

#### 深圳中集天达物流系统工程有限公司

Shenzhen CIMC Intralogistics Systems Co., Ltd.

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# CIMC中集

智慧物流系统解决方案 Intelligent Logistics System Solution

深圳中集天达物流系统工程有限公司 Shenzhen CIMC Intralogistics Systems Co., Ltd.

# CIMC中集

创・造・新价值

**Driving New Value** 

──智慧物流 <del>──</del> 解决方案及高质量交付系统集成商

The System Integrator of Intelligent Logistics Solutions and High Quality Delivery











🛚 港、自动化物流及消防装备 🔹

**集装**筘

道路运输车辆

物流服



能源、化工及液态食品装备



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集团简介 GROUP INTRODUCTION

中国国际海运集装箱(集团)股份有限公司(简称:中集集团或中集),是世界领先的物流装备和能源装备供应商,总部位于中国深圳。中集致力于在如下主要业务领域:集装箱、道路运输车辆、能源/化工及液态食品装备、空港/自动化物流及消防装备、海洋工程、物流服务、循环载具等提供高品质与可信赖的装备和服务。支持这些业务蓬勃发展的有:提供专业资金管理的财务公司,以及提供金融解决



方案的融资租赁公司。作为一家为全球市场服务的多元化跨国业务集团,中集在亚洲、北美、欧洲、澳洲等地区拥有300余家成员企业及3家上市公司,客户和销售网络分布在全球100多个国家和地区。2021年,中集集团实现销售收入约1637亿元(人民币),净利润约66.7亿元(人民币)。

中集集团于1980年1月创立于深圳,由招商局集团与丹麦宝隆洋行合资成立,初期由宝隆洋行派员管理。1994年公司在深圳证券交易所上市,2012年12月在香港联交所上市,目前是A+H股公众上市公司,主要股东为深圳资本集团、招商局集团。诞生时即深深植入的国际化基因,出类拔萃的公司治理结构,长期以来对于技术创新和管理效率的不懈追求,使得中集快速成长为在全球多个行业具有领先地位的企业。

Headquartered in China Shenzhen, China, China International Marine Containers (Group) Ltd. (CIMC) is the world's leading logistics equipment and energy equipment supplier. CIMC is committed to providing high-quality and reliable equipment and service in the following main business areas: containers, road transportation vehicles, energy, chemical & food equipment, Airport facilities, automated logistics and firefighting equipment, offshore engineering, logistics service, and returnable packaging solution. The booming development of the business is supported by: CIMC Finance Company providing professional funds management and financing lease company providing financial solutions. As a diversified transnational business group providing service for the global market, CIMC has more than 300 member enterprises and 3 listed companies in Asia, North America, Europe and Australia, and its customers and sales network are distributed in more than 100 countries and regions in the world. In 2021, CIMC achieved the sales revenue of RMB 163.7 billion and the net profit of about RMB 6.67 billion.

CIMC is a joint venture established by China Merchants Group and East Asiatic Company in Shenzhen in January 1980 under the management of East Asiatic Company in the very initial phase. CIMC was listed in Shenzhen Stock Exchange in 1994 and listed in Hong Kong Stock Exchange (SEHK) in December 2012. Now the group is a public A+H share listed company whose main shareholders are Shenzhen Capital Holdings, China Merchants Group. Stimulated by the deep-seated international genes since its establishment, supported by the outstanding corporate governance structure and propelled by the endless pursuit of technological innovation and management efficiency, CIMC has rapidly grown into a prominent company that stands the leading place in many global industries.



华南基地 (深圳) / South China Base (Shenzhen)



华东基地(昆山)/East China Base (Kunshan)

# **12**公司简介 COMPANY PROFILE

深圳中集天达物流系统工程有限公司是中集集团旗下从事智慧物流系统业务的专业化公司。经过三十年的积累和不断创新,中集天达物流已经成为国内外智能物流系统领域最具实力的解决方案提供商、系统集成商、设备供应商之一。

近年来,公司持续加大在技术研发上的投入,业务规模 飞速增长。目前已在国内外石油化工、食品冷链、生物医药、 智能制造、家居家装、新能源、钢铁、第三方物流、3C电子、



汽车等行业实施了近600个中大型项目,在国内外物流系统集成商中名列前茅。

未来,中集天达物流将持续不断推进高端智慧物流核心设备的研发,致力于打造硬件与软件全通路,为客户 提供一体化服务。

As one of the subsidiaries of CIMC, which engaged in intelligent intralogistics business, SHENZHEN CIMC INTRALOGISTICS SYSTEMS CO.,LTD. (CIMC Intralogistics) is specialized in automatic logistics system. It has become one of the most powerful solution providers, system integrators and equipment suppliers in the field of domestic automatic logistics system through decades of accumulation and continuous innovation.

In recent years, the company continues to increase investment in technology research and development, business scale has achieved rapid development. At present, it has implemented nearly 600 medium or large scale projects in petrochemical industry, food, cold chain, biomedicine, intelligent manufacturing, home furnishing, new energy, steel, third-party logistics, 3C electronics, motor industry and other industries at home and abroad, ranking the top among domestic and abroad logistics system integrators.

In the future, we will continue to promote the research and development of high-end intelligent logistics core equipment, and is committed to creating a full channel of hardware and software to provide customers with integrated services.



作为国家首批高新技术和国家火炬计划重点企业,公司多次荣获广东省和深圳市各种奖励,拥有可进行综合仿真测试的多功能物流实验室。

Among national first batch of hi-tech enterprises of National Torch Plan, the company has won lots of Guangdong Provincial and Shenzhen Municipal awards, equipped with multi-functional and logistics laboratory where comprehensive simulation test can be implemented.





















#### 设计研发

#### **DESIGN R& D**

公司拥有30多年的智慧物流系统规划与集成经验,具备丰富的设计手段和完善的仿真验证体系。

公司拥有一支300多人的技术研发团队,专业配备齐全,涵盖机械、液压系统、有限元分析、电气控制、过程仿真、计算机软件等多个专业。

中集天达已申请的各项专利300多项,已获得授权的有207项,其中有多项是在欧美发达国家申请并获得授权的专利。

CIMC Intralogistics has more than 30 years experiences in intelligent logistics system planning and integration with advanced design methods and complete simulation verification system.

The company has a technical R&D team consisting of more than 300 members, fully equipped with professional equipment covering machinery equipment, hydraulic system, FEA, electrical control, logistics system simulation, computer software, etc.

Currently we have applied over 300 patents ( 207 patents in validity), most of which are issued in developed countries in Europe and America.



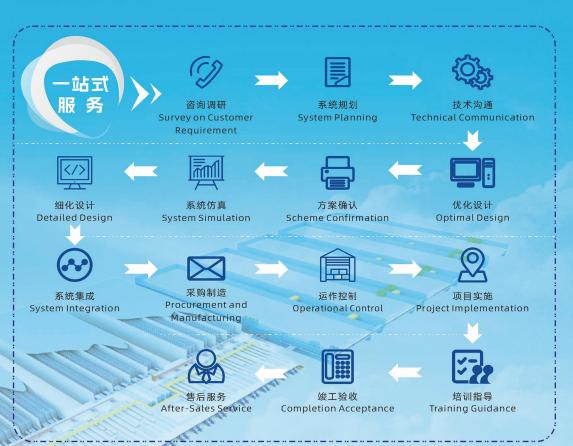
### 规划实力 PLANNING & POWER

自1991年承接第一个自动化物流系统项目以来,中集天达承接实施了多个行业的六百多个项目,其中包含多个在行业内有代表意义或实现行业内技术突破的重点项目,在项目执行过程中总结沉淀了丰富的行业经验。

公司目前配置专职规划设计团队,聘请专业院校教授作为高级顾问,设置重点行业的高级规划经理,并配置多名系统仿真工程师。可结合各个行业的特性以及客户定制化的需求提供针对性的规划咨询服务,通过用户需求梳理分析、解决方案对比分析、系统建模仿真分析等方式为客户提供最佳解决方案。

Since undertaking the first automatic tridimensional warehouse project in 1991, the company has taken on hundreds of projects in various industries, including many key projects that are of representative significance or achieve technical breakthoughs in the relevant industries, and accumulated rich experience in the process of project implementation.

Currently, the company has a full-time planning and design team those professors from specialized institutions as senior consultants, set up senior planning managers for key industries and hires full-time system simulation engineers. It can provide targeted planning consultation service based on the characteristics of industries and customized requirements of customers, and provide the best solutions for customers after user demands analysis, solutions comparison and system modeling and simulation analysis.



#### 软件系统 SOFTWARE SYSTEM

#### -WMS-

CIMC WMS 4.0系统是中集天达物流具有自主知识产权的物流管理软件,具有系统操作直观便捷,支持参数化配置,多仓管理等诸多优点,已成功应用于生产制造、电子商务、冷链物流、航空货运、能源化工、医药流通等多个行业,是基于微架构体系和彩页云计算技术打造的最新一代WMS,可部署在公网或私网上,覆盖传统自动化立体库,生产线,物流配送中心等诸多物流场景。

CIMC WMS 4.0 is the logistics management software developed by our company with intellectual property right. It features intuitive and convenient system operation, supports parameterized configuration and multi-warehouse management, etc. And has been successfully applied into many industries such as manufacturing, e-commerce, cold chain logistics, air cargo, energy and chemical industry and pharmaceutical circulation. As the newset generation of WMS based on microarchitecture system and cloud computing technology, it can be deployed on public network to catering for numerous logistics requirement such as traditional automatic stereoscopic warehouse, production line, distribution center etc.

#### WMS系统



#### -WCS-

#### 一、系统可视化监控及管理

#### Visual Monitoring and Management of System

- 1、设备监控
- 整体、区域、设备三层运行监控
- 系统运行效率及设备使用率监控

#### 1. Equipment Monitoring

- O Overall, Local and Equipment Operation Monitoring.
- System Operation Efficiency and Equipment Utilization Monitoring.

#### 2、设备管理

- O 设备履历及OEE管理
- O 设备维保、备品备件、设备SOP

#### 3、设备预警

- O 异常报警、统计
- O维保提醒、处理建议

#### 4、设备集成

○ 立体库、输送线、分拣线、AGV\_ 机器人、制冷系统等设备。

#### 2. Equipment Management

- O Equipment Record and OEE Management.
- O Equipment Maintenance, Spare Parts and Equipment SOP.

#### 3. Early Warning of Equipment

- O Abnormity Alarm and Statistics.
- O Maintenance Reminder and Disposal Suggestions.

#### 4. Equipment Integration

Tridimensional Warehouse Supports Conveyors, Sorting Lines,
 AGV, Robots, Refrigeration Systems and other Equipment.



#### 二、系统调度任务管理

#### **System Scheduling Task Management**

WCS通过控制硬件设备完成WMS下达的作业任务; 对作业进行合理调度及查询统计分析。

WCS completes the tasks assigned by WMS by controlling hardware equipment, conducts the reasonable scheduling of operations, and analyzes the query statistics.





#### 系统集成 SYSTEM INTEGRATION

中集天达可根据客户的需要提供"一站式"解决方案,应用先进的物流装备和控制系统,集成一系列子系统 (如:立体仓库、输送系统、分拣系统、AGV系统、机器人、上位管理系统等)于一体,为客户提供"交钥匙工程"。

CIMC Intralogistics offers the "one-stop" solution according to clients' requirement and applies the most advanced and modern logistics equipment, integrating various subsystems (i.e. automatic storage and retrieval system, conveying system, sorting system, AGV system, robot, upper management system etc.), to deliver the best value projects to clients based on turnkey.



搬运设备、输送分拣 设备、存储系统 Conveying System,



生产线对接



核心或非标 设备研发设计 R&D and Design /Automatic Loading | Standard Equipment |



电气控制 and SCADA



外部软件 (ERP. MES) 对接 External Software

#### 质量/环境/安全管理体系

#### **QUALITY/ENVIRONMENT/SAFETY MANAGEMENT SYSTEM**

公司自1992年起就建立了ISO9000体系,并建立了里程碑式项目管理流程;经过近三十五年的积累,中集天达的项 目管理和实施团队可以确保项目在承诺的工期和质量要求下顺利交付。

欧盟钢结构建筑焊接资质认证、立体库产品、特装设备制造、安装、改造&维修许可证。

焊接质保认证体系、质量管理体系认证、职业健康与安全管理体系认证、环境管理体系认证、CE认证、3C认证、 TUV认证。

We have set up ISO9000 system since 1992 and the milestone project management process.

With nearly 35 years accumulation, our project management and implementation team can ensure the smooth delivery as per stipulated schedule and quality.

EU steel structure building welding qualification certification, stereoscopic warehouse product, special equipment manufacturing, installation, transformation & maintenance license.

Welding quality assurance system certification, quality management system certification, occupational health and safety management system certification, environment management system certification, CE certification, 3C certification, TUV certification.





#### 项目实施能力

#### **PROJECT IMPLEMENTATION CAPACITY**

公司采用三维软件进行设计,通过PLM传送到工艺部门,工艺部门采用CAPP实现工艺文件的编制,并在MRPH生 产管理系统上形成生产计划,从而实现从设计到生产过程的信息化管理,确保生产过程可控。

从进场准备、开工报审和进场报验,到安装实施和报验、调试实施和验证、试运行和验收(含行业验收)均严格按 照《机电工程施工管理规范》和公司《里程碑式项目管理流程》执行,确保规范施工、安全可靠交付。

With three-dimensional design software, the company delivers information to the engineering department through PLM, and then the corresponding documents are compiled via CAAP, and the final production schedule is formulated through MRPH. We can realize the whole information management from design to production to ensure that the production process can be controlled.

From incoming preparation, commencement report and site inspection, to installation and inspection, commissioning and verification, trail run and acceptance (including industry acceptance) are carried out in strict accordance with the Standards on Electromechanical Engineering Construction Management and the company's Project Management Process, ensuring standard construction and safe and reliable delivery.



电气装配:无纸化流水作业 Electric Assembling: Paperless Line Production



煎切 冲压工位 Shearing and Stamping of the Station



机器人焊接 白动翻身 Robot Welding and Automatic Turning



全封闭喷涂线 Closed Spray Line



激光切割下料工位 Laser Cutting of Unloading Device



原材料表面预处理 Surface Pretreatment of Raw Material





组装测试/Integration and Test

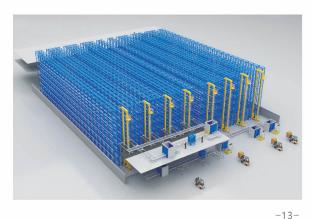
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#### 融资租赁

#### **FINANCIAL LEASE**

借助中集集团强大的金融支持,公司还在行业内首推了融资租赁和经营租赁的增值服务,帮助客户融通资金。租赁范围不仅涵盖了中集天达提供的自动化仓储物流系统,还可以包含周边配套设备。这项服务可申请免抵押、免担保、最低零首付、最高10年还款期限,利率与同期银行贷款利率相当。



Supported by the Group, CIMC Intralogistics has brought the value-added services as capital leasing and operational leasing into this industry firstly. Besides automatic warehouse and logistics system, we have also extended the leasing service to the civil works and relevant equipment etc. The leasing does not require mortgage or guarantee, with down to zero advance payment. The leasing period could be to 10 years at an interest rate equal to the bank loan rate for the same period.

### 售后服务

#### **AFTER-SALES SERVICE**

我们的目标:快速响应、专业服务、客户满意。

中集天达有一支经过严格培训的维修服务队伍,在多年服务的实践中积累了丰富的经验。售后可根据用户需求提供 运维保驾、定期保养、紧急维修、技术支持及备件供应等个性化服务。

中集天达建立了覆盖全球的售后服务网点,24小时响应客户服务要求。

To US: Customer is top priority and we are always well-prepared for offering timely and professiona service.

The abundant experiences in airport industry have helped CIMC Intralogistics to set up a well-trained and experienced after-sales service team. According to customer's requirement, we can provide personalized services such as operation and maintenance quotation, regular maintenance, emergency maintenance, technical support and spare parts supply according to user needs.

Our global after-sale service network can deliver prompt and efficient levels of support around the clock in case of any emergency.



#### 常驻维保点 Permanent Maintenance Point



#### 制造基地 Manufacturing Base

国内:北京、上海、天津、烟台、南京、深圳、成都、长沙

国外:美国、欧洲、新加坡、澳大利亚、德国

Domestic: Beijing、Shanghai、Tianjin、Yantai、Nanjing、
Shenzhen、Chengdu、Changsha

Abroad: U.S.A, Europe, Singapore, Australia, Germany

深圳、昆山、廊坊、沈阳、成都 Shenzhen、Kunshan、Langfang、Shenyang、 Chengdu

沟通渠道/Communication Channels 电话、邮件、微信专群、VPN/远程 Tel、E-mail、Wechat Group、VPN/Remote

各省会城市中集集团各业务售后资源联营

Joint Operation of After-Service Resources of Each Business of CIMC in Each Provincial Capitals

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- 租金分期偿还,缓解资金支付压力
- 融资渠道多元,规避短贷长投风险
- 融资门槛合理,不动产抵押非必须
- 租赁方案灵活,便于预算资金管理
- 快速启动项目,发挥规模经营优势
- Rent repaid in installments, easing the pressure on capital payments.
- Diversified financing channels, avoiding the risk of short-term loans and long-term investments.
- Reasonable financing thresholds, real estate mortgages are not required.
- Customized leasing proposals for easy budgetary fund management.
- Quickly launch projects to take advantage of scale operation.

## TACTE | ED | PETROCHEMICAL INDUSTRY

某大型石化自动化立体库

A Large Petrochemical Automated Stereoscopic Warehouse

#### 项目概述/Project Overview

- O 石化行业超大型立体仓库项目,包含5座36米高自动化立体仓库,堆垛机高度达33.98米。
- O 立体仓库采用高速环穿系统全自动连通至包装车间,实现全自动共享托盘供给及成品入库。配置有园区内车辆管理系统,实现全区内车辆的智能调度。
- O It is a super large scale project in petrochemical industry, including 5 automatic three-dimensional warehouses which are 36 meters high , and the height of stacker is 33.98 meters.
- O The automatic stereoscopic warehouse is automatically connected to the packaging workshop with a highspeed loop system to realize the automatic sharing of pallet supply and finished products storage. Equipped with the vehicle management system, to achieve intelligent vehicle scheduling in the whole area.

#### 项目情况/Core Parameters



出入库能力: 2,700P/小时 Capacity of Loading and Unloading: 2,700P/hour



环形穿梭车: 230台 Circular Shuttle: 230

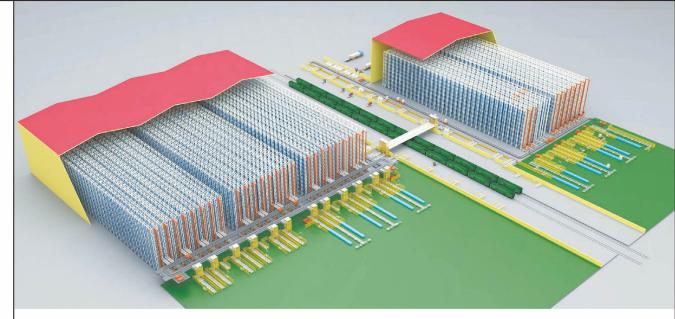


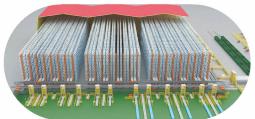
堆垛机数量: 89台 Quantity of Stackers: 89

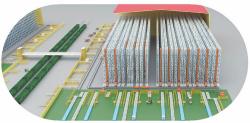


货位数:114,106个 Number Goods Allocation: 114,106









宁夏宝丰聚烯烃立体库

#### Ningxia Baofeng Polyolefin Automated Stereoscopic Warehouse

#### 项目概述/Project Overview

- O 立体仓库分为南库和北库, 共对接19条成品自动包装码垛线。
- O 立体库与包装区、发货区之间采用环穿穿梭车接驳,单个环最多34台穿梭车同时运行。
- O 立体仓库发货区可同时对接24节火车车厢+16台汽车发货口;每小时最大发货量700T。
- O Automated Stereoscopic warehouse contains the south and north warehouses, docking a total of 19 finished products automatic packaging stacking line.
- O The circular shuttle is used to connect the automated stereoscopic warehouse with the packaging area and the delivery area. Up to 34 shuttles can operate simultaneously.
- O The delivery area of the automated stereoscopic warehouse can dock 24 trains and 16 automobile delivery ports at the same time; The maximum shipment per hour is 700T.

#### 项目情况/Core Parameters



货位数: 46,472托盘位 Number of Goods Allocation: 46,472



环形穿梭车: 110台 Circular Shuttle: 110



堆垛机数量: 37台 Quantity of Stackers: 37



出入库能力: 1,300托/小时 Capacity of Loading and Unloading: 1,300 Tray/hour

## T石化行业 | Empetrochemical industry

福州万华PVC自动化立库

#### Fuzhou Wanhua PVC Automatic Stereoscopic Warehouse

#### 项目亮点

- O 与生产线自动对接,满足成品自动入库、补充空托盘及辅料至产线的需求。
- O 系统兼容吨袋托盘及小袋托盘的输送及存储。
- O 出库配置小袋成品翻转换托设备,可实现小 袋成品的自动换托盘出库需求。
- O 出库配置吨袋换盘机,可实现吨袋成品的自 动换托盘出库需求。

#### **Project Highlights**

- Automatic docking with the production line to meet the needs of automatic storage of finished products, replenishment of empty pallets and auxiliary materials to the production line.
- The system is compatible with the delivery and storage of ton bag pallets and small bag pallets.
- O The warehouse is equipped with a small bag of finished product conversion support equipment, It can realize the automatic pallet change ex-warehouse of small bag finished products.
- Ex-warehouse equipped with ton bag changing machine, It can realize the automatic pallet change of finished products in tons of bags.

#### 项目情况/Core Parameters



货位数: 19,784个 Number of Goods Allocation: 19,784



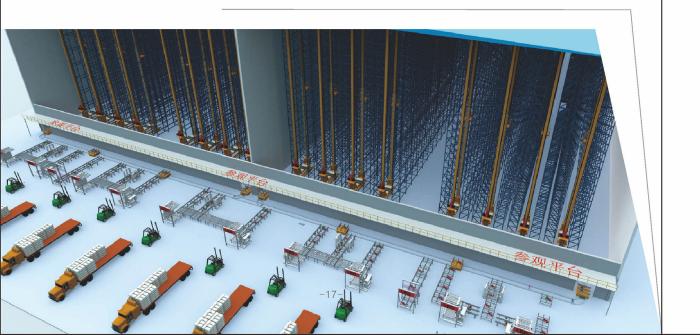
环形穿梭车: 20台 Circular Shuttle: 20

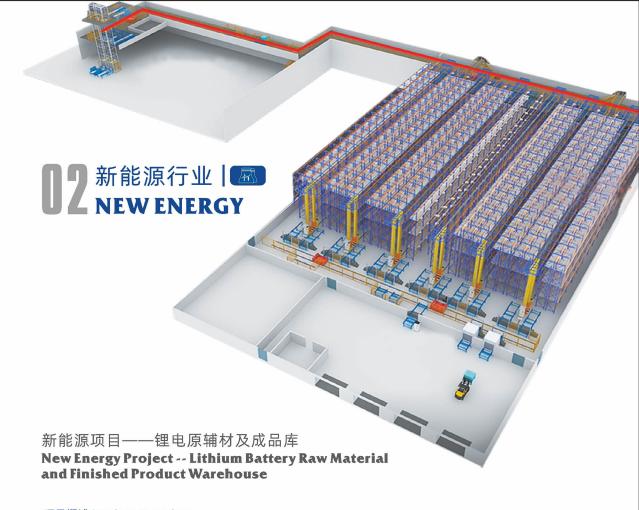


堆垛机数量: 20台 Quantity of Stackers: 20



出入库能力: 638.4托/小时 Capacity of Loading and Unloading: 638.4 Tray/hour





#### 项目概述/Project Overview

项目包含电极原材料库、电芯成品库、装配原材料库、正极箔材保管室、负极箔材保管室、负极涂布辊料保管室、 负极涂布辊料保管室、正极模切缓存间、负极模切缓存间和模组生产线-模组成品输送线等10个子系统。

The project includes 10 subsystems, including the raw electrode material warehouse, finished battery-cell warehouse, warehouse of raw materials for assembly, anode foil storeroom, cathode foil storeroom, anode applicator roll storeroom, anode module cutting cache room, cathode module cutting cache room, module production line-finished module conveying line, etc.

#### 项目情况/Core Parameters



货位数: 12,246个货位 Number of Goods Allocation: 12,246



三坐标机械手: 6台 Three-Coordinates Manipulator: 6



堆垛机数量: 16台 Quantity of Stackers: 16



AGV: 6台 AGV: 6

### 12 新能源行业 I 图 NEW ENERGY

新能源项目——箔材及Pack结构件库
New Energy Project -- Foil and Pack Structural Parts

#### 项目亮点

- O 项目旨在实现自动化控制、精确物流控制。
- O 依客户要求实施先进先出管理,并可以实现月度、 年度盘点。
- O 项目可自动拆包、空包装箱回库、空托盘码盘回库。
- O 各区域配备电子看板。

#### **Project Highlights**

- The project aims to realize automatic control and precise logistics control.
- Implement FIFO MANAGEMENT and can realize monthly and annual inventory.
- Automatically unpacked, empty packing boxes and trays returned to the warehouse.
- Each area is equipped with electronic display board.

#### 项目情况/Core Parameters



货位数: 4,344个货位 Number of Goods Allocation: 4,344



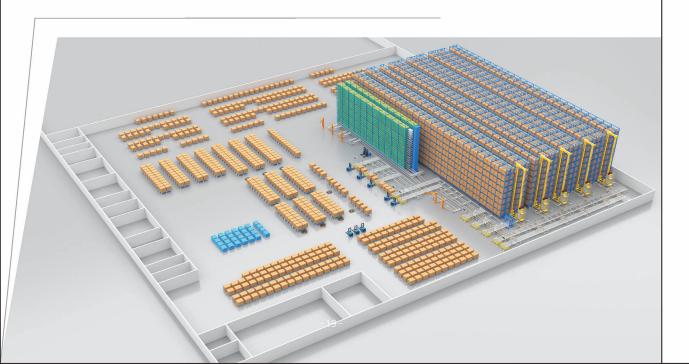
输送机数量: 166台 Quantity of Conveyor: 166

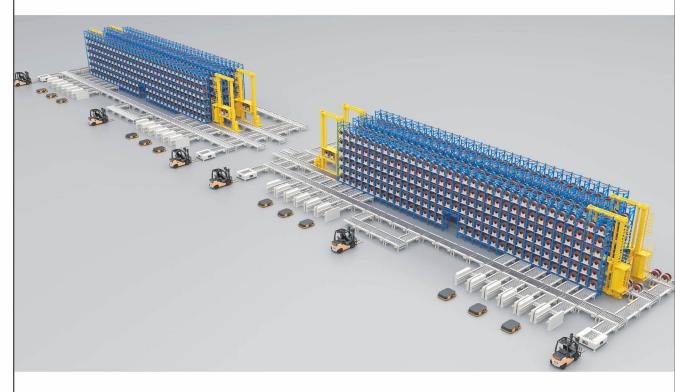


堆垛机数量: 6台 Quantity of Stackers: 6



KBK超重起重机: 1台 KBK Heavy duty crane:1





#### 新能源项目——极片库 New Energy Project -- Pole Film Warehouse

#### 项目概述/Project Overview

- 满足新能源洁净度、温度、湿度要求,阴极和阳极采用不同的温湿度控制。
- 任何一台关键设备(如堆垛机、提升机)故障,不影响整体系统运行,系统稳定性极高。
- 极片入库采用缓存配对模式,双入双出的出入库模式大大提升系统出入库效率。
- O The project meets the requirements of cleanliness, temperature and humidity. The cathode and anode adopt different temperature and humidity controls.
- Any key equipment (such as stacker, hoist) failure, does not affect the overall system operation, the system stability is very high.
- O The chip storage adopts the cache matching mode, and the double-in and double-out mode greatly improves the efficiency of the system storage.

#### 项目情况/Core Parameters



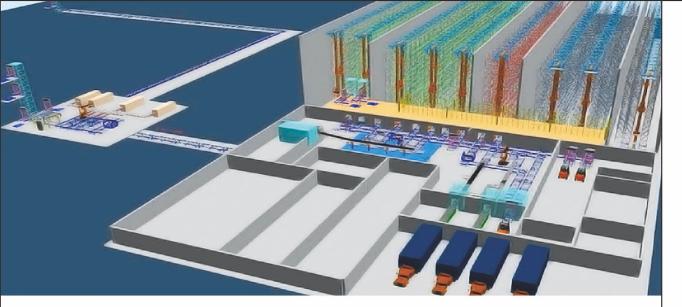
货位数: 阴极库824个货位,阳极库800个货位 Number Goods Allocation: The Cathode Library: 824, The Anode Library: 800



双工位堆垛机: 4台 Double Station Stacker: 4



出入库能力:300托/小时 Capacity of Loading and Unloading: 300 Tray/hour



### ■ 生物医药 | ■ BIO-PHARMACEUTICAL INDUSTRY

远大蜀阳血浆冻库

#### Yuan Da Shu Yang Plasma Freezer

#### 项目亮点

- 集成整套制冷系统(含多个温度及湿度控制分区),系统最低温度-30°C,局部温差小于1°C。
- O 实现原料血浆袋的收货全自动码盘速冻、自动 拆垛质检、全自动码盘入库、根据血源管理系 统挑浆配盘,自动配送至车间拆盘投料等全套 血浆物流自动仓储及配送工序。
- O 血浆袋的自各地浆站至生产车间的全流程信息 管控及温度监控。
- O 严格的多重信息校验系统,确保物料信息准确。

#### **Project Highlights**

- Integrate a complete set of refrigeration system (including multiple temperature and humidity control partitions), with the minimum system temperature of -30°C, and the local temperature difference less than 1°C.
- O Achieve the complete set of automatic storage and deliver process for plasma logistics receiving and full-automatic pallet-sorting and quick-freezing of bulk plasma bags, automatic un-stacking and quality inspection, full -automatic encoding and warehousing, to allocate bloods into pallets according to the category of the plasma by blood management system and deliver the pallets to the workshop to conduct the complete set of plasma automatic storage and delivery including automatic pallet -disassembling and feeding.
- Information control and temperature monitoring of the whole process of plasma bags delivering from the plasma stations to the production workshop.
- o Strict multiple information checking system, to ensure the accuracy of material information.

#### 项目情况/Core Parameters



血浆仓储量: 1,000吨 (49,600托盘) Plasma Storage Capacity: 1,000t (49,600 Pallets)



制冷系统: 1套 Refrigeration System: 1



堆垛机数量: 3台 Quantity of Stackers: 3



拣选机器人:7台 Sorting Robot:7

#### 稳健医疗自动化立体库

#### Winner Medical Company Automatic Stereoscopic Warehouse

#### 项目亮点

- O 与客户WMS系统进行无缝对接,实现原 材料、产品的自动化存储和配送。
- O 原材料、成品与生产车间通过AGV进行 自动化对接,实现车间物流无人化操作。
- O 配置非常有完善的安全控制系统,确保 系统及人员安全(安全控制分区、安全 控制回路、配置安全锁的安全护栏、安 全光栅等安全措施)。

#### **Project Highlights**

- Seamless docking with WMS system to realize automatic storage and distribution of raw materials and products.
- Raw materials, finished products and production
   workshops are automatically connected through AGV, to
   realize unmanned operation of workshop logistics.
- Equipped with perfect security control system to ensure
  the safety of the system and personnel (Safety control
  partition, safety control loop, safety guardrail with safety
  lock, safety grating and other safety measures).

#### 项目情况/Core Parameters



货位数: 12,600个 Number of Goods Allocation: 12,600



堆垛机数量: 10台 Quantity of Stackers: 10



输送机数量: 363台 Quantity of Conveyor: 363



出入库能力: 567托/小时 Capacity of Loading and Unloading: 567 Tray/hour





### **□** 生物医药 | **□** BIO-PHARMACEUTICAL INDUSTRY

华东医药自动化立体库

#### **Hua Dong Medicine Automated Stereoscopic Warehouse**

#### 项目亮点

- O 配置风淋系统、自动贴标系统、自动在线称重、 全自动喷胶系统(确保垛型稳定)、全自动换夹 具机器人自动码垛系统等,实现袋装、桶装、箱 装原辅料全自动码盘入库。
- 实现袋装原料的全自动拆垛拣选后直接投入发酵罐(配置多次重量及条码复核系统确保物料准确)。
- O 采用AGV系统实现原辅料配送至车间各工位及空 托盘回收。
- 成品下线自动贴标并实现物流码及药监码自动绑定后输送至码垛区码垛入库。
- O 实现26条产线同时生产时仅使用4台机器人的码 垛技术(建立码垛缓存池)。

#### **Project Highlights**

- O It is equipped with the air shower system, automatic labeling system, automatic online weighing and full -automatic glue spray systems (to ensure the stable stack type), full-automatic fixture-changing robot and automatic stacking system, achieving the full-automatic encoding and warehousing of the raw and auxiliary materials in bags, barrels and containers.
- It can directly put the bagged raw materials into the fermentation tank after the full-automatic un-stacking and sorting (it is equipped with the weight and barcode multiple review system to ensure the accuracy of materials).
- It adopts the AGV system to deliver the raw and auxiliary materials to stations in the workshop and retrieve empty pallet.
- The finished products will be automatically labeled, and be delivered to the stacking area for stacking and warehousing after its logistics code binds SPDA code.
- O It achieves the stacking technologies that can simultaneously product 26 production lines with only 4 robots (establishing the stack cache).

#### 项目情况/Core Parameters



货位数: 19,600个 Number Goods Allocation: 19,600



仓库面积: 9,600m<sup>2</sup> Warehouse Area: 9,600m<sup>2</sup>



堆垛机数量: 11台 Quantity of Stackers: 11



拆码垛机器人: 9台 Unstacking Robot: 9

#### 成都生物疫苗自动化立体库

#### Chendu Institute of Biology Vaccine Automated Stereoscopic Warehouse

#### 项目亮点

- O AGV全自动搬运存储。
- O 自动化设备与冷链设备全程无缝对接实现冷链 不断链。
- O 疫苗发货机器人自动拣选、搬运、装车,大大 降低人员作业压力。
- O 制冷系统与自动化设备联合设计,温湿度均匀 性充分满足疫苗存储严格要求。

#### **Project Highlights**

- O AGV handling and storage.
- Automation equipment and cold chain equipment
   seamless docking to achieve continuous cold chain.
- Vaccine delivery robots can automatically pick, transport and load vehicles, greatly reducing the working pressure of personnel.
- The refrigeration system and automation equipment are jointly designed, the temperature and humidity uniformity fully meets the strict requirements of vaccine storage.

#### 项目情况/Core Parameters



货位数: 7,834个 Number Goods Allocation: 7,834



输送机数量: 128台 Quantity of Conveyor: 128

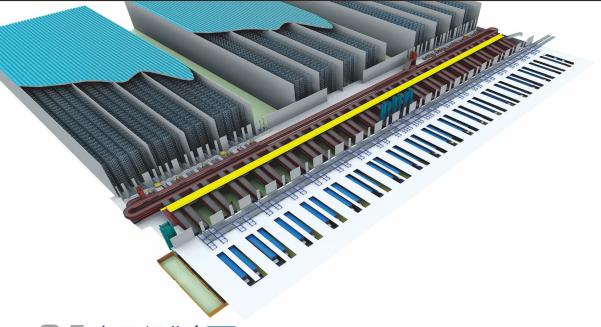


堆垛机数量: 6台 Quantity of Stackers: 6



叉车式AGV数量:7 Quantity of AGV:7





### **↓** 家居行业 **│ ● ● ● ● ● OUSEWEAR INDUSTRY**

全友家居自动化立体库

Quanyou Furniture Automated Stereoscopic Warehouse

#### 项目亮点

- O 攻克家具行业全自动拣选分拣难题,实现了大包件 产品全自动拆垛机器人拣选、配置预装车软件实现 全自动分拣直接装车等模式。
- O 实现5栋车间与自动化立库的全自动对接。
- o 实现沙发、床垫、板式家具等规格差异很大产品的 一地装车。
- O WMS系统:客户化定制多仓多地联动管理(五地物 流园区和35个线边仓)。

#### Project Highlights

- o Overcome the full-automatic sorting problem of the furniture industry, achieve the sorting by full -automatic un-stacking robot of large packed products, and it is equipped with the Pre-loading software to achieve the automatic sort and direct loading.
- O Achieve the full-automatic connection among 5 workshops and the automatic warehouse.
- O Achieve the loading of sofa, mattress, board-type furniture and other products with the great difference in specification at the same place.
- O WMS system: The multiple warehouses and multiple place linkage management customized by customers (logistics parks in five places and 35 storage areas).

#### 项目情况/Core Parameters



立体仓库规模: 57,600平米立库, 56,888货位 Scale of the Stereoscopic Warehouse: 57,600m3, 56,888 Goods Allocation



激光导航叉车AGV: 20台 Laser Navigation Forklift AGV: 20



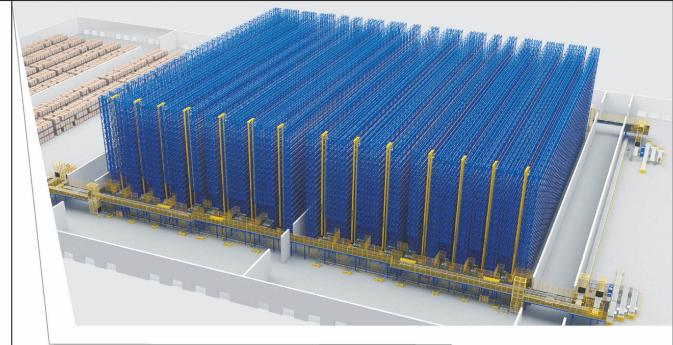
堆垛机数量: 36台 Quantity of Stackers: 36







自动拆垛拣选机器人数量: 22台 Quantity of Automatic Unstacking and Sorting Robot: 22



#### 宜家家居自动化立体库

#### Ikea Supply South China Wholesale and Trading Center Project

#### 项目概述/Project Overview

- 严格按照欧盟标准及国标双重标准执行,并进行TUV认证。
- 非常规的消防配置及要求,单个库区消防面积1.2万平米。
- 实现半托、欧托、宜家托三种托盘及多种货物单元规格货物的搭配存储及共线输送。
- o 配置36米超高速堆垛机14台,采用多深位模式,同一货位兼容1个宜家托、2个欧托及4个半托的混合存储。
- 配置超高速双工位RGV2台,可兼容多种托盘规格混合搬运,搬运能力280p/h。
- In strict accordance with the EU standards and national standards, and TUV certification.
- O Unconventional fire control configuration and requirements, the fire protection area of a single reservoir area reaches 12.000 m<sup>2</sup>.
- O It can realize the collocation storage and collinear transportation of three kinds of pallets, namely Halfpallet, Euro-pallet and IKEA-pallet, and a variety of goods unit specifications.
- O It is equipped with 14 ultra-high-speed stackers of 36 meters, and adopts multi-depth mode. The same cargo space is compatible with mixed storage of 1 IKEA-pallets, 2 Euro-pallet and 4 Half-pallet.
- O Equipped with 2 ultra-high-speed RGVs that is double station, compatible with a variety of pallet specifications mixed handling, handling capacity 280p/h.

#### 项目情况/Core Parameters



货位数: 101.928个 Number of Goods Allocation: 101,928



平库区面积: 40,000m2 Flat Warehouse Area: 40,000m2

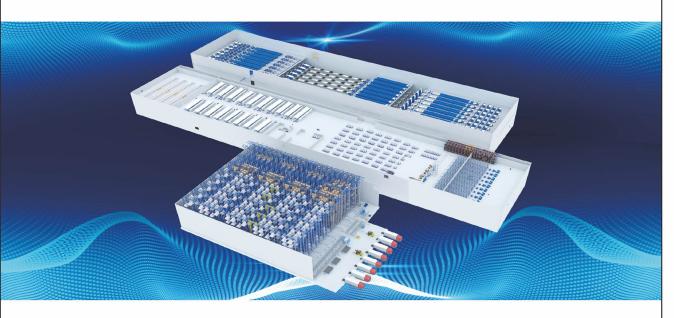


堆垛机数量: 14台 Quantity of Stackers: 14



立库区面积: 24,000m<sup>2</sup> Stereoscopic Warehouse Area: 24,000m<sup>2</sup>

### **□** 智能制造行业 | □ INTELLIGENT MANUFACTURING INDUSTRY



#### 真爱毛毯数字化工厂项目

#### Truelove Blanket Technology Co., Ltd Digital Factory Project

#### 项目亮点

- O 项目范围涵盖生产管理系统(MES)、物流执 行系统(LES)、运输管理系统(TMS)、仓 库管理系统(WMS)、仓库控制系统(WCS)、 多个仓库、各车间物流配送系统、线边生产辅 助设备等。
- O 实现立体仓库、织造车间、染整车间、成品车间的全流程物料拉动及配送的智能化管理。
- O 项目配置1套盘头空中悬挂配送系统、2套各车间AGV配送系统2套(叉式AGV12台,背驼AGV14台)。

#### **Project Highlights**

- O The project covers production management system (MES), logistics execution system (LES), transportation management system (TMS), warehouse management system (WMS), warehouse control system (WCS), logistics distribution system of multiple warehouses and workshops, and auxiliary equipment for line production, etc.
- Realize the intelligent management of material pulling and distribution in the whole process of automatic stereoscopic warehouse, weaving workshop, dyeing and finishing workshop and finished product workshop.
- o The project is equipped with a cross-head aerial hanging distribution system and 2 AGV distribution systems for each workshop (12 forked AGV and 14 mounted AGV).

#### 项目情况/Core Parameters



货位数: 26,376个 Number Goods Allocation: 26,376



AGV数量: 28台 Quantity of AGV: 28



堆垛机数量:13台 Quantity of Stackers: 13



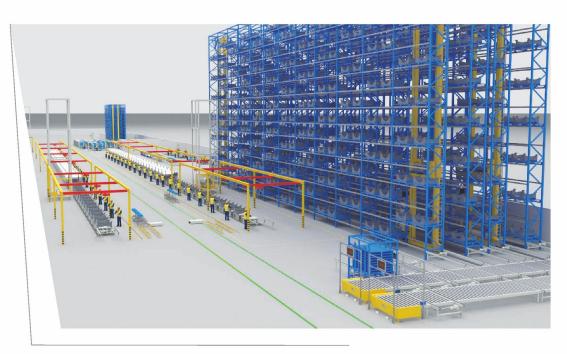
拆码垛机器人:5台 Unstacking Robot:5

#### 圣达因数字化工厂项目

#### **SUNDYNE Digital Factory Project**

#### 项目概述/Project Overview

- 项目包括料箱存储区、框架存储区、零件拣选区、小件预制区、大件预制区、二楼瓶体输送区、AGV拣选区、总装制作区八部分。
- o 由生产调度系统 (PCS)、物料拉动系统 (LES)、仓储设备管理系统 (WCS)、AGV路径调度系统 (RCS)、电子标签管理系统 (DPS)组成。
- 解决物料的配送自动化智能操作,并具备自动跟踪、实时更新功能。
- O The project includes eight parts: material box storage area, frame storage area, parts picking area, small parts prefabrication area, large parts prefabrication area, second floor bottle conveying area, AGV picking area, and final assembly production area.
- o It consists of production scheduling system (PCS), material Pulling system (LES), storage equipment Management system (WCS), AGV Path Scheduling system (RCS), and Electronic label Management system (DPS).
- o Solve the material distribution automation intelligent operation ,automatic tracking, real-time update.



#### 项目情况/Core Parameters



货位数: 6,720个 Number Goods Allocation: 6,720



堆垛机数量: 5台 Quantity of Stackers: 5



AGV数量: 39台 Quantity of AGV: 39

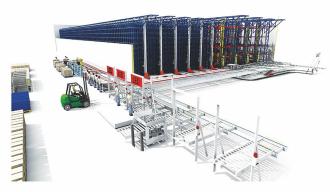
### **IB** 3C电子行业 │ ● 3C ELECTRONICS INDUSTRY

#### 富士康自动化立体库

#### **FOXCONN Automated Stereoscopic Warehouse**

#### 项目概述/Project Overview

本项目由AS/RS Unit-load仓库货架系统、Miniload立体仓库货架系统、电子标签播种货架系统、输送系统、电气控制系统ECS、调度系统WCS共6个子系统组成。按照客户要求进行了多项软件系统定制化开发,适应电子行业高标准要



The project is composed of AS/RS Unit-load warehouse shelf system, Miniload 3D warehouse shelf system, and electronic label tagging shelf system, conveying system, electrical control system (ECS) and dispatching system. Customize and develop multiple software according to customers' requirements, to meet the high standards of the electron industry.

#### 项目情况/Core Parameters



托盘库: 1,412托, 料箱库: 25,452箱 Number of Goods Allocation: Tray Warehouse: 1,412 Trays, Work Bin Warehouse: 25,452



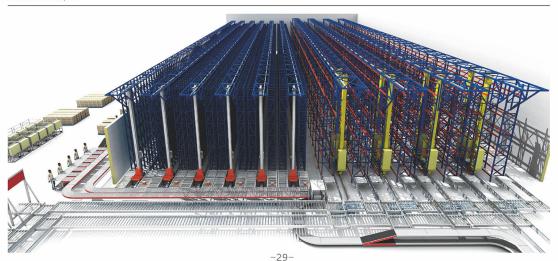
高速双工位料箱堆垛机:6台 AHigh-Speed Double-Station Container Stacker:6



堆垛机数量: 4台 Quantity of Stackers: 4



移动机器人配合电气标签拣选墙: 1套 Mobile Robot Sorting Wall with the Electronic Label: 1





#### 华星光电自动化立体库

#### **Huaxing Photoelectric Automated Stereoscopic Warehouse**

#### 项目亮点

- O 与洁净室车间设备无缝全自动化对接。
- O 系统兼容大中小三种模式托盘。
- O 系统采用子母托盘模式,实现了全自动拆/套母托 盘出入库。
- O 配置非常有完善的安全控制系统,确保系统及人员安全(安全控制分区、安全控制回路、配置安全锁的安全护栏、安全光栅、安全门等安全措施)。
- 完善的设备控制分区备份设置,任何一个分区设备可单独检修,不影响整个系统任何一个功能的正常运行。

#### **Project Highlights**

- o Smooth full-automatic connection with the equipment in clean room.
- The system is compatible with big, medium and small pallets
- It adopts the primary-secondary pallet mode, and achieves the automatic primary pallet disassembling /assembling for delivery and warehousing.
- It is equipped with a complete safety control system, to ensure the security of the system and personnel (safety control partition, safety control loop, safety fence with safety lock, safety grating, safety door and other safety measures).
- Perfect backup setting for equipment control partition, equipment in any partition can be inspected and repaired independently, without any impact to the normal operation of any function of the whole system.

#### 项目情况/Core Parameters



货位数: 32,500个 Number of Goods Allocation: 32,500



环穿系统: 8台 Annulus System: 8



堆垛机数量: 30台 Quantity of Stackers: 30



出入库能力:1,200托/小时 Capacity of Loading and Unloading: 1,200 Tray/hour

## **ID** 3C电子行业 │ ● 3C ELECTRONICS INDUSTRY

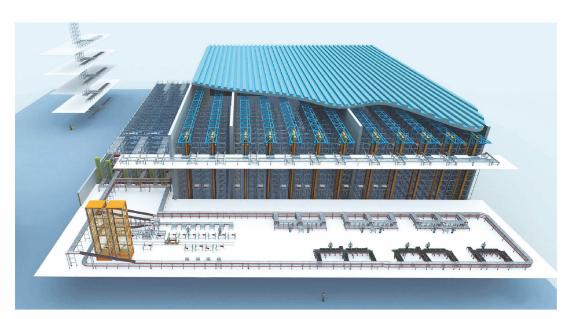
环胜电子自动化立体库 USI Electronics Co., Ltd. Automatic Stereoscopic Warehouse

#### 项目亮点

- O 电子行业产线配套仓库典型项目,采用自动化托 盘立库仓储及配送包材、大件原辅料、成品。
- O 采用高速料箱多穿系统仓储、拣选及配送电子料。
- O 配置11套托盘和11套料箱货到人拣选工作站,按 照产线MES系统指令按工单拣选,并实现全自动 化配送至产线各个楼层及工位。

#### **Project Highlights**

- Typical projects for production lines in the electronics industry, using automated pallet warehouse storage and distribution of packaging materials, large raw and auxiliary materials, and finished products.
- Adopt high speed workbin multi-layer shuttle system to store, select and distribute electronic materials.
- O The project is equipped with 11 pallet-to-person picking workstations and 11 boxes of cargo-to-person picking workstations. It elects by work order according to the MES system instruction of the production line, and realizes fully automated distribution to each floor and station of the production line.



#### 项目情况/Core Parameters



货位数: 14,540托盘, 21,120料箱 Number of Goods Allocation: 14,540 pallets, 21,120 workbins



托盘货物: 461托/小时 Warehousing and Delivery Capacities of System: Pallet Cargo: 416 Tray/hour

-31-



料箱货物: 3,000箱/小时 Warehousing and Delivery Capacities of System: Work Bin Cargo: 3,000 Work Bins/hour

### **17**食品冷链 │ **★ COLD-CHAIN PRODUCTS**

玉湖冷链自动化立体库

#### Yuhu Cold Chain Automatic Stereoscopic Warehouse

#### 项目亮点

- O 自动立库柔性化设计,以兼容多规格货物品类。
- O 采用先进的高速堆垛机保证仓库的出入库效率, 共部署6台堆垛机100余台输送机,同时配置 WMS、WCS系统。
- 冷库全年连续工作,大大减少人工劳动强度、降低物流费用,提升了土地资源利用率等。
- 设计智慧园区一体化管理平台,采用多批次混 批次等多类逻辑,以完成对电商订单的拣选。

#### **Project Highlights**

- O Flexible design for multi-specification cargo categories.
- Advanced high-speed stacker is used to ensure the efficiency of warehousing and unloading. A total of 6 stackers and more than 100 conveyors are deployed, WMS and WCS systems are configured.
- The cold storage works continuously throughout the year, greatly reducing the labor intensity and logistics costs, and improving the utilization rate of land resources.
- Intelligent park integrated management platform, using multi-batch and mixed batch and other types of logic to complete the selection of e-commerce orders.

#### 项目情况/Core Parameters



货位数: 25,920个 Number of Goods Allocation: 25,920



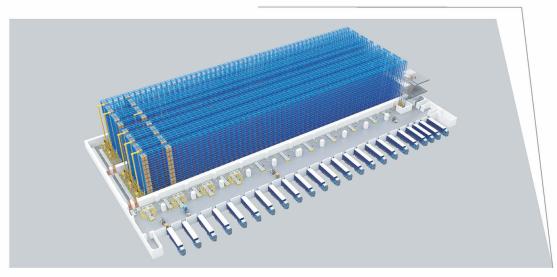
提升机:8台 Hoister:8



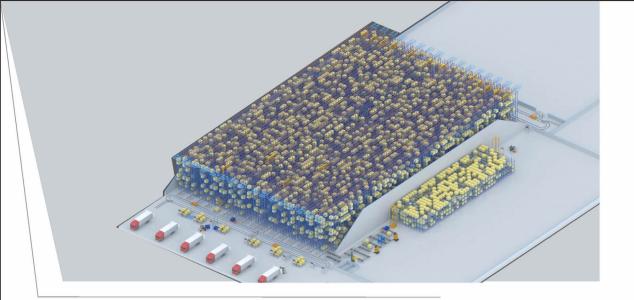
垂直升降保温门: 6套 Vertical Lift Thermal Insulation



缠膜机: 4套 Wrapping Machine: 4



-32-



## 

江门康师傅自动化立体库

Jiangmen Master Kong Automatic Stereoscopic Warehouse

#### 项目亮点

- 项目为成品综合配送一体的智慧工厂项目。
- O 配置14台33米堆垛机,最大化实现库存存储。
- 库前库后均采用自动化环穿提高出入库效率及灵活性。
- O 自动化立体仓库采用柔性化设计,以兼容多 规格货物品类。
- O WMS系统自动与ERP系统实时对接。

#### **Project Highlights**

- A smart factory project with integrated distribution of finished products.
- O Equipped with 14 stackers (33-meter) to maximize inventory storage.
- Automatic looping is used in front and back of the warehouse to improve the efficiency and flexibility of the warehouse.
- The warehouse adopts flexible design to be compatible with multi-specification goods categories.
- O The WMS system automatically interconnects with the ERP system in real time.

#### 项目情况/Core Parameters



货位数:36,140个货位 Number of Goods Allocation: 36,140



堆垛机数量: 14台 Quantity of Stackers: 14



RGV数量: 17台 Quantity of RGV: 17



出入库能力: 280托/小时(出库)、200托/小时(入库) Capacity of Loading and Unloading: 280Tray/hour (Loading) 200Tray/hour(Unloading)

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#### 化工备品备件自动化立体库

#### **Chemical Spare Parts Automatic Stereoscopic Warehouse**

#### 项目概述/Project Overview

针对备品备件库特点,考虑投资性价比,配置9台道岔堆垛机。堆垛机可根据需求更换巷道作业,大大提升系统可靠性。智能化WMS系统,智能分析备件出入库热度,合理分配仓储位置提升出入库时效性。

According to the characteristics of spare parts warehouse and considering the cost performance of investment, 9 turnout stacker are configured. The stacker can replace the roadway according to the demand, greatly improving the reliability of the system. WMS system intelligently analyzes the heat of spare parts in and out of storage, reasonably distributes the storage location to improve the timeliness of storage in and out.

#### 项目情况/Core Parameters



货位数: 47,376个 Number of Goods Allocation: 47,376



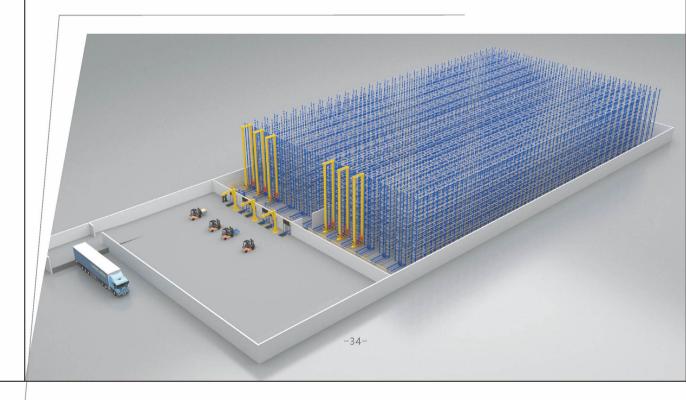
道岔堆垛机数量: 9台 Quantity of Stackers: 9



环穿系统: 2套 Annulus System: 2



出入库能力: 300托/小时 Capacity of Loading and Unloading: 300 Tray/hour



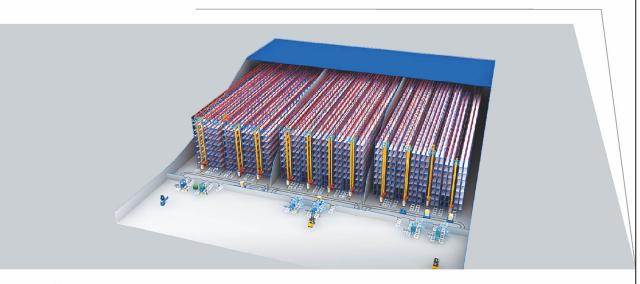
### **■** 印刷行业 | ■ PRINTING INDUSTRY

河南新华物资集团自动化立体库

#### HENAN XINHUA MATERIALS GROUP., LTD Automated Stereoscopic Warehouse

#### 项目概述/Project Overview

- 由存储区和出入库区组成,存储区分为纸卷存储区、纸板存储区和第三方物资存储区。
- o 配置有12个巷道的双深位货架,配置12台双深位的堆垛机。巷道占用体积小,空间有效利用率高,能存储约3.7万吨纸板纸卷。
- o 货架设计考虑兼容性原则, 纸板/第三方物资存储区及纸卷存储存储区可兼容纸板1.5t, 纸卷1t物料存储。
- 出入口可以相互备用,运营灵活性更高,避免了资源浪费或者不足。
- It is composed of storage area and access area. The storage is divided into paper roll storage area, cardboard storage area and third-party material storage area.
- O It is equipped with 12 double-deep shelves and 12 double-deep stackers. The roadway occupies a small volume, the effective utilization rate of space is high, and it can store about 37,000 tons of cardboard rolls.
- The shelf design considers the principle of compatibility, and the cardboard/third-party material storage area and paper roll storage area can be compatible with 1.5t cardboard and 1t paper roll material storage.
- Entrances and exits can be mutually standby, so the operation flexibility is higher, avoiding waste or insufficient resources.



#### 项目情况/Core Parameters



货位数: 22,992个 Number of Goods Allocation: 22,992



堆垛机数量: 12台 Quantity of Stackers: 12

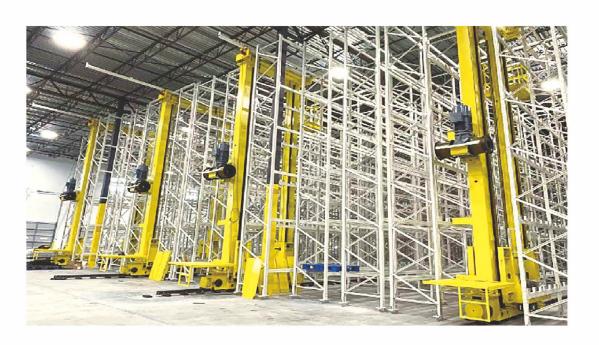


RGV数量: 11台 Quantity of RGV: 11



出入库能力: 516托/小时 Capacity of Loading and Unloading: 516 Tray/hour

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#### 万邑通自动化立体库

#### WINIT CORPORATION Automated Stereoscopic Warehouse

#### 项目亮点

- 跨境电商托盘存储分拣一体化全流程智能 解决方案。
- O 仓储管理及控制系统和跨境电商上位系统 完美交互。
- O 强大的RGV调度策略同时满足收货及托盘的在线拣选。
- 强大的海外物流系统交付团队,保证客户 顺利上线。

#### **Project Highlights**

- Cross-border e-commerce pallet storage and sorting integrated whole process intelligent solution.
- Perfect interaction between WMS & WCS and cross
   -border e-commerce upper system.
- Intelligent RGV scheduling strategy meets both receiving and online pallet picking.
- Strong overseas logistics system delivery team to ensure the smooth launch of customers.

#### 项目情况/Core Parameters



货位数: 12,720个 Number of Goods Allocation: 12,720



堆垛机数量: 8台 Quantity of Stackers: 8



RGV数量: 13台 Quantity of RGV: 13



出入库能力: 282托/小时 Capacity of Loading and Unloading: 282 Tray/hour

#### ¶机场货站 | ❤️ AIRPORT CARGO TERMINAL INDUSTRY

北京大兴机场航空货库

#### **Beijing Daxing Airport Air Cargo Terminal**



#### 项目概述/Project Overview

2019年建国70周年献礼工程,设计货邮吞吐量为 60万吨/年,占地面积7.7万m²含国际货站1号库,国 际货站2号库,国际货站3号库,国内货站。

It is the project celebrating the 70th anniversary of the founding of the People's Republic of China in 2019. With the designed goods handling capacity of 600,000t/year, the project covers an area of 77,000m<sup>2</sup>, including the international cargo terminal No.1, international cargo terminal No.2, international cargo terminal No.3 and domestic cargo terminal.



#### 项目情况/Core Parameters



ULD集装货位: 514货位 Loading Goods Allocation of ULD Container: 514



散货笼车货位: 1,440个 Goods Allocation of Cage Trolley for Bulk Goods: 1,440



堆垛机数量: 2台 Quantity of Stackers: 2



13.6吨5层ETV: 2台 13.6t 5-Layer ETV: 2

### 部分客户 | 🕶 **SOME CUSTOMERS**



































































































注: 合作客户, 排名不分先后! Note: Cooperators are Listed in Random Order!

## 部分客户 | **☞** SOME CUSTOMERS

































































































注:合作客户,排名不分先后!

Note: Cooperators are Listed in Random Order!