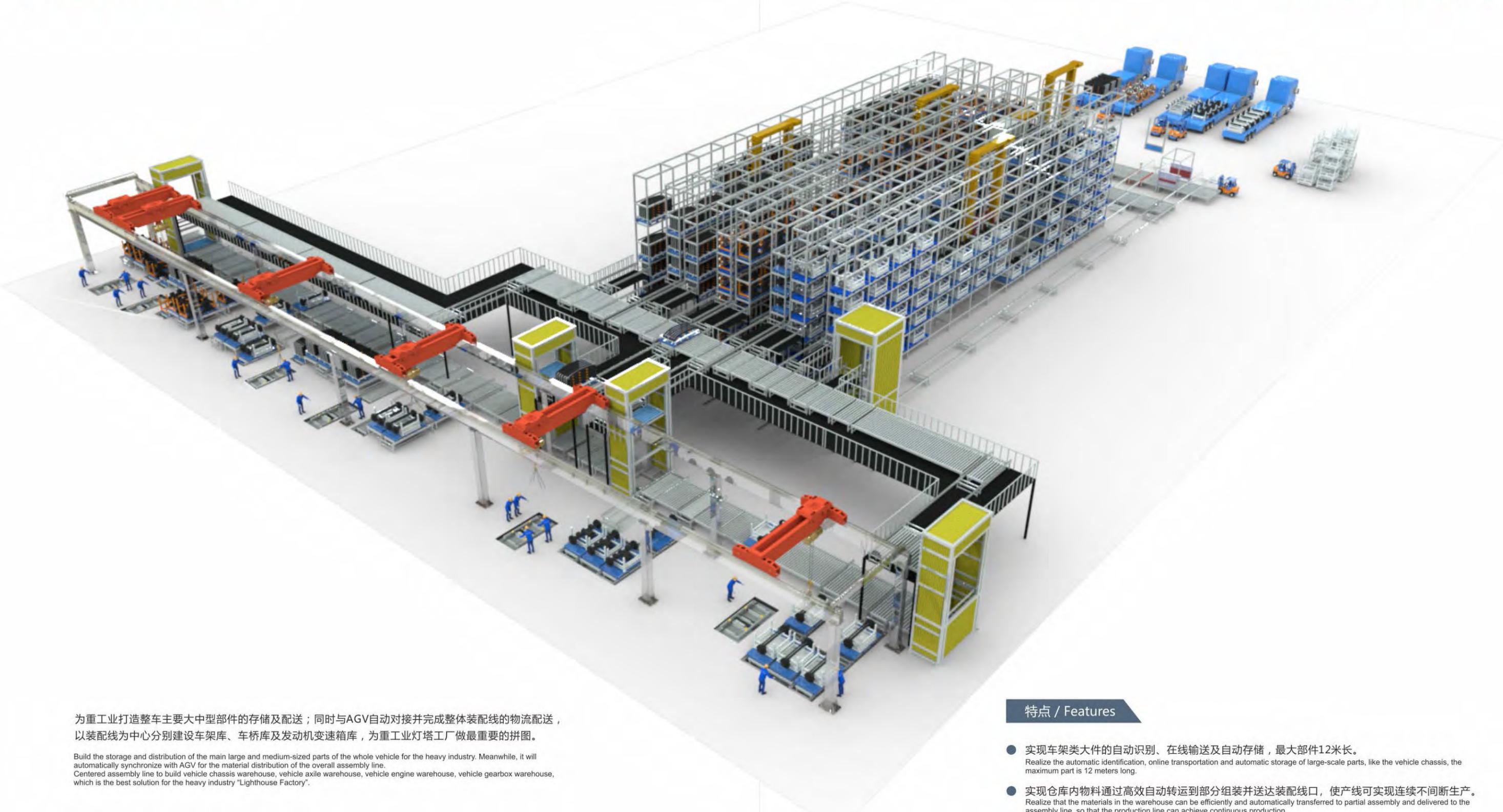


为重工业打造整车主要大中型部件的存储及配送；同时与AGV自动对接并完成整体装配线的物流配送，以装配线为中心分别建设车架库、车桥库及发动机变速箱库，为重工业灯塔工厂做最重要的拼图。

Build the storage and distribution of the main large and medium-sized parts of the whole vehicle for the heavy industry. Meanwhile, it will automatically synchronize with AGV for the material distribution of the overall assembly line. Centered assembly line to build vehicle chassis warehouse, vehicle axle warehouse, vehicle engine warehouse, vehicle gearbox warehouse, which is the best solution for the heavy industry "Lighthouse Factory".

特点 / Features

- 实现车架类大件的自动识别、在线输送及自动存储，最大部件12米长。
Realize the automatic identification, online transportation and automatic storage of large-scale parts, like the vehicle chassis, the maximum part is 12 meters long.
- 实现仓库内物料通过高效自动转运到部分组装并送达装配线口，使产线可实现连续不间断生产。
Realize that the materials in the warehouse can be efficiently and automatically transferred to partial assembly and delivered to the assembly line, so that the production line can achieve continuous production.



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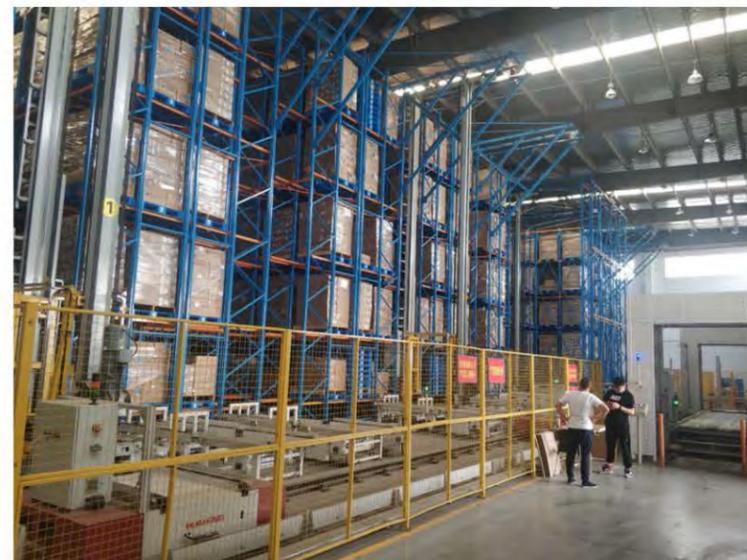
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为第三方电子物流行业，首个实现AGV货到人拣选；集散件仓及整托仓、恒温恒湿仓一体的综合性分拣拣选组盘项目。
For the third-party electronic logistics industry, it is the first to realize AGV goods-to-person for picking; a comprehensive sorting, picking and grouping project integrating for bulk material warehouses, whole pallets warehouse, and constant temperature and humidity warehouses.

特点 / Features

1. 实现外来料整托的自动叠母托入库。
Realize the automatic stacking of incoming materials into the warehouse.
2. 重载AGV与出入库系统堆垛机等实现自动对接。
The automatic docking of heavy-duty AGV and stacker of storage system etc.
3. 实现散件拆零、拣选、包装及整托拆托、拼托、复核等全作业流程。
Realize the whole operation process of dismantling, sorting, packaging and whole pallet dismantling, palletizing, and reviewing etc.



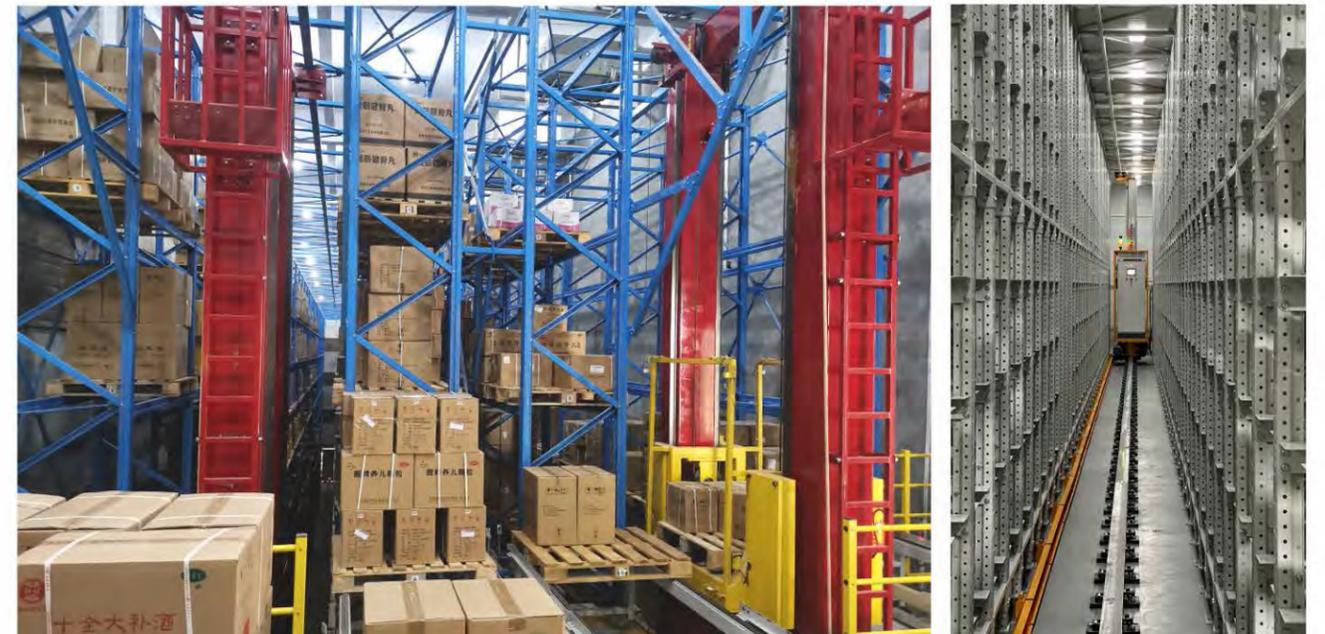


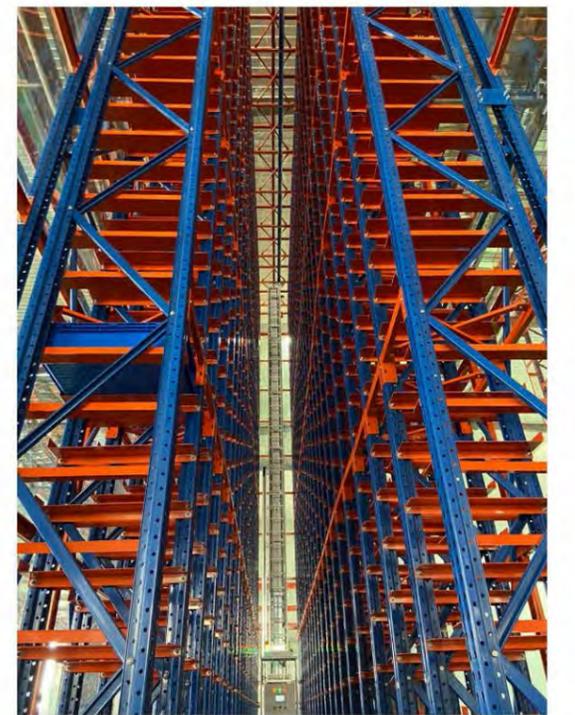
为医药生产及物流打造整体解决方案，实现产品的整托入库、出库、拆垛及散件的入库、出库、拆零、拣选、复核打包及分拣等业务。

To create an overall solution for pharmaceutical production and logistics, to realize the whole pallet warehouse, outgoing, de-stacking and bulk material warehouse, outgoing, dismounting, picking, review, packaging and sorting operations of products and other operations.

特点 / Features

1. 实现多楼层多业务场景同时作业，从订单发起到达分拣口全流程高效不下线。
Realize the simultaneous operation of multi-floor business operation scenarios, from order initiation to arrival at the sorting gate, the whole process is high efficient without offline process.
2. 产品及料箱信息在线全程跟踪追溯，确保订单拣选无错少错。
Product and material box information is tracked and traced online throughout the entire process to ensure that order picking is correct and error-free.







为航天军工等部门提供智能化解决方案，为航天军工等装备基地提供完善的仓配一体化服务，引入智能化及信息化技术，做到及时配送、更加高效的拣配。

Provide intelligent solutions for the aerospace and military industry and other departments, and to provide complete warehouse and distribution services for the aerospace and military industry and other equipment bases. Introducing intelligent and information technology to achieve timely delivery and more efficient picking solutions.

特点 / Features

1. 记录每一个零件入库时间及参数，及时通知整体待组装零件的齐套性，管理人员可更加合理的安排装配线的顺序，达到柔性化生产。
Record the warehouse entry time and parameters of each material, and promptly notify the completeness of the assembled parts for the convenience of the management staff to arrange the assembly line more reasonably, which is to achieve flexible production.
2. 通过WMS和MES的自动数据传输，再通过ACS系统自动调配AGV将物料搬运到指定站台，实现工位配送自动化。
Go through the automatic data transmission of WMS and MES, and AGV will deliver the materials to the designated station through the automatic ACS system to achieve the automation of station distribution.







为印刷行业打造整厂自动化仓配一体化方案：以各生产线为核心，打造各类型中心仓，可分为原材料仓、辅料仓及成品仓，配合空中物流线，到达各个生产线位置。

Create an integrated solution for the entire factory automatic warehouse and distribution for printing industry. Centered each production line to create various types of central warehouses, which can be divided into raw material warehouses, supplementary material warehouses and finished product warehouses, coordinate with the air logistics line to reach each production line position.

特点 / Features

1. 以空中物流线的配送方式将整厂原材料、辅料及成品向各个车间自动运转配送。
Automatically transfer and distribute the whole plant's raw materials, auxiliary materials and finished products to each workshop by the air logistics line.
2. 通过WMS等信息化系统让印刷行业可以做到从原材料到生产过程及成品的全过程追溯。
Go through WMS and other informatization in the printing industry to achieve the whole process traceable from raw materials to production.

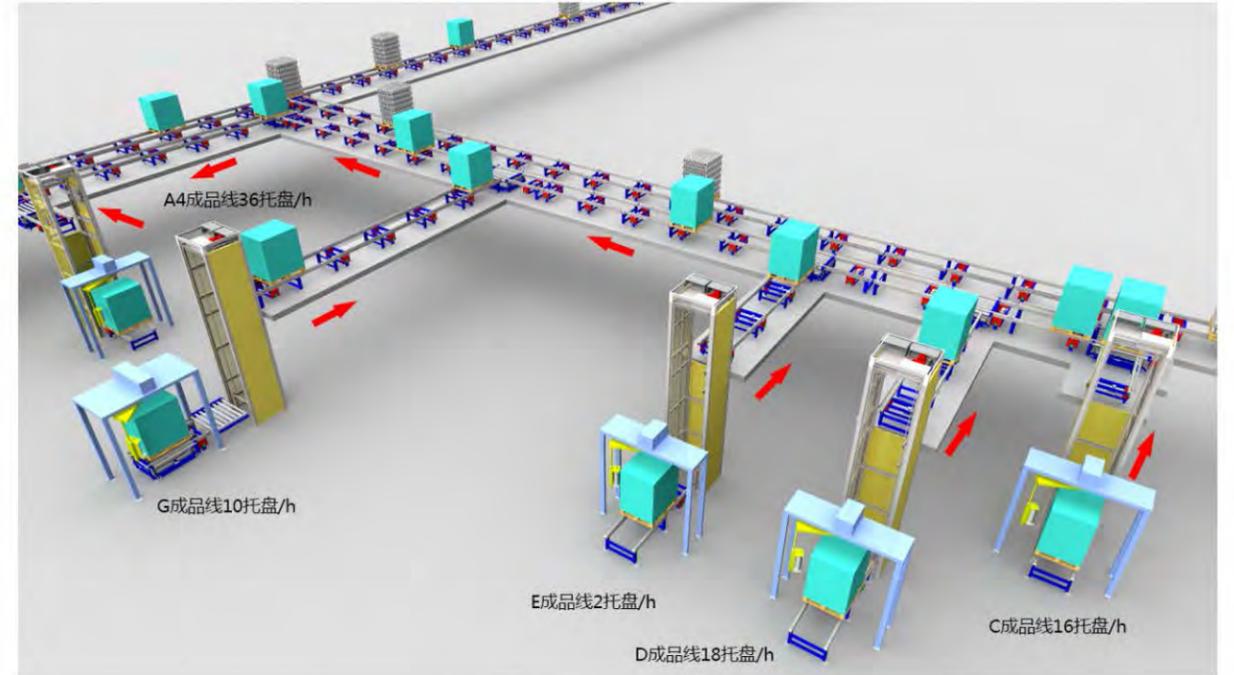


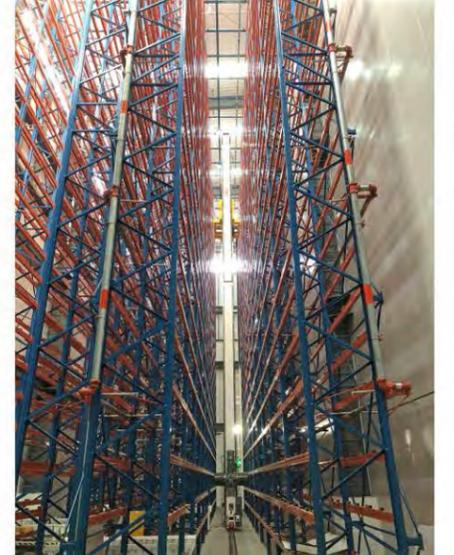


为农业打造整体的种养殖自动化存储及恒温恒湿解决方案，为农业昆虫及蔬菜种养殖提供更科学更营养的产品服务。
Create an overall planting and breeding automated storage and constant temperature and humidity solution for agriculture, and provide service for more scientific and more nutritious products in agricultural insects and vegetable breeding.

特点 / Features

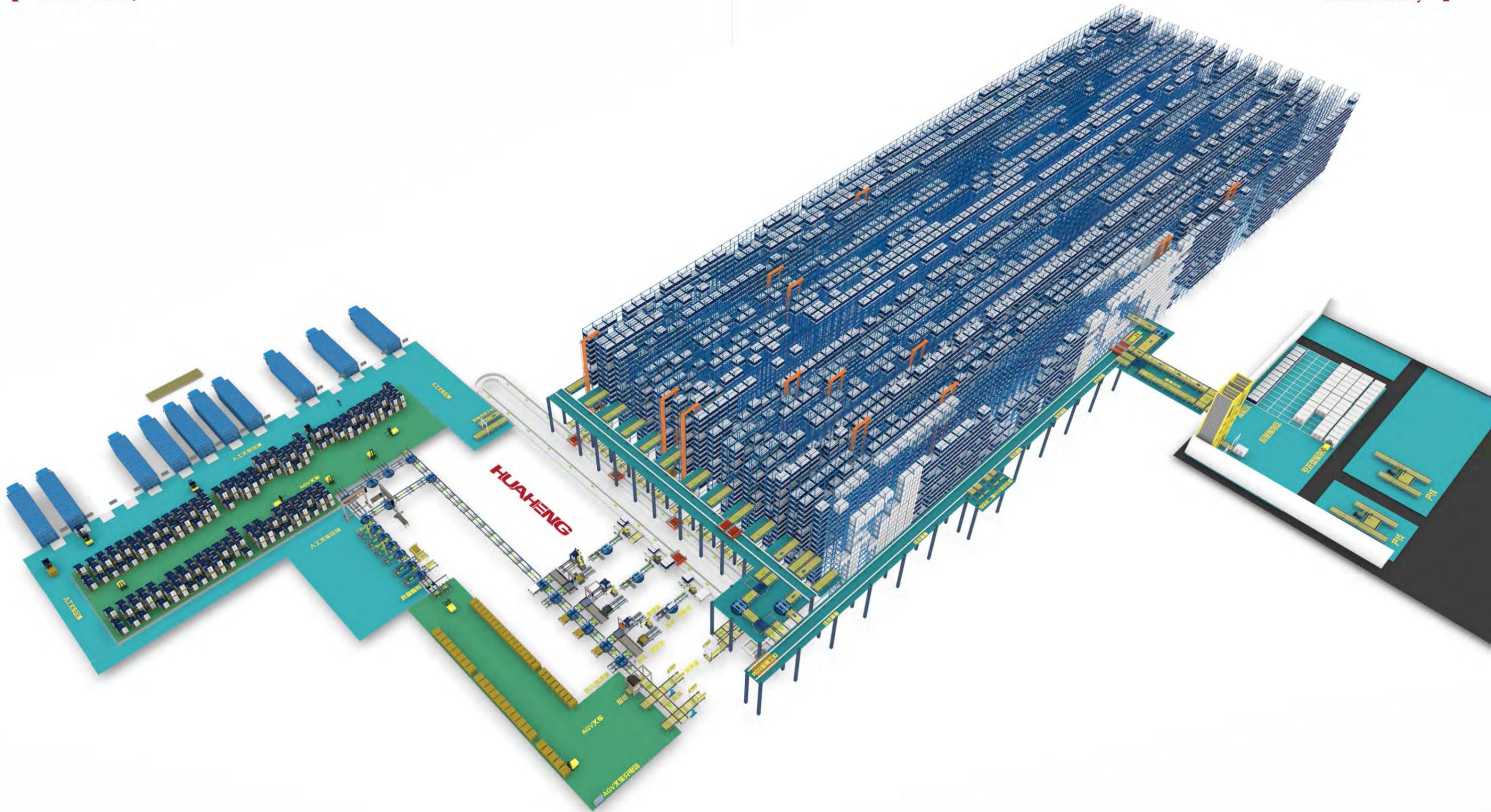
1. 结合种养殖的需求与特点，以密集库的存储理念，用定制穿梭板与堆垛机来实现空间高效存储。
Combining the needs and characteristics of planting and breeding, with the concept of dense storage, use customized shuttle trolley/plate and stackers to achieve large-capacity storage.
2. WMS系统记录昆虫及蔬菜的生长情况及浇水加肥等生命周期管控，逐步引导实现农业生产无人化。
Use the WMS system records the growth of insects and vegetables for watering and fertilizing and other life cycle control, and gradually guides the realization of unmanned agricultural production.



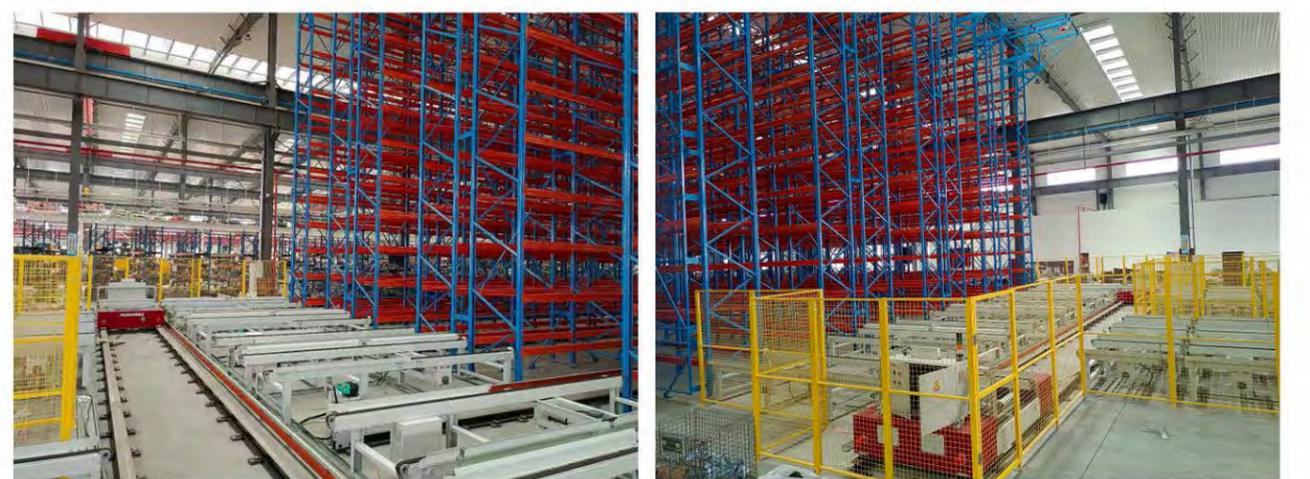




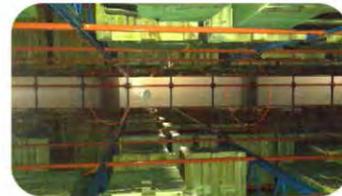
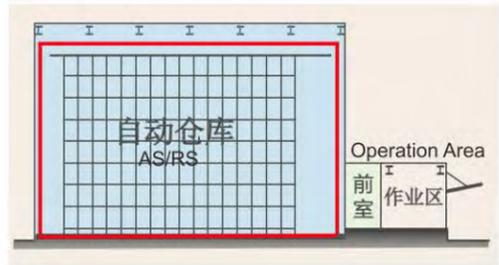












冷库顶部风管
Warehouse Top Air duct



制冷系统
Cooling System



辅助加热控制柜
Heating Control Cabinet



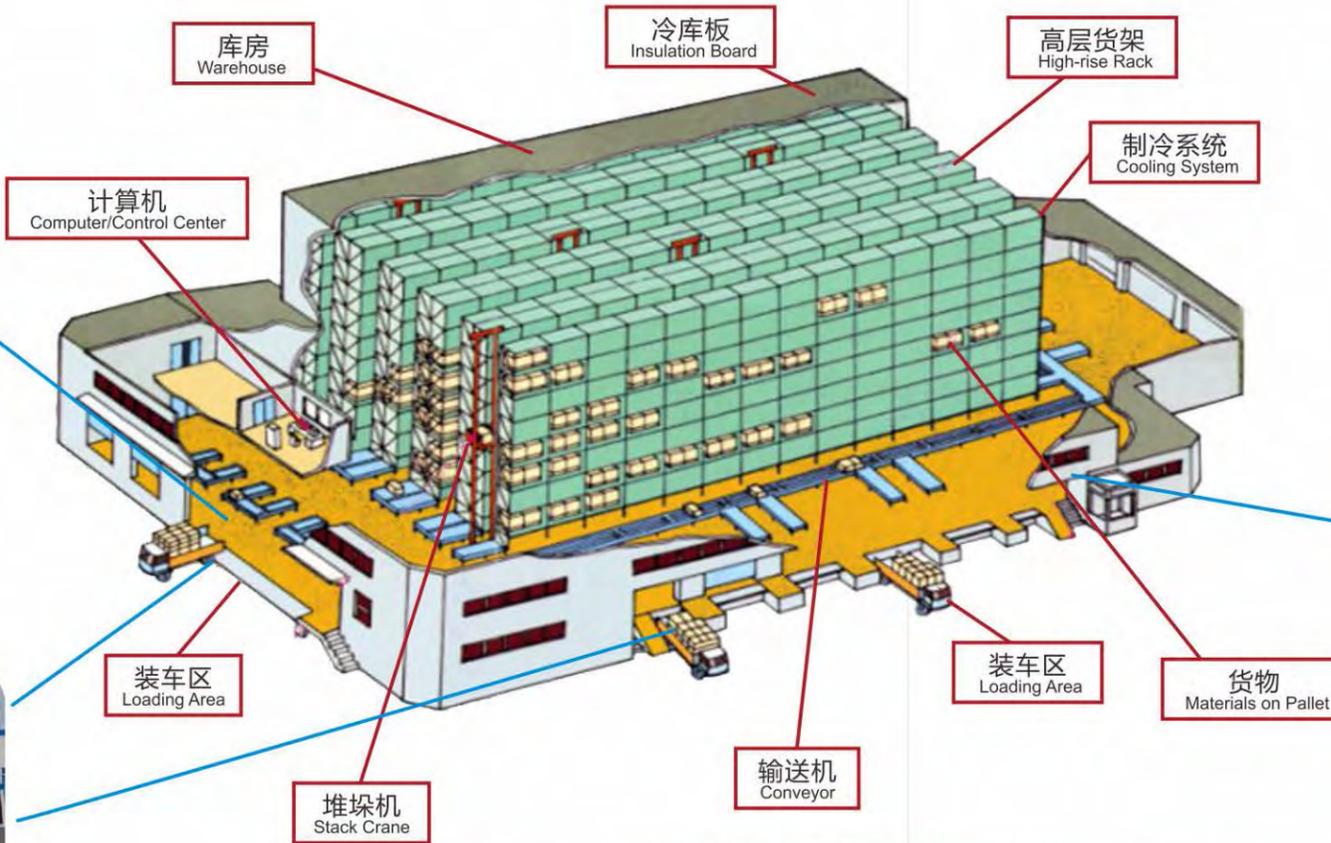
抗低温输送系统
Low Temperature Resistant Conveying System



内冷媒配管
Internal Refrigerant Piping



高度制震
Variation Elimination Control



冷库作业区
Operation Area



封闭式月台
Enclosure dock



冷库作业区
Operation Area



仓配信息协同化
Collaboration of Warehousing and Distribution Information

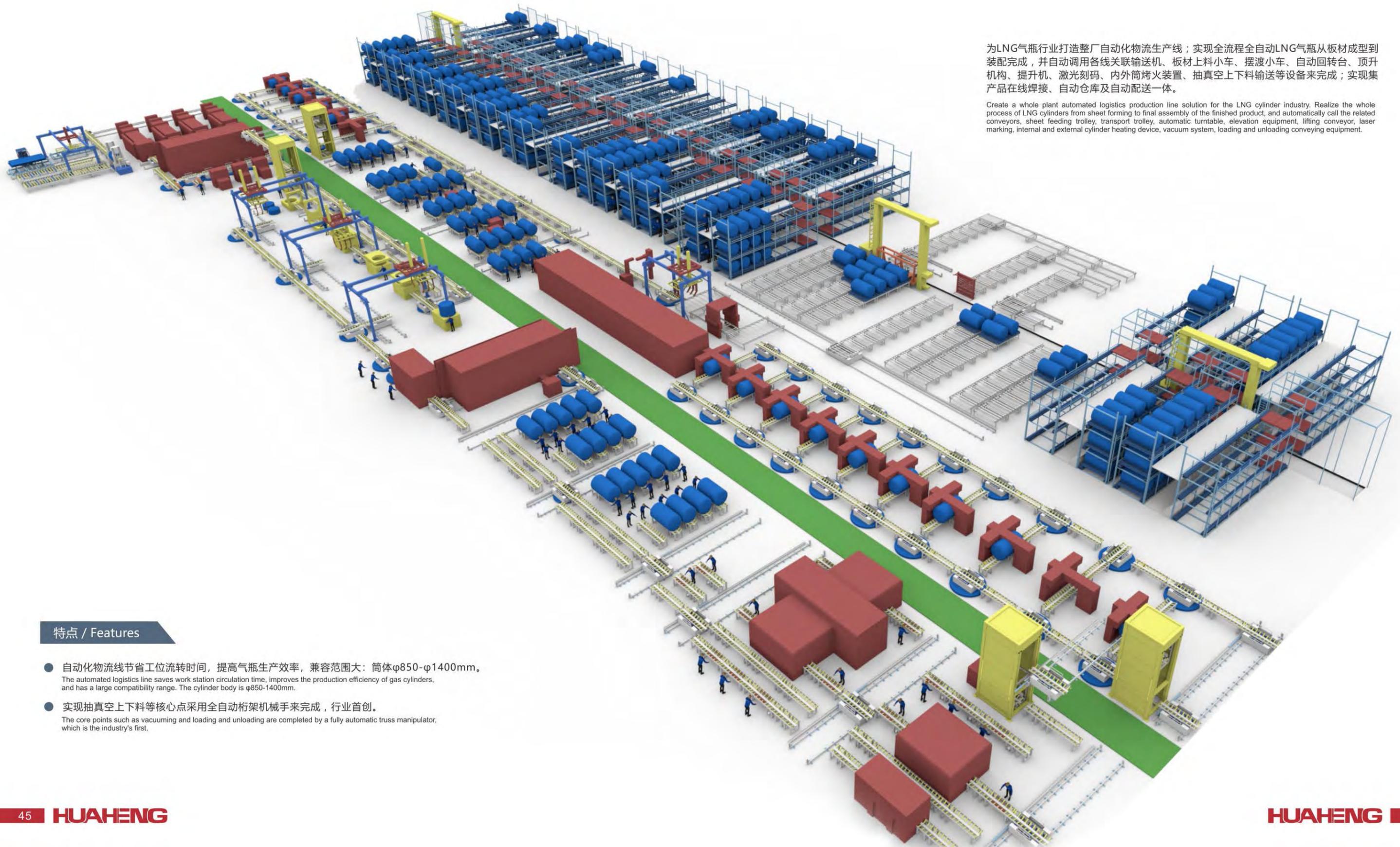
任务安排前置化
Pre-arrangement of Tasks

人员作业合理化
Rationalization of Personnel Operations

月台能力提升
Dock Capacity Improvement

司机等待时间减少
Drivers Waiting Time Minimization





为LNG气瓶行业打造整厂自动化物流生产线；实现全流程全自动LNG气瓶从板材成型到装配完成，并自动调用各线关联输送机、板材上料小车、摆渡小车、自动回转台、顶升机构、提升机、激光刻码、内外筒烤火装置、抽真空上下料输送等设备来完成；实现集产品在线焊接、自动仓库及自动配送一体。

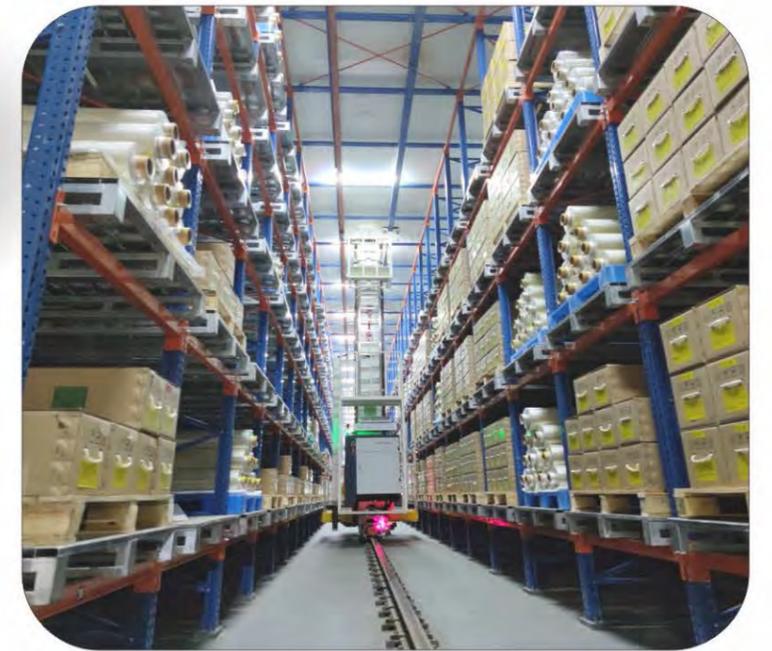
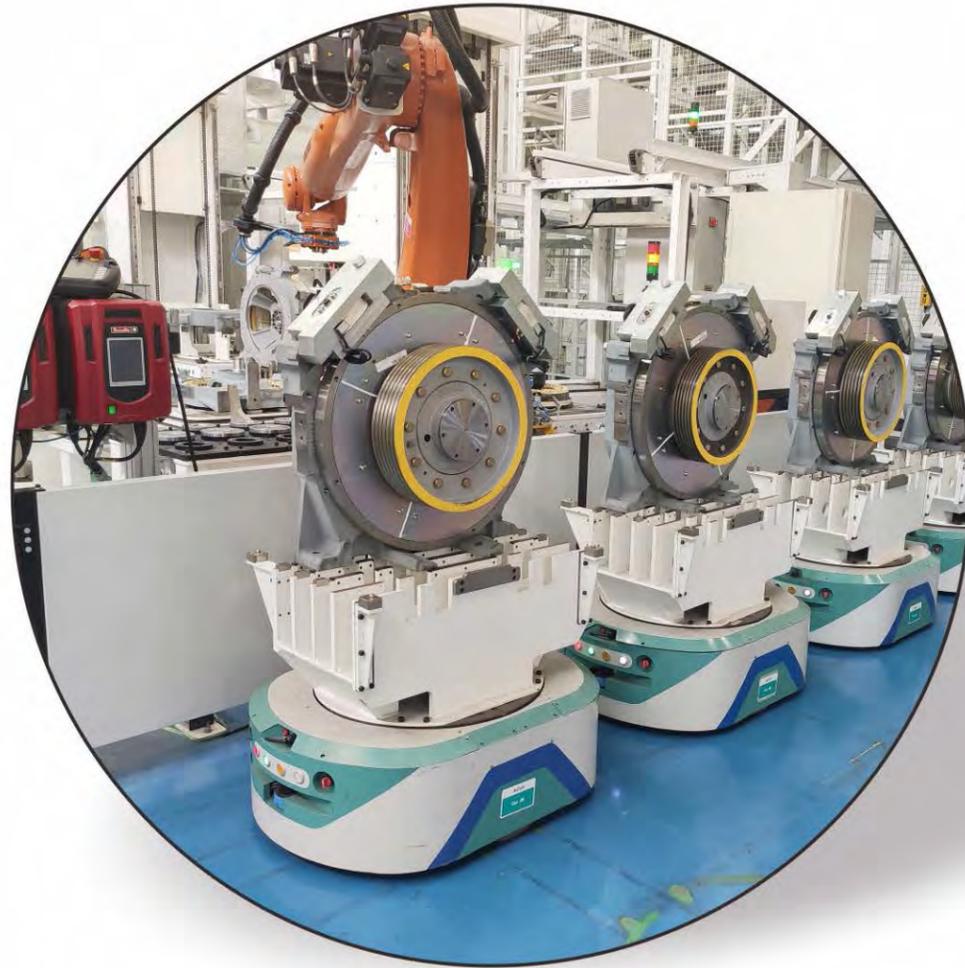
Create a whole plant automated logistics production line solution for the LNG cylinder industry. Realize the whole process of LNG cylinders from sheet forming to final assembly of the finished product, and automatically call the related conveyors, sheet feeding trolley, transport trolley, automatic turntable, elevation equipment, lifting conveyor, laser marking, internal and external cylinder heating device, vacuum system, loading and unloading conveying equipment.

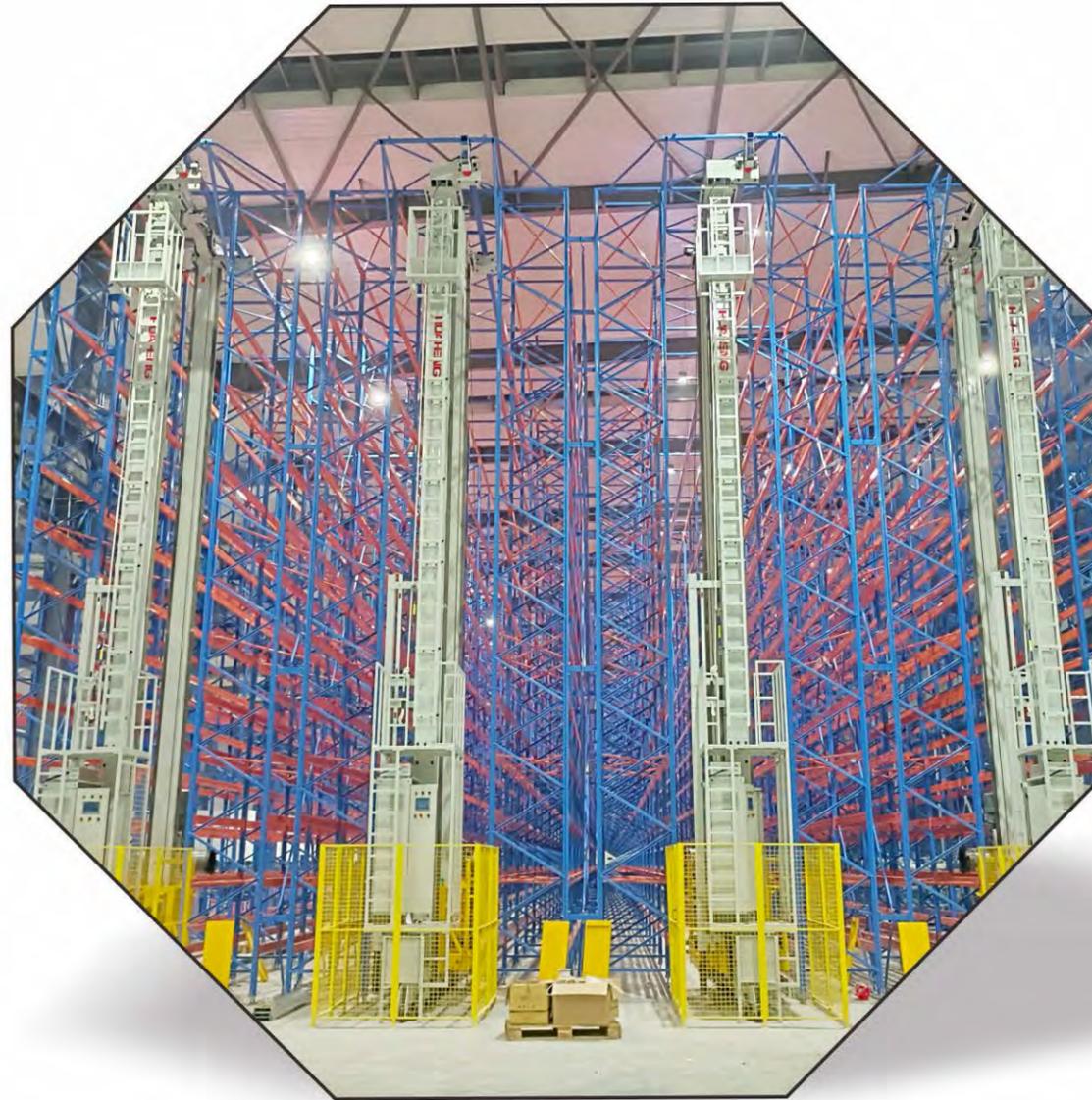
特点 / Features

- 自动化物流线节省工位流转时间，提高气瓶生产效率，兼容范围大：筒体 $\phi 850-\phi 1400\text{mm}$ 。
The automated logistics line saves work station circulation time, improves the production efficiency of gas cylinders, and has a large compatibility range. The cylinder body is $\phi 850-1400\text{mm}$.
- 实现抽真空上下料等核心点采用全自动桁架机械手来完成，行业首创。
The core points such as vacuuming and loading and unloading are completed by a fully automatic truss manipulator, which is the industry's first.











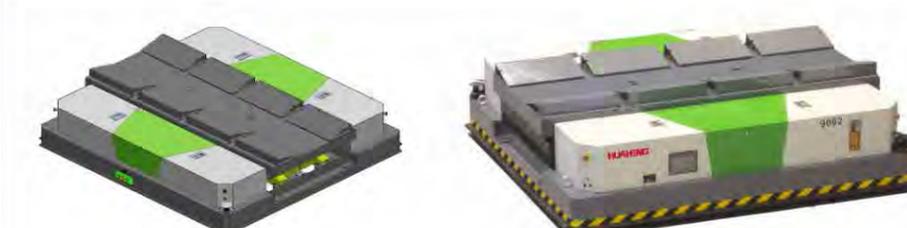
华恒AGV小车（木牛流马）标准车型采用双轮差速驱动；可配合不同车载工装适用于各个行业；小车具备自动、半自动、手动操作；安全性能高，具备多重安全防护措施；利用5G技术，可实现标准车型多车可靠同步，满足各种非标应用。

HUAHENG standard AGV (Automated Guided Vehicle) use of two-wheel differential drive, and compatible with different vehicle-mounted jigs and fixtures for various industries. It can be used with different vehicle-mounted jigs and fixtures to realize object identification and in-position monitoring; walking with high accuracy; the AGV has automatic, semi-automatic and manual operation modes, which is for various different applications, high safety and has multiple safety protection. Introducing 5G technology for multiple standard AGV reliable synchronization to meet various non-standard application.



技术参数 / Specifications

	项目 Projects	基本参数 Basic Parameter		项目 Projects	基本参数 Basic Parameter	
基本参数 Basic Parameter	外形尺寸 Dimension	783*582*300~1000*805*305mm	电池参数 Battery Parameter	电池电压 Voltage	48V	
	旋转直径 Rotation Diameter	810-1000mm		工作时间 Working Hours	8h	
	自重 Weight	120-260kg		充电时间 Charging Time	1.5h	
	有效顶升载荷 Jacking Payload	100-1000kg		电源供电方式 Power Supply Mode	自动/手动充电 Automatic/Manual Charge	
	有效牵引载荷 Towing Payload	300-1500kg	安全性能 Safety Performance	数据通讯方式 Communication Mode	Wi-Fi/5G	
	顶升高度 Jacking Height	60-100mm		操作模式 Operation Mode	程序控制/人工点动控制 Programmable / Manual Operation	
	爬坡能力 Climbing Capacity	< 3°		智能避障 Intelligent Obstacle Avoidance	激光避障 Laser Detection Obstacle Avoidance	
	导引方式 Guide Mode	二维码/磁条/激光 QR-Code/Magnetic Strip/ Laser		急停按钮 Emergency Stop	前后急停按钮 Front and Back Emergency Stop Button	
运行参数 Motion Parameter	移动方式 Drive Mode	双轮差速驱动 Two-wheel Differential Drive	声音交互 Voice Interaction	具备运行提醒功能 Voice Caution in Motion		
	行走速度 Motion Speed	0-90可调m/min 0-90mm/min, adjustable		显示 Display	指示灯显示+系统软件状态显示 Light Indicator Display + Status Display in System Software	
	行走加速度 Motion Acceleration	0.6m/s ²	其他 Others		可远程自动断电 Remote Power Cut-off Automatically	
	托盘升降速度 Pallet Jacking Speed	0-25可调mm/s 0-25mm/s, adjustable				
	定位精度 Positioning Accuracy	磁条：±10mm、二维码：±5mm Magnetic Strip:±10mm, QR-Cod:±5mm				

产品图片 Product image	
额定负载能力 Rated load capacity	10T
机身形式 Machine form	板材焊接成型 Plate welding forming
外形尺寸 Dimension	6000×2500*2500mm 以实际设计、会签图纸为准 / Based on actual design and countersigned drawings
悬挂方式 Suspension Mode	背负托举物料 Carrying and lifting materials
悬挂行程 Suspension stroke	±20mm 地面差吸收能力 / Ground differential absorption capacity
举升行程 Lifting stroke	400mm
轮系形成 Formation of gear trains	差速驱动单元 Differential drive unit
爬坡能力 Climbing Capacity	3°
最小转弯半径 minimum turning radius	0
接触防撞装置 Contact anti-collision device	车身四周设有防撞触边 There are collision resistant edges around the vehicle body
激光雷达防撞装置 LIDAR anti-collision device	车身对角设有激光防撞传感器装置，能起到非接触式防撞的作用 Laser anti-collision sensor device is installed on the diagonal of the vehicle body, which can play a non-contact anti-collision role
激光雷达数量 Number of LIDARs	4 四面放置 / Four sided placement
激光雷达探测距离 Lidar detection range	4m
导航方式 Navigation method	激光导航 Laser navigation
AGV磁导航定位精度 AGV magnetic navigation positioning	位置±10mm, 角度±0.6° Position ± 10mm, angle ± 0.6°
电池 Battery	磷酸铁锂电池48V300AH Lithium iron phosphate battery 48V300AH
满充时间 Full charge time	约2.5h About 2.5h
充电方式 Charging method	自动充电桩+外部拖缆供电（预留） Automatic charging station+external streamer power supply (reserved)
续航能力 Endurance	> 4h 根据工作制 / According to work schedule
供电输入 Power supply input	AC220V
适应的地形 Adapted terrain	室内、室外的自流平、混凝土路面 Indoor and outdoor self leveling, concrete pavement
控制方式 Control mode	上位机通信指令控制、遥控控制兼容 Host computer communication command control and remote control compatibility
吊装装置 Lifting device	侧吊环 Side lifting ring
工作环境条件 Working environment conditions	温度-10~45℃；相对湿度<95%； Temperature -10~45℃; Relative humidity<95%;
储存环境条件 Storage environment conditions	温度-15~50℃；相对湿度<95%； Temperature -15~50℃; Relative humidity<95%;

AGV无人叉车

AGV unmanned forklift

RGV小车

RGV System

产品图片 Product image				
型号系列 Model series		堆高叉车CD2系列 Stacking forklift CD2 series	搬运叉车CB2系列 Handling forklift CB2 series	前移式叉车CQ2系列 Forward moving forklift CQ2 series
基本参数 Basic parameters	外形尺寸【门架定H】 Dimension【Gantry positioning H】	2030x950x2300mm	1635x810x200mm	2407X1257X2476mm
	货叉尺寸l/e/s【不含走线管】 Fork size l/e/s【excluding conduit】	1150x180x55mm	1150x180x55mm	1150x180x55mm
	自重 Weight	800kg	200kg	2890kg
	额定负载 Rated load	1600kg	1500kg	2000kg
	转弯半径 Turning radius	1660mm	1400mm	1500mm
	货叉外间距 Outer distance between forks	560mm	560mm	560mm
	最大支持提升高度 Maximum supported lifting height	5400mm	200mm	8000mm
	最低位货叉离地高度 Lowest cargo fork off the ground	86mm	70mm	90mm
	导航 Navigation	激光SLAM	激光SLAM	激光SLAM
通讯 Communicate	无线Wi-Fi	无线Wi-Fi	无线Wi-Fi	
运动性能 motion performance	行驶性能 Driving performance	前进、后退、转弯 Forward, backward, turning	前进、后退、转弯 Forward, backward, turning	前进、后退、转弯 Forward, backward, turning
	运行速度 Running speed	空载1.2m/s、满载1.0m/s No load 1.2m/s, full load 1.0m/s	空载1.2m/s、满载1.0m/s No load 1.2m/s, full load 1.0m/s	空载1.2m/s、满载1.0m/s No load 1.2m/s, full load 1.0m/s
	定位精度 Positioning accuracy	±10mm	±10mm	±10mm
	角度精度 Angle accuracy	±1°	±1°	±1°
	跨沟能力 Cross channel capability	≤30mm	≤30mm	≤30mm
	越障高度 Obstacle clearance height	≤10mm	≤10mm	≤10mm
	爬坡能力 Climbing capacity	≤3°(5%)	≤3°(5%)	≤3°(5%)
行车安全 Driving safety	手动/自动 Manual/Automatic	有 have	有 have	有 have
	偏离路径和定位异常保护 Deviation and positioning anomaly protection	有 have	有 have	有 have
	部件和通讯故障保护 Parts and communication protection	有 have	有 have	有 have
	底部避障雷达(2个) Bottom obstacle avoidance radar (2 off)	有 have	有 have	有 have
	牙尖防撞检测 Tooth tip anti-collision detection	有 have	有 have	有 have
	急停按钮(最少2个) Emergency stop button (minimum of 2)	有 have	有 have	有 have
	声(喇叭)、光(三色灯2个)提示 Sound and light prompts	有 have	有 have	有 have
	HMI人机界面 HMI human-machine interface	有 have	有 have	有 have
电池性能 Battery performance	充电方式 Model series	自动/手动 Automatic/Manual	自动/手动 Automatic/Manual	自动/手动 Automatic/Manual
	换电方式 Power exchange method	吊装 Hoisting	拆卸 Disassemble	吊装 Hoisting
	电池类型(标准) Battery type (standard)	磷酸铁锂 Lithium Iron Phosphate	磷酸铁锂 Lithium Iron Phosphate	磷酸铁锂 Lithium Iron Phosphate
	额定电压 Rated voltage	24V	24V	24V
	标配容量 Standard capacity	300Ah	60Ah	300Ah
	放电率/可运行时间 Discharge rate/operational time	5-6h	5-6h	5-6h
	充电循环次数(完全充放电) Charging cycle (complete charge discharge)	3000次 ≥60%	3000次 ≥60%	3000次 ≥60%

Note: The external dimensions, fork dimensions, and self weight are subject to the design; Rated load and maximum supported lifting height can be customized.

*注: 外形尺寸、货叉尺寸、自重以设计为准; 额定负载、最大支持提升高度可定制。

RGV, 是有轨制导车辆 (Rail Guided Vehicle) 的英文缩写, 又叫有轨穿梭小车。RGV由于能在预先设定的直角轨道上往复换轨穿梭, 因此能实现多工位不同位置的物料搬运, 是智能生产线的载体, 具有载荷大、运行速度快、灵活性强、系统稳定可靠等特点。

RGV, is known as Rail Guided Vehicle, because RGV can reciprocate and shuttle on a pre-set right-angle track, it can realize material handling in multiple and different stations. It is one of the carriers for an intelligent production line and has the characteristics of heavy load, fast running speed, strong flexibility with stable and reliable system. safety protection. Introducing 5G technology for multiple standard AGV reliable synchronization to meet various non-standard application.



技术参数 / Specifications

尺寸 Dimension	依实际需求 Customized
速度 Speed	0~160m/min
运行效率 Motion efficiency	0~60盘/小时/套 60Pallet/Hour/Set
定位精度 Positioning Accuracy	±5mm
操作模式 Operation Mode	手动、单机自动和联机自动控制 Manual, Stand-alone Automatic Control and Synchronized Automatic Control
行走速度控制方式 Horizontal Motion Speed Control	变频控制 Variable Frequency Control
马达 Power	电机减速机 Motor and Reducer
工作载荷 Payload	100KG-10000KG
供电方式 Power Supply	滑触线、锂电池 Isolated Conductor Rail (ICR), Lithium Battery
轨道 Rail	铝合金或钢轨多功能, 滑触线内置保证安全 Aluminum alloy or Steel, built-in ICR for safety assurance

单立柱
Single Column



单立柱——单伸位板叉
Single Column - Single-depth Plate



单立柱——夹抱式货叉
Single Column - Gripper



单立柱转弯堆垛机
Single Column Turning Stacker Crane



额定负载 (Rated Payload)	0~1500kg
托盘尺寸 (Pallet Size)	标准或定制 Standard or Customized
整机高度 (Overall Height)	<22m(30m)
行驶速度 (Maximum Motion Speed)	0~180m/min
行驶定位精度 (Motion Positioning Accuracy)	±5mm
升降定位精度 (Lifting Positioning Accuracy)	±3mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm

额定负载 (Rated Payload)	0~1000kg
托盘尺寸 (Pallet Size)	标准或定制 Standard or Customized
整机高度 (Overall Height)	<15m
行驶速度 (Maximum Motion Speed)	0~300m/min
行驶定位精度 (Motion Positioning Accuracy)	±5mm
升降定位精度 (Lifting Positioning Accuracy)	±3mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm

额定负载 (Rated Payload)	0~50kg
托盘尺寸 (Pallet Size)	标准或定制 Standard or Customized
整机高度 (Overall Height)	<24m
行驶速度 (Maximum Motion Speed)	0~120m/min
行驶定位精度 (Motion Positioning Accuracy)	±5mm
升降定位精度 (Lifting Positioning Accuracy)	±3mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm

额定负载 (Rated Payload)	0~4500kg
托盘尺寸 (Pallet Size)	标准或定制 Standard or Customized
整机高度 (Overall Height)	<30m(45m)
行驶速度 (Maximum Motion Speed)	0~180m/min
行驶定位精度 (Motion Positioning Accuracy)	±5mm
升降定位精度 (Lifting Positioning Accuracy)	±3mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm

双立柱巷道堆垛机
Dual Column Stacker Crane



大件堆垛机
Large-size Stacker Crane



双工位双立柱堆垛机
Double Workstation Dual Column Stacker Crane



额定负载 (Rated Payload)	0~4500kg
托盘尺寸 (Pallet Size)	标准或定制 Standard or Customized
整机高度 (Overall Height)	<30m(45m)
行驶速度 (Maximum Motion Speed)	0~180m/min
行驶定位精度 (Motion Positioning Accuracy)	±5mm
升降定位精度 (Lifting Positioning Accuracy)	±3mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm

额定负载 (Rated Payload)	0~10000kg
托盘尺寸 (Pallet Size)	标准或定制 Standard or Customized
整机高度 (Overall Height)	<15m
行驶速度 (Maximum Motion Speed)	0~180m/min
行驶定位精度 (Motion Positioning Accuracy)	±5mm
升降定位精度 (Lifting Positioning Accuracy)	±3mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm

额定负载 (Rated Payload)	0~4500kg
托盘尺寸 (Pallet Size)	标准或定制 Standard or Customized
整机高度 (Overall Height)	<30m
行驶速度 (Maximum Motion Speed)	0~180m/min
行驶定位精度 (Motion Positioning Accuracy)	±5mm
升降定位精度 (Lifting Positioning Accuracy)	±3mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm

单电机单伸位货叉(周转箱式)
Single Motor Single Depth(Box Type)



最大负载 (Maximum Payload)	0~200kg
最大长度 (Maximum Length)	200-1500mm
运行速度 (Motion Speed)	40/60m/min
负载扰度 (Deflection with Load)	5-18mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm
运行重复定位精度 (Motion Repeatability Accuracy)	±3mm
货叉上平面高低差 (Fork Surface Height Difference)	≤2mm
驱动方式 (Drive Mode)	电机驱动 Motorized
适用范围 (Suitable Application)	箱式存取 For Box

单电机双伸位货叉(周转箱式)
Single Motor Double Depth (Box Type)



最大负载 (Maximum Payload)	0~200kg
最大长度 (Maximum Length)	200-1500mm
运行速度 (Motion Speed)	40/60m/min
负载扰度 (Deflection with Load)	5-18mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm
运行重复定位精度 (Motion Repeatability Accuracy)	±3mm
货叉上平面高低差 (Fork Surface Height Difference)	≤2mm
驱动方式 (Drive Mode)	电机驱动 Motorized
适用范围 (Suitable Application)	箱式存取 For Box

箱式抱叉
Box Type Griper



最大负载 (Maximum Payload)	0~200kg
最大长度 (Maximum Length)	200-1500mm
运行速度 (Motion Speed)	40/60m/min
负载扰度 (Deflection with Load)	5-18mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm
货叉运行同步误差 (Fork Motion Synchronization Deviation)	< 5mm
运行重复定位精度 (Motion Repeatability Accuracy)	±3mm
货叉上平面高低差 (Fork Surface Height Difference)	≤2mm
驱动方式 (Drive Mode)	电机驱动 Motorized
适用范围 (Suitable Application)	箱式存取 For Box

单电机单伸位货叉(托盘)
Single Motor Single Depth (Pallet Type)



最大负载 (Maximum Payload)	0~2000kg
最大长度 (Maximum Length)	1000-3000mm
运行速度 (Motion Speed)	20/40m/min
负载扰度 (Deflection with Load)	18-55mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm
货叉运行同步误差 (Fork Motion Synchronization Deviation)	< 5mm
运行重复定位精度 (Motion Repeatability Accuracy)	±3mm
货叉上平面高低差 (Fork Surface Height Difference)	≤2mm
驱动方式 (Drive Mode)	电机驱动 Motorized
适用范围 (Suitable Application)	托盘存取 For Pallet

双电机双伸位货叉(托盘)
Dual Motor Double Depth (Pallet Type)



最大负载 (Maximum Payload)	0~2000kg
最大长度 (Maximum Length)	1000-3000mm
运行速度 (Motion Speed)	20/40m/min
负载扰度 (Deflection with Load)	18-55mm
货叉定位精度 (Fork Positioning Accuracy)	±2mm
货叉运行同步误差 (Fork Motion Synchronization Deviation)	< 5mm
运行重复定位精度 (Motion Repeatability Accuracy)	±3mm
货叉上平面高低差 (Fork Surface Height Difference)	≤2mm
驱动方式 (Drive Mode)	电机驱动 Motorized
适用范围 (Suitable Application)	托盘存取 For Pallet

(运行速度及负载扰度与叉的负载及最大伸长量有关)
(Motion and deflection with load are related to fork load and maximum extension length)

输送设备

Delivery System



往复式提升机
Shuttle Lifting Conveyor



托盘辊道机
Pallet Roller Conveyor



托盘移栽机
Pallet Transfer Conveyor

往复式提升机，也叫提升机，升降机，是升降设备中的一种上下往复输送的设备。往复式提升机是由链条带动，通过变频调速控制电机，使提升轿厢上下往复运动。提升轿厢上配有传动机构，以便被输送物自动进入升降机的提升轿厢上。

The shuttle lifting conveyor is also known as lift, elevator, which is a kind of up-down reciprocating conveying equipment. It is driven up and down by a variable frequency conversion motor through chain. The cargo platform equipped with a transmission mechanism for the convenience of transporting goods to the cargo platform automatically.

外机架宽度 Frame Width	2012~2612mm
托盘输送宽度 Pallet Conveying Width	800~1200mm
提升机长度 Lifting Conveyor Length	1718~3000mm
货物高度 Material Height	0~2000mm
楼面高度 Lifting Height	0~15000mm
下输送面高度 Bottom Conveying Height	50~1300mm

备注：可根据甲方要求定制化设计生产
Remark: Can be customized according to customer's requirement



链式输送机
Chain Conveyor



皮带输送机
Belt Conveyor



多楔带斜角输送机
Multi-wedge Inclined Belt Conveyor



拆盘机
Pallet Dismantle Equipment

钱柜

Vertical Storage System (Value-Store)



高密度垂直旋转货柜
High-density Gyration Vertical Storage System

型号/Model	托盘有效尺寸/Tray Size(mm)			货柜外形尺寸/External Dimension(mm)			托盘/Tray(kg)			备注 Note
	长/L	深/D	高/H	长/L	深/D	高/H	载荷 Payload	托盘形式 Tray Type	数量 Qty	
VSG-S2050×370C-10	2050	370	190	2900	1430	2160	100	省略为普通托盘/Normal Tray	托盘数量可定制 (10+2n)	S: 单机版/Stand-alone M: 联动版/Multiple-link C: 定制托盘/Customized QTY: Default-10pos.
VSG-M2050×370C-10	2050	370	190	2900	1430	2160	100	F-分层托盘/F-Multi-layer Tray	默认10个	
VSG-S2420×305C-10	2420	305	340	3460	1620	2750	200	C-抽屉托盘/C-Drawer Tray		
VSG-M2420×305C-10	2420	305	340	3460	1620	2750	200	D-定制托盘/D-Customized Tray		
VSG-S2420×504C-12	2420	504	470	3460	1800	4030	500			
VSG-M2420×504C-12	2420	504	470	3460	1800	4030	500			

例如(For example):

中型200kg旋转柜 / Medium 200kg Gyration Model

VS G-S 2420×305 C-10



注：高度随托盘数量增加而增加
Note: The height increases according to the number of tray increases

中型单机版300kg升降柜 / Medium Stand-alone 300kg Lift Model

VS L-S 1840×788-5000 A



注：托盘数量可以定制，根据客户存储货物高度计算得出，在技术方案中注明，不在型号中体现。
Note: The number of trays can be customized according to the height calculation of customer's stored material, it will be indicated in the technical proposal not in the model.

型号/Model	托盘净尺寸/Tray Dimension			货柜外形尺寸/External Dimension			托盘/Tray		备注/Note
	长/L(mm)	深/D(mm)	高/h(mm)	长/L(mm)	深/D(mm)	高/H(mm)	承重/Payload(kg)	个数/Qty	
VSL-S1250×635-3000A	1250	635	50	1700	2500	3000-15000 整米数 (integer meter) +50	A:300, B:500, C:750	根据客户需要 定制数量/ Customized QTY according to requirement	S:单机版, M:联动版 S:Stand-alon, M:Multiple-link
VSL-M1250×635-3000A	1250	635	50	1700	2500				
VSL-S1840×788-5000A	1840	788	50	2290	2990				
VSL-M1840×788-5000A	1840	788	50	2290	2990				
VSL-S2550×880-5000A	2550	880	50	3250	3500				
VSL-M2550×880-5000A	2550	880	50	3250	3500				



高密度垂直升降货柜
High-density Lift Vertical Storage System

仓库管理系统

Warehouse Management System (WMS) Software

仓库管理系统WMS是公司自主研发的具有自主知识产权的仓储物流管理软件，是多体系结构的物流系统管控平台。

物流仓储管理系统为不同自动化程度的立体仓库、平库系统提供了强有力的信息化管理解决方案。具有操作简单直观，支持多语言、参数化配置、动态插件扩展等优点，将标准化产品软件与用户自定义流程相结合，充分满足项目的个性化功能需求。可以提高企业运营效率，降低企业库存，增加出货准确率，为企业内部运营提供轻巧、灵活、全面的仓库管理解决方案。

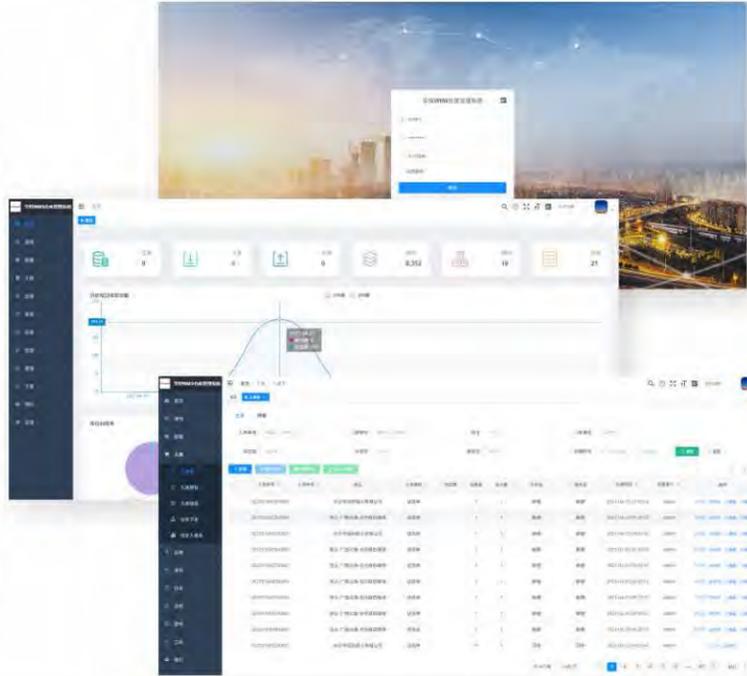
内嵌收货、存储、拣选、发货、库存控制、盘点等核心功能。支持一维、二维条码和RFID技术，实现物料批次管理和托盘的全程跟踪。可配置定义到物料、区域、容器的不同存储策略，提供用户自定义报表格式功能。

The warehouse management system (WMS) software, is a warehouse and logistics management software which is independently developed by HUAHENG with independent intellectual property rights. It is a logistics system management and control platform with a multi-layer system structure.

The WMS provides powerful information management solutions for three-dimensional warehouses and flat warehouse systems with different degrees of automation.

It has the advantages of simple and straightforward operation, support for multi-language, parameterized configuration, dynamic plug-in expansion, etc., and combines standardized software with user-defined customized processes to fully meet the personalized functional requirements of the project. It can improve the operating efficiency of the company, reduce the inventory, increase the accuracy of shipments, and provide a handy, flexible and comprehensive warehouse management solution for the internal operation of the company.

Built-in core functions such as receiving, storage, picking, shipping, inventory control, and inventory etc. Support one-dimensional, two-dimensional, bar code and RFID technology to realize material batch management and pallets full tracking. Configurable variable storage strategies to define materials, areas, and containers, and user-defined report function is provided.

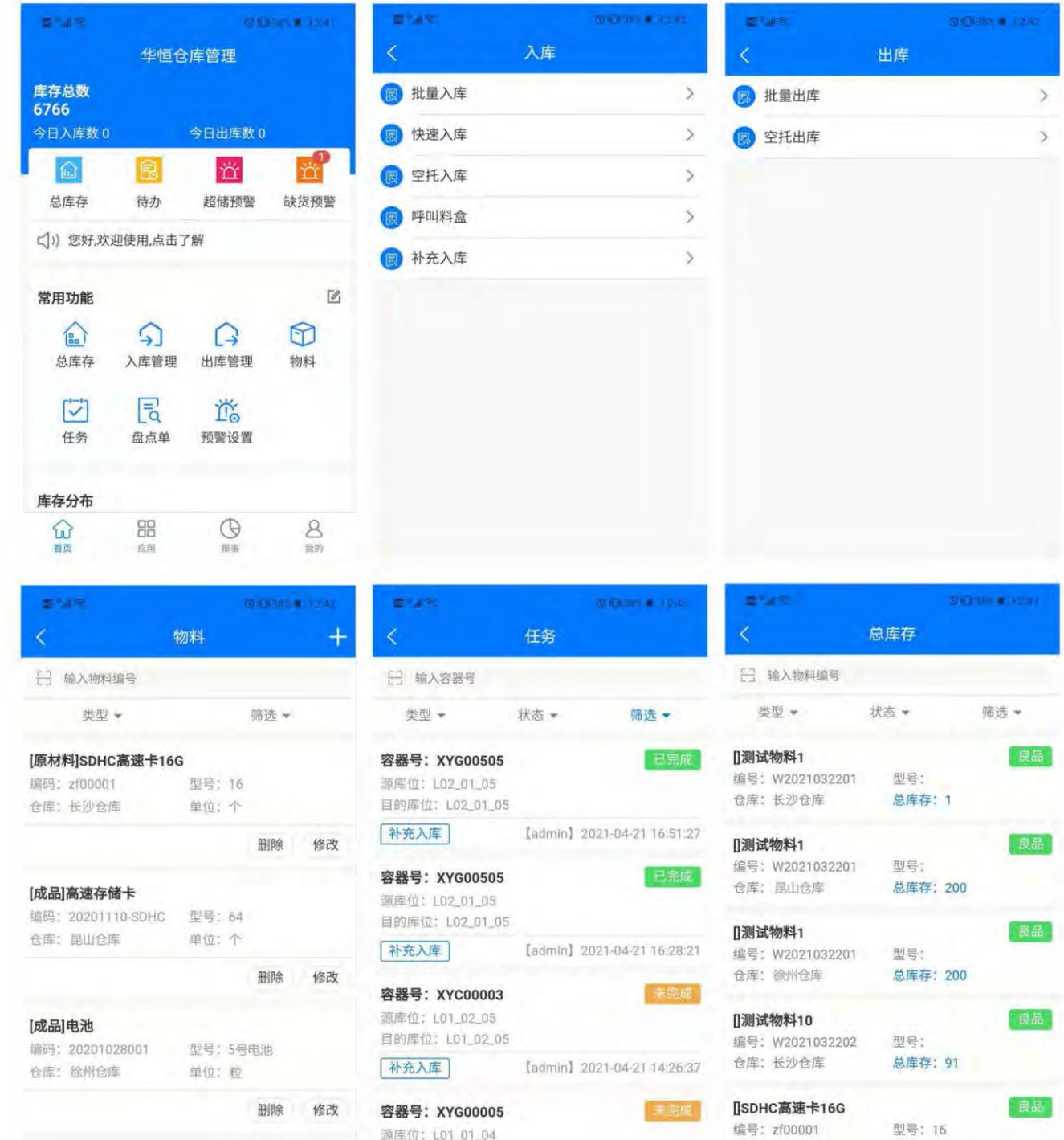


仓库管理系统

Warehouse Management System (WMS) Software

自动化立体仓库的手持PDA管理软件，具备自动化仓储入库、出库、物料、任务、库存查询等功能，方便仓库人员管理物品。仓管员通过扫码输入托盘号、物料编码和相对应的数量，系统分配一个空闲的库位并生成入库任务，放在入口口的托盘将被送到对应库位；输入物料编码和对应数量，系统会自动组盘，然后生成相对应任务，立库会执行任务把托盘送到拣货台。

The automatic warehouse handheld PDA management software is to achieve the function of automated warehouse inbound, outbound, inventory search, warehouse location movement. Warehouse clerk enters the pallet number, material code number and corresponding quantity by scanning the code. The system will allocate a free storage location and generate a storage task, and the pallet place at eh storage entrance will be sent to the corresponding storage location. Enter the material code number and corresponding quantity, the system will automatically assembly the trays and generate the corresponding tasks, and then warehouse will perform the task to send the trays to the picking station.



仓库控制系统

Warehouse Control System (WCS) Software

应用于仓库设备管理和调度。向上对接WMS仓库管理系统的上下架任务，向下统筹协调仓库物流装备如堆垛机、提升机、输送线、RGV、AGV、穿梭车以及机器人之间的运行。

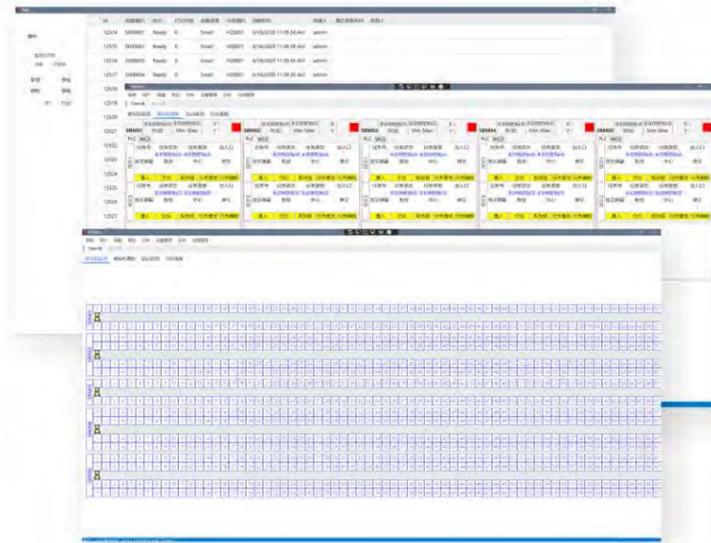
系统一般采用C/S架构或服务+B/S架构。

WCS通过任务机制进行智能任务拆解，并结合路径最优和设备效率最大等策略进行动态协同作业。为上层系统的管理指令提供设备执行保障和优化，实现对接各种物流设备系统接口的集成、统一调度以及监控，并为仓库维修人员提供设备异常操作修复指引和设备保养提示。

Used in warehouse management equipment and scheduling. Connect upwards to the loading/unloading tasks of WMS warehouse management system, meanwhile coordinate downwards to the operation of warehouse logistic equipment, such as in between stacker crane, lifting conveyor, conveyor line, RGV, AGV, shuttle vehicle and robot etc.

Generally, the system uses C/S Structure or Service + B/S Structure.

WCS dismantles tasks intelligently through task management, and combining strategies such as path optimization and efficiency maximization to perform dynamic collaborative operations. Provide equipment execution guarantee and optimization for the management instructions of the upper system, realize the integration, unified scheduling and monitoring of various logistics equipment interfaces, and provide abnormal operation repair guideline and equipment maintenance tip for warehouse personnel.



信息系统交互 / Information System Interaction

无缝对接上游系统下发作业指令
Seamless Connect with Upstream System and Issue Operation Instructions

任务拆解智能分配 / Intelligent Task Dismantling and Assignment

优化分解任务、分析执行路径，提供设备最优路径规划，防碰撞，高效率，为上层系统的调度指令提供有力保障
Optimize dismantle tasks, analyze execution pass, provide optimal path planning, prevent collisions, high efficiency, and provide a strong guarantee for the scheduling instructions of upstream system.

实时监控路径优化 / Real-time Monitoring of Path Optimization

实时获取自动化设备的精准位置，作业状态，空闲状态，合理分配资源，实现效率最大化
Obtain the precise location, operating status and vacancy status of automation equipment in real time, allocate resources reasonably to achieve maximum efficiency.

设备系统集成 / Equipment System Integration

PLC主流厂商、机器人、MQTT
PLC main manufacturers, Robots, MQTT

上游：ERP/WMS/MES
Upstream: ERP/WMS/MES

开放接口交互平台
Open Interface Interactive Platform

- 基于标准协议 HTTP、MQ、Socket、Database等
Based on Standard HTTP, MQ, Socket, Database, etc
- 提供SDK方式
Provide SDK Method
- 支持消息的发布和订阅
Provide SDK Method

事件
Event

WCS调度平台
WCS Scheduling Platform

- 高度可配置化：设备，路径...
Highly Configurable: Equipment, Path...
- 预置各类物流设备功能组件
Pre-installed Functional Components of Various Logistic Equipment
- 基于数据动态修正参数
Dynamically Parameter Correction Based on Data

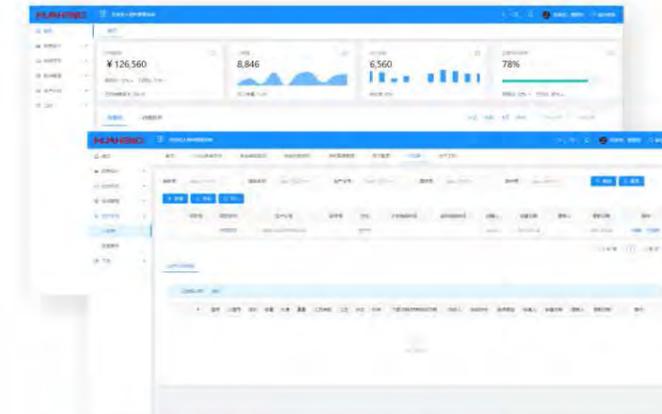
下游：设备系统、AGV
Downstream: Equipment System, AGV

设备接口交互平台
Equipment Interface Interactive Platform

- 物流设备或控制系统连接
Logistic Equipment and Control System Connection
- 监听设备的变更事件，数值变动、状态变更、预警通知
Monitoring Equipment Change Events, Value Changes, Status Changes and Pre-warning Notifications.
- 基于数据动态修正参数
Dynamically Parameter Correction Based on Data

物料跟踪系统、物料拉动系统

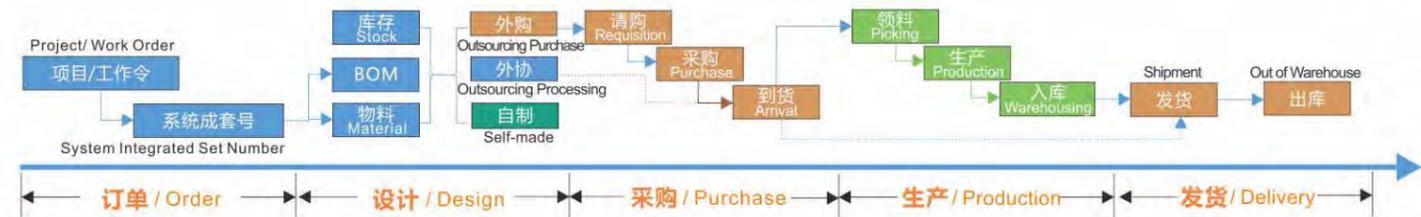
Material Tracking System, Material Pulling System



(MTS物料跟踪系统/Material Tracking System)

应用于生产制造型企业，以物料的维度展示某个订单或工作令的设计、采购、生产到交付的整个过程。其中包括各个物料的截点时间展示、物料项目锁定、部件齐套领料等。系统可以直接对接设计系统PLM或人工导入BOM，维护物料的生产属性（外购、外协、自制），结合采购、仓库WMS和生产报工的出入库记录更新物料的具体状态（已请购未采购、已采购未到货、已到货未入库、采购件入库、已计划未领料、已领料未生产、已生产未入库、自制件入库、已发货未出库、成品出库），所有操作均通过PDA操作解决了实际过程中的缺料、等料等痛点。

It is applied in manufacturing companies to display the entire process of design, purchase, production and delivery of an order or work order from material point of view. Including the cut-off time display of each material, material item locking, parts kitting picking etc. The system can directly connect to the design system PLM or manually import BOM, maintain the production material condition (outsourcing purchase, outsourcing processing, self-made), and update the specific status of the material in combination with the purchase, warehouse WMS and production entry/exit records (requisitioned for future purchase, purchased but not picked, arrived but not received, purchased parts are received, planned but not picked, picked but not produced, produced but not received, self-made parts are received, and shipped but not out of warehouse, finished product out of warehouse). All the operations have solved the panic problem of lack of material in the actual process through PDA operation.



华恒的物料拉动系统是应用于线边仓库+AGV+生产线物料配送或生产工序的转序的场景；系统提供PAD和根据物料配送节拍以及物料消耗进行物料的备料和调度AGV进行物料配送；系统通过对生产线生产的产品型号的制造BOM映射到具体的物料投放点。

在线边仓根据计划提前进行入库配盘存放，再根据生产线实际情况进行物料拉动配送。

HUAHENG's material pulling system is applied in scenario of side-line warehouse + AGV + production line material distribution or production process sequence scheduling. The system provides PAD and material preparation and scheduling AGV for material distribution according to material distribution cycle and material consumption. The system maps the manufacturing BOM of the specific model on the production line to the specific material placement point. The side-line warehouse will carry out warehousing and storage in advance according to plans, and then carry out material pulling and distribution according to the actual situation of verified production.



(MPS物料拉动系统/Material Pulling System)



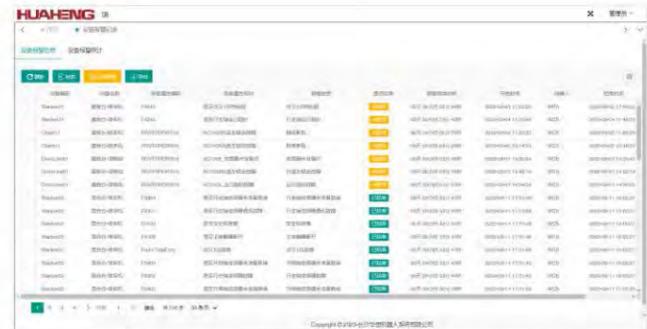
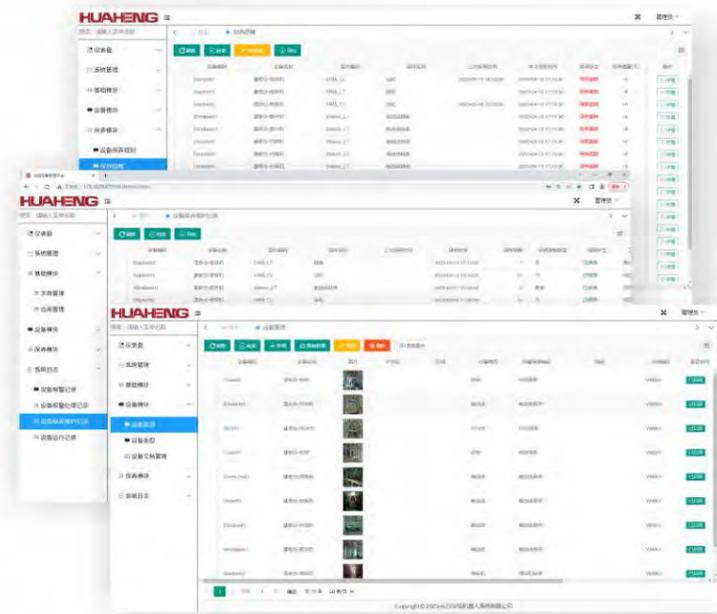
设备管理系统

Equipment management system

本系统是针对设备的保养、设备报警提醒、设备状态在线查看，以及设备在线文档的操作说明。通过管理平台对大量设备进行状态监控和集中管理。可同时对批量设备进行远程管理及配置，提高网络部署和维护的工作效率。

利用本系统，能帮助企业实现设备的规范化、科学化、智能化管理，降低设备故障率，保持设备稳定性，实现企业资产效益的全面提升。

This system is designed for equipment maintenance, equipment alarm reminders, online viewing of equipment status, and operating instructions for equipment online documentation. Monitor and centrally manage the status of a large number of devices through a management platform. Remote management and configuration of batch devices can be carried out simultaneously, improving the efficiency of network deployment and maintenance. By utilizing this system, enterprises can achieve standardized, scientific, and intelligent management of equipment, reduce equipment failure rates, maintain equipment stability, and achieve comprehensive improvement of enterprise asset efficiency.



设备保养提醒：能更有效的管理设备，降低停机成本
Equipment Maintenance Reminder: more effective management of equipment, reduce the cost of downtime

设备报警记录：通过“处理报警”操作，可更新报警记录
Equipment alarm records: through "Processing" operation, can update the alarm records

系统模块

System module

实时监控与故障预警，帮助企业实现设备的规范化、科学化、智能化管理，降低设备故障率，保持设备稳定性，实现企业资产效益的全面提升。

Real-time monitoring and fault early warning can help the enterprise to realize the standardized, scientific and intelligent management of equipment, reduce the rate of equipment failure, maintain the stability of equipment, and realize the overall improvement of enterprise asset benefit.



可视化看板

和数字孪生

Visual Kanban and Digital Twin

可视化看板，是一个数据可视化系统用以在工作中全过程中管理的看板。它利用形象的、直观的、有利于视觉感知的信息来组织现场活动，从而提高生产效率的一种管理手段。

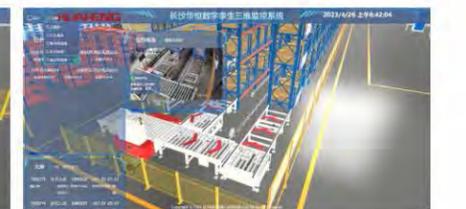
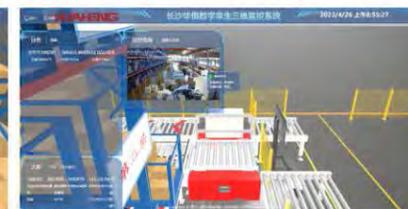
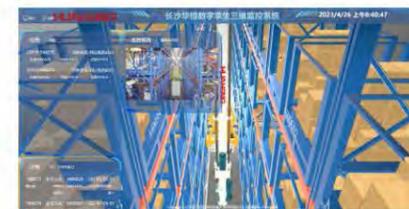
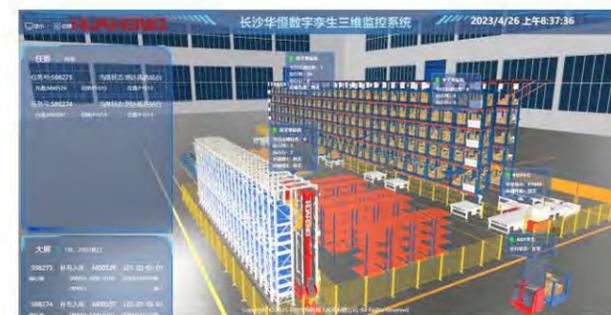
数字孪生大屏可视化系统的实际功能就是将现实世界实体在数字化直接构建等比例的模型，展现出一个真实世界的数字模型，利用数字化手段对实体对象进行动态仿真、监测、分析和控制。同时将各项数据进行统计汇总，使得管理者可以根据可视的数据来判断当前事务的状态、诊断存在的问题，助力管理者作出更加科学的决策分析。

Visual Kanban is a data visualization system used to manage Kanban in the whole process of work. It is a management tool that utilizes visual, intuitive, and visually appealing information to organize on-site activities, thereby improving production efficiency.

The actual function of the digital twin large screen visualization system is to digitize real world entities and directly construct proportional models, presenting a real world digital model, and using digital means to dynamically simulate, monitor, analyze, and control physical objects. At the same time, the statistical summary of various data enables managers to judge the status of current transactions and diagnose existing problems based on visible data, helping managers to make more scientific decision analysis.



(可视化看板 / Visual Kanban)



(数字孪生 / Digital Twin)



- **专业化售后服务团队 / Professional after-sales service team**

为支持客户对信息系统使用及维护便利，有专业的软件售后部门提供技术支持，其成员由从事软件项目开发和实施多年的资深工程师组成。

In order to support customer to facilitate the use and maintenance of information system, a professional software after-sales department will provide technical support, and its members are composed by senior engineers who have been engaged in software project development and implementation for many years.

- **本地化及远程技术支持 / Localized and remote technical support**

遵循“本地化技术支持”策略，提供就近的售后服务保障并提供快捷的现场技术服务，同时通过远程VPN提供在线支持服务。

Follow the strategy of localized technical support, provide near-by after-sales service guarantee and provide fast on-site technical service, and provide online support service through remote VPN.

- **售后服务平台 / After-sales service platform**

客户可通过售后服务平台，提交如操作问题、系统问题、业务咨询、需求等各方面问题。有专业技术支持工程师提供详细的解答。

Through after-sales service platform, customers can submit various issues, such as operational issues, system issues, and business consultation etc. Professional technical support engineers will provide detailed answers.

- **协助用户建立“自身技术力量” / Assist customers to build-up own technical team support**

协助用户组建“自身技术力量”的支持策略。

Assist customers to build-up own technical team support

- **定期用户回访 / Regular customer visit**

本公司采用电话或现场走访方式，了解产品的使用情况及听取用户的意见和要求，以便为用户提供更好的服务。

We will use telephone or on-site visit to understand the use of products and obtain user's opinions and requirements in order to provide customer better services.

