

青岛海琅控股有限公司

公司网址：
www.doublestar.com.cn

公司地址：
山东省青岛市崂山区文岭路5号白金广场A座

公司电话：
0532-80958056



海琅智能

海琅控股

HILANG HOLDINGS



DOUBLESTAR

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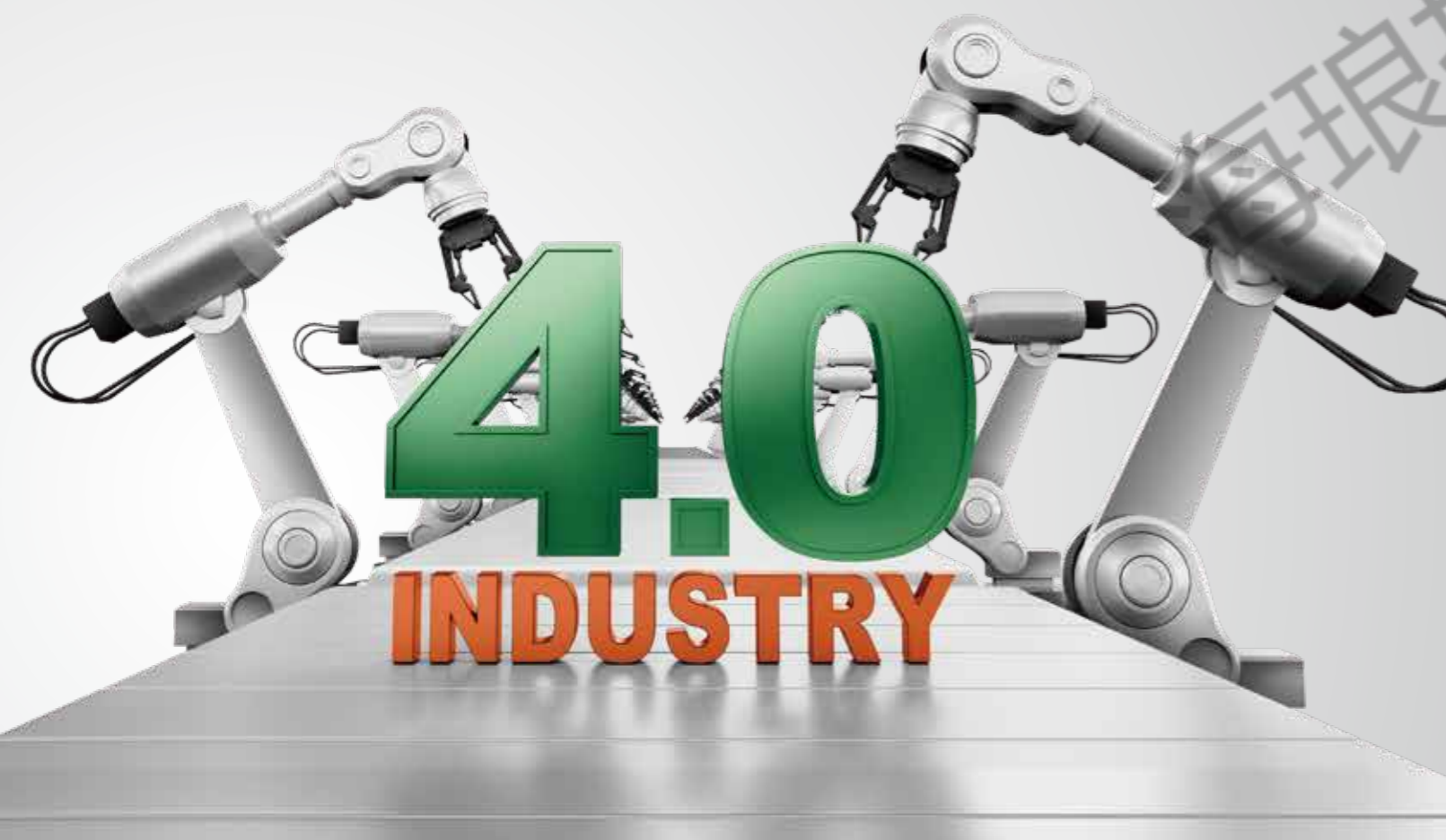
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Introduction To DOUBLESTAR Group

双星集团简介

双星为青岛市属国有控股企业,始建于1921年。拥有橡胶轮胎、智能装备及循环利用产业和韩国锦湖、青岛双星两个上市公司,青岛双星(000599)是山东省轮胎行业唯一一家国有主板上市公司。

2024年,“双星轮胎”品牌成为中国首个价值超千亿的轮胎品牌。双星集团轮胎营业额位居全球前十、中国第二、山东第一,其中轿车胎和海外营业额稳居中国轮胎第一。

2008年以前,双星主业主要为鞋和服装。2008年鞋服产业全面改制后从集团分离,双星全面转行到轮胎产业。2014年,双星以智慧转型为引领,开启了“二次创业、创轮胎世界名牌”的新征程。关闭了所有的老工厂,淘汰了全部的落后产能,建成了全球轮胎行业第一个

Doublestar is a state-owned enterprise under the jurisdiction of Qingdao. It was founded in 1921. It has rubber tires, intelligent equipment and recycling industries, as well as two listed companies, namely, Korea Kumho and Qingdao Doublestar. Qingdao Doublestar (000599) is the only state-owned main board listed company in the tire industry in Shandong Province. In 2024, the "Doublestar Tire" brand became the first tire brand in China with a value exceeding 100 billion yuan. Doublestar Group's tire sales rank among the top ten globally, second in China, and first in Shandong Province. Among them, the sales of passenger car tires and overseas sales have consistently ranked first in China's tire industry.

Before 2008, Doublestar's main business was shoes and clothing. After the comprehensive reform of the shoe and clothing industry in 2008, it was separated from the group, and Doublestar fully shifted to the tire industry. In 2014, Doublestar, guided by intelligent transformation, embarked on a new journey of "restarting the business and creating a world-renowned tire brand". It closed all its old factories, elimi-

nated all backward production capacity, and built the world's first fully automated "Industry 4.0" smart factory in the tire industry and a world-leading research and development laboratory. It also took over Korea Kumho Tire, which was once among the top ten in the world. It accelerated technological innovation and established an "R&D 4.0" + "Industry 4.0" + "Service 4.0" industrial internet ecosystem. It has become the only enterprise in recent years to be awarded by the Ministry of Industry and Information Technology of China as a pilot demonstration in the entire industrial chain for "brand cultivation", "technological innovation", "quality benchmark", "intelligent manufacturing", "green manufacturing", "green products", "green supply chain", and "service transformation", and is known as "the leader of intelligent manufacturing in China's tire industry".

Currently, Doublestar is actively implementing the "new four modernizations" strategy of "ecologization, high-tech, localization, and digitalization" to become a world-class sustainable development enterprise as soon as possible.

三大主业

Three Major Industries

01



双星轮胎、锦湖轮胎
DOUBLESTAR tires and KUMHO tires

02



人工智能及高端装备
AI and high-end equipment

03



绿色生态循环利用
Green ecological recycling

Qingdao Hailang Holdings Co., Ltd.

青岛海琅控股有限公司

青岛海琅控股有限公司隶属于双星集团,全面承接“人工智能+高端装备”战略,主要业务板块为海琅智能装备、星华智能、海琅精工、环境装备。

公司搭建了商机漏斗、模块化、装验三大平台,培育了机加工能力、模块化设计能力、系统集成和总装能力,以数字化、服务化、定制化为指引,凭借建立全球轮胎行业智能化工业4.0工厂的经验,聚焦整体解决方案并赋能输出,发展成为数字橡胶机装

Qingdao Hailang Holdings Co., Ltd., a subordinate to Doublestar Group, fully implements the "AI + high-end equipment" strategy. Its main business sectors include Hailang intelligent equipment, Xinghua Intelligent Equipment, Hailang Precision, and Environmental Equipment.

The company has developed three major platforms, namely, the opportunity funnel platform, modular platform and installation qualification platform, thus enhancing its machining capacity, modular design capacity and system integration and assembly capacity. Driven by digitalization, service and customization and based on its experience in the intelligent Industry 4.0 factory in the global tire industry, the company focuses on the overall solutions to enable the

备、人工智能、机器人及智能传输、数字模具、数字清理及环保装备行业的高端装备制造企业,做数字化企业方案提供商。

公司先后荣获国家“绿色工厂”、两化融合管理体系认证、国家绿色供应链管理企业、国家高新技术企业、双软企业、山东省首台(套)技术装备、山东知名品牌、山东省专精特新、山东省高端装备制造业领军企业、山东省产业数字化协同创新基地、青岛市工程研究中心、青岛市技术创新中心等荣誉称号。

output, so as to become a high-end manufacturer of digital rubber equipment, AI, robot, intelligent conveyor and digital molds, digital cleaning equipment and environmental protection equipment as well as a digital solution provider.

The company has successively won the honors of the National Green Factory,Integrated management system certification,National Green Supply Chain Management Enterprise, National High-tech Enterprise, Dual Software Enterprise, First Technical Equipment (Set) in Shandong, Shandong Famous Brand, Shandong SRDI Enterprise, Shandong High-end Equipment Manufacturing Leader, Shandong Industrial Digital Collaborative Innovation Base, Qingdao Engineering Research Center, Qingdao Technology Innovation Center, etc.

四个业务板块

Four Business Sectors

01

海琅智能装备
Hailang Intelligent Equipment



02

星华智能
Xinghua Intelligent Equipment



03

海琅精工
Hailang Precision



04

环境装备
Environmental Equipment



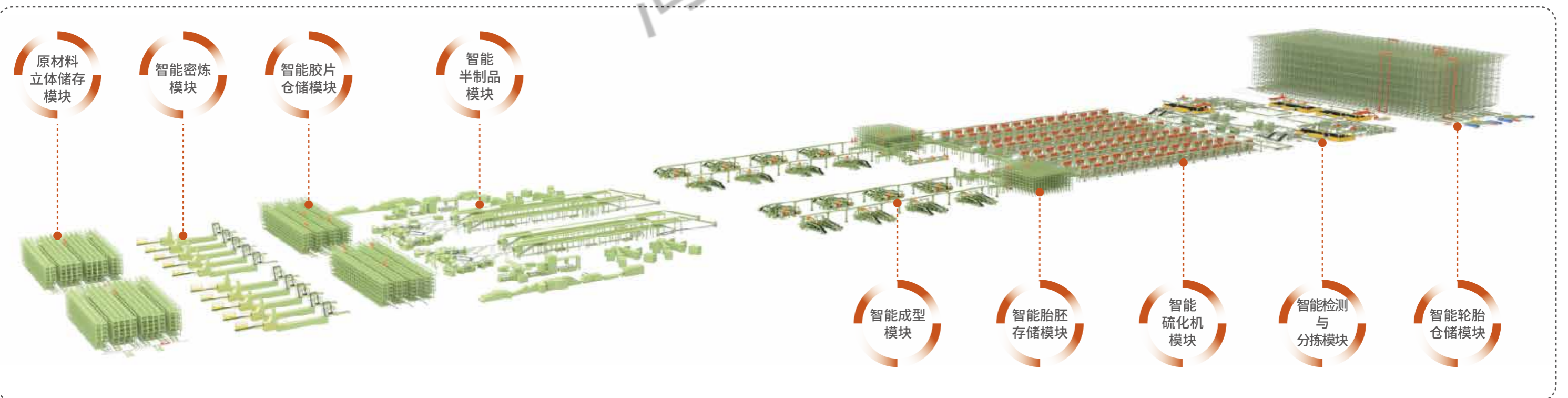
轮胎工业4.0整体解决方案

Whole Solution In The Tire Industry

Solutions

拥有围绕“工业4.0”智能化工厂整体解决方案的设计、制造和总包能力，集成全球领先的信息通讯技术、数字控制技术、智能装备技术，助力双星打造了全流程轮胎“工业4.0”工厂，使劳动强度降低60%以上，产品不良率降低80%以上，劳动生产率是过去的3倍以上。同时为啤酒、家电等行业领头羊企业建立和改造了数字化转型和智能化升级样板工厂，实现装备、产线、车间、工厂智能化，打通生产现场数据流，促进生产制造全过程的全面感知、实时分析、动态优化和数字管理，使经营管理更精准有效。

The company has the capabilities in the design, manufacturing and general contracting for whole solution of "Industry 4.0" intelligent factories, integrating the world's leading information and communication technology, digital control technology and intelligent equipment technology. It has helped Doublestar build the full-process "Industry 4.0" tire factory, thereby reducing the labor intensity by more than 60%, the product defect rate by more than 80%, and increasing the labor productivity by three times more than that of the past. In addition, the company has established and renovated digital transformation and intelligent upgrade model factories for leading enterprises in the beer, home appliance and other fields, in order to build intelligent equipment, production lines, workshops and factories, open the data flow of production sites, promote the comprehensive perception, real-time analysis, dynamic optimization and digital management of the whole manufacturing process, and make the operation and management more accurate and effective.



智慧仓储物流整体解决方案

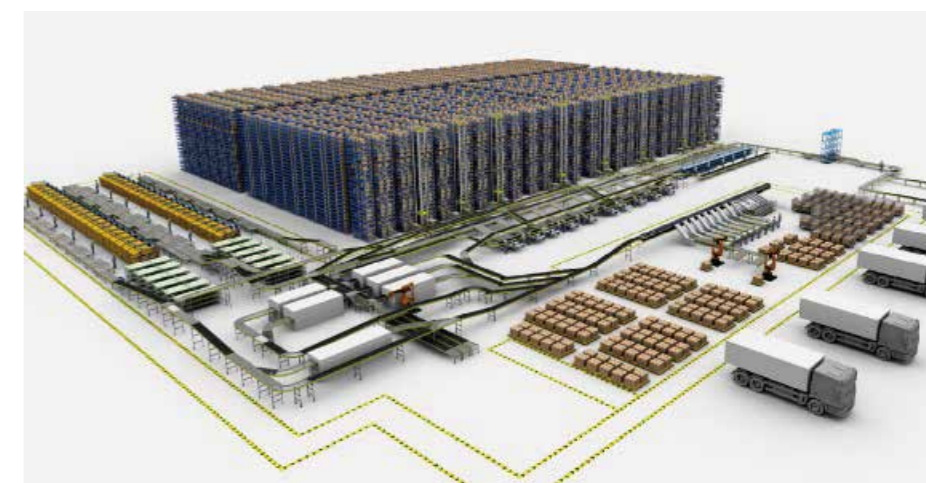
Whole Solution Of Intelligent Warehousing And Logistics



Solutions

基于双星资源平台成熟的技术装备和各行业丰富的整体规划、集成及设计经验，为客户提供智慧仓储物流的系统性解决方案，完成项目的规划咨询、方案设计、系统仿真、生产配套、安装调试、售后等一站式服务。拥有众多核心自研产品包括各类机器人、堆垛机、输送机、AGV、RGV等，通过自动化、系统化的订单生产管理，追溯生产的全流程，从而减少人力资源、降低劳动强度，增加场地空间利用率，提高产品质量稳定性、一致性。

Based on the mature technical equipment of Doublestar's resource platform and abundant experience in overall planning, integration and design in various fields, the company provides customers with systematic solutions of intelligent warehousing and logistics, and one-stop services such as project planning consultation, scheme design, system simulation, production support, installation and commissioning, and after-sales services. It has a variety of self-developed core products, including the robot, stacker, conveyor, AGV and RGV. It can trace the whole production process through automatic and systematic order production management, thereby reducing human resources and labor intensity, increasing the utilization rate of space, and improving the stability and consistency of product quality.



废旧橡胶循环利用整体解决方案

Whole Solution Of Waste Rubber Recycling

Solutions

全球智能化废旧橡胶循环利用工厂整体解决方案，涵盖废旧轮胎智能化预处理系统、智能化连续裂解系统、智能化炭黑深加工系统、公用环保系统及智能控制 RCOS 系统的全流程设备与工艺集成。

作为全行业唯一集设备研发制造、循环利用工厂全流程运营、产品高值化及应用领域研究、质保体系构建于一体的产业，技术装备规模化应用成果显著：自有 4 家工厂运营规模达 20 万吨，当前与 4 家客户（3 家国内、1 家海外）合作项目总产能达 20 万吨，持续引领废旧橡胶循环利用领域智能化与绿色化发展进程。

A comprehensive solution for global intelligent recycling factories of waste rubber, covering the entire process of equipment and technology integration, including intelligent pretreatment systems for waste tires, intelligent continuous pyrolysis systems, intelligent deep processing systems for carbon black, public environmental protection systems, and intelligent control RCOS systems.

As the only industry-wide enterprise integrating equipment R&D and manufacturing, full-process operation of recycling factories, high-value product research and application field exploration, as well as quality assurance system construction, it has achieved remarkable results in the large-scale application of technical equipment: its own four factories have an operating scale of 200,000 tons, and the total capacity of current cooperation projects with four customers (three domestic and one overseas) reaches 200,000 tons, continuously leading the intelligent and green development process in the field of waste rubber recycling.



① 数字橡塑系列—成型机

Digital Rubber And Plastic Series - Building Machine

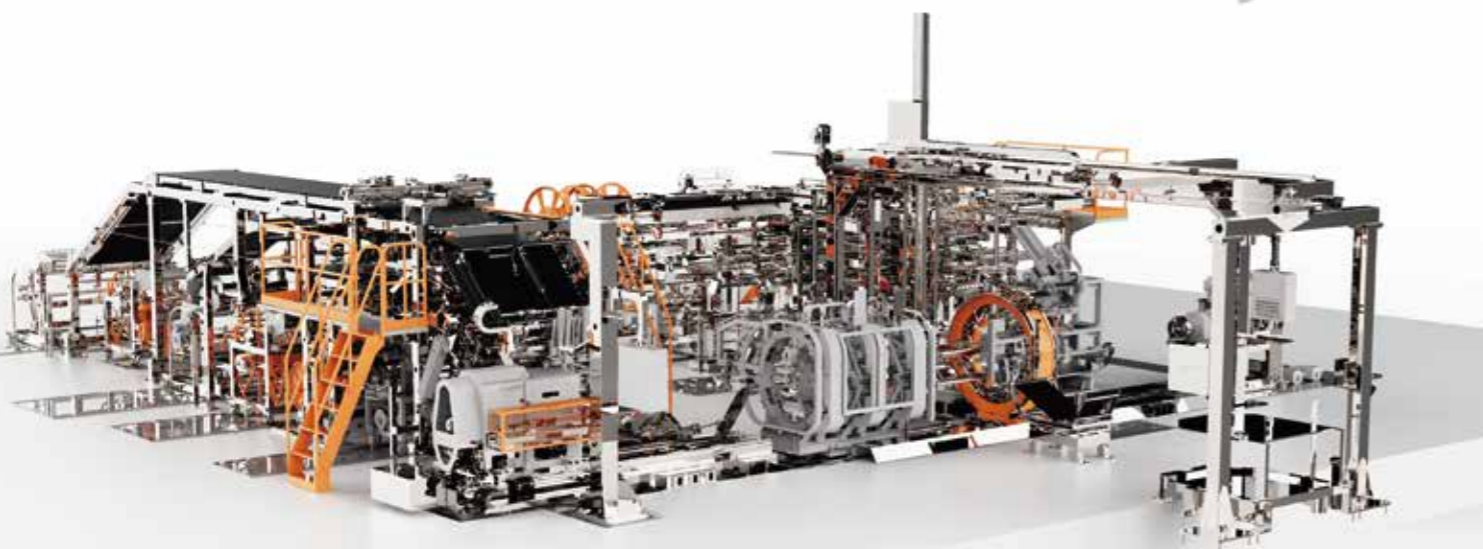
Product

全钢一次法成型机

- 高质量：在线自检，动平衡提升 15%
- 数字化：自感知、故障预测与健康管理（PHM）
- 高效率：单胎循环≤160s；反包效率提升 30%；胶囊寿命提升 2 倍
- 胎面保鲜膜在线剥离 / 换料不停机
- 三鼓独立，方便调整，设备精度更易保证

All-steel Uni-stage Building Machine

- High quality: online self-test, dynamic balance, increasing the efficiency by 15%
- Digital: self-sensing, failure prediction and health management (PHM)
- High efficiency: ≤160s per tire cycle; increase of the back-packaging efficiency by 30% extension of the capsule life by 2 times
- Online peeling/change of tread films without stop
- Three independent drums, to facilitate adjustment and ensure the equipment accuracy



半钢一次法成型机

- 单胎成型时间控制在 39 秒以内，极大地提升了生产效率
- 1 人操作，自动检测、贴条码、称重卸胎，减少人工成本
- 专业的安装调试团队，把控质量，保证产品的安全性和稳定性

Semi-Steel One-time Forming Machine

- The single tire molding time is controlled within 39 seconds, greatly improving production efficiency
- One person operation, automatic detection, barcode pasting, weighing and tire unloading, reducing labor costs
- Professional installation and debugging team, quality control, ensuring product safety and stability

① 数字橡塑系列—成型机

Digital Rubber And Plastic Series - Building Machine

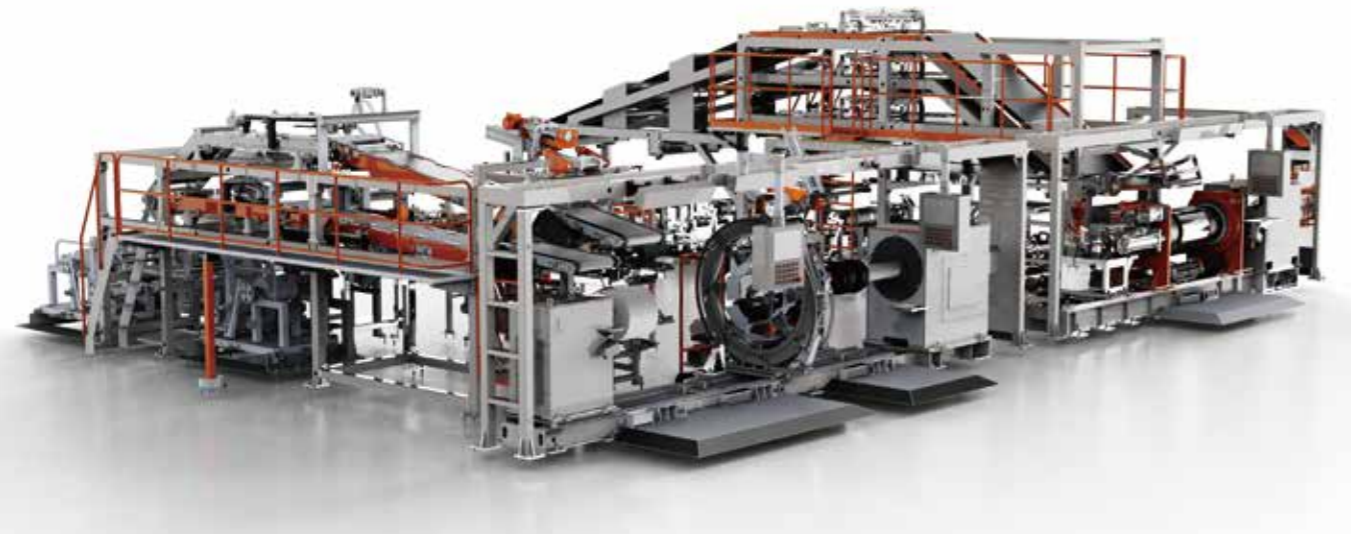
Product

半钢两次法成型机

- 主轴加粗设计，提高刚性及成型精度，满足大规格高档胎生产
- 双伺服控制成型鼓，平宽重复精度≤0.5mm/10000 次
- 冠带条贴合伺服电缸驱动 + 恒张力控制，提高贴合质量
- 三角胶预压实，避免存气泡

Semi-steel Two-stage Building Machine

- Thick spindle, to improve the rigidity and forming accuracy and meet the requirements for large high-grade tires
- Dual servo control molding drum, with a horizontal clearance repetition accuracy of 0.5mm/10,000 times or less
- Crown tape and servo cylinder drive + constant tension control, to improve the fitting quality
- Triangle rubber pre-compaction to avoid bubbles



摩托车胎成型机

- 单胎循环时间 17s, 日产轮胎 4800 条，设备 OEE 高达 95%
- 一人操作，生产过程无人工干预，高度自动化，劳动强度低
- 具备余料检测、换料提醒功能，提前通知换料人员到位
- 二次测长，贴合过程动态控制，保证接头质量
- 双工位供料，换料准备工作可提前完成，实现换料不停机
- 换料后可自动裁料头并将其自动剔除，提高换料效率

Motorcycle Tire Building Machine

- Single tire cycle: 17s; daily tire output: 4,800 tires; OEE: up to 95%
- One-man operation, high automation and low labor intensity, without manual intervention in the production process
- Residue detection and change reminder, informing of material change personnel in advance
- Two length measurements, dynamic fitting control, to ensure the joint quality
- Double-station feeding, to make preparations in advance for material change, and change materials without stop
- Automatic cutting and removal of tips to improve the efficiency of material change



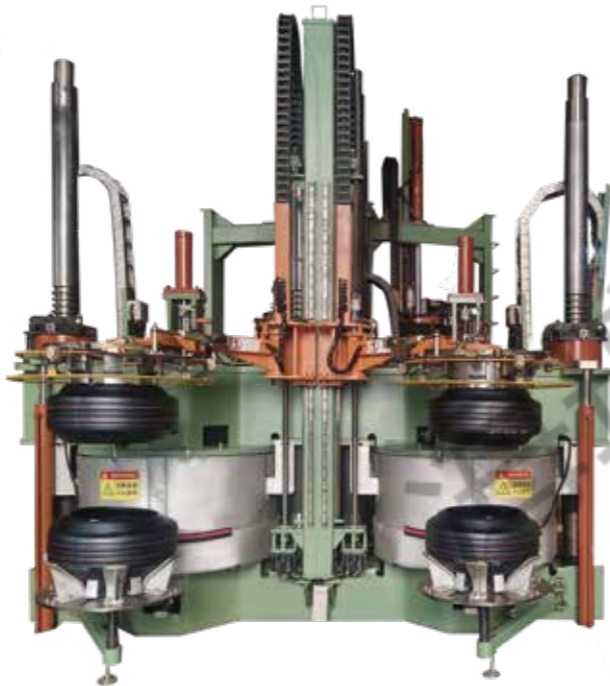
① 数字橡塑系列—轮胎硫化机

Digital Rubber And Plastic Series - Tire Curing Press

Product

立柱式电加热硫化机

- 绿色节能：替代传统蒸汽能源，节省管路设备投入；氮气作为热源媒介，单胎生产节能 30%
- 精度稳定：热板 / 模套 / 内温采用电磁加热技术，内外温控制精度 $\pm 2^{\circ}\text{C}$
- 智能控制：温度压力设定数字化，可根据不同硫化工艺调整内外温及内压参数
- 单模单控, 效率高: 可实现单模单控硫化; 采用伺服机械手、伺服液压控制系统，非工艺循环时间缩减至 50 秒
- 稳定性高, 故障率低: 中心机构螺旋喷嘴，侧切式回水，上、下胶囊温差 $< \pm 2^{\circ}\text{C}$ ；固定式后充气, 5 年无故障
- 换产便捷, 无需调模: 主机采用立柱锁模，开合模位移传感器定位，数字化调模；后充气锁紧采用油缸驱动，位移传感器定位，数字化调模



Electric Heating Curing Press

- Green and energy-saving: It replaces traditional steam energy and saves investment in pipeline equipment; nitrogen is used as the heat source medium, saving 30% of energy for each tire production
- Stable precision: The heating plate, mold sleeve and inner temperature adopt electromagnetic heating technology, with the control accuracy of inner and outer temperature at $\pm 2^{\circ}\text{C}$
- Intelligent control: The temperature and pressure settings are digitalized, and the inner and outer temperature and inner pressure parameters can be adjusted according to different vulcanization processes
- High efficiency with single mold and single control: Capable of achieving single mold and single control vulcanization; equipped with a servo robotic arm and a servo hydraulic control system, reducing non-process cycle time to 50 seconds
- High stability and low failure rate: Central mechanism with spiral nozzle, side-cut water return system, with a temperature difference between the upper and lower capsules of $< +2^{\circ}\text{C}$; fixed rear inflation, ensuring no failures for 5 years
- Convenient production change with no mold adjustment needed: The main machine uses column mold locking, with displacement sensors for mold opening and closing, enabling digital mold adjustment; rear inflation locking driven by hydraulic cylinders, with displacement sensors for positioning, allowing for digital mold adjustment

一机四模硫化机

- 高效率：一台硫化机四个蒸汽室，同时硫化 4 条轮胎，单机效率是普通双模硫化机的 2 倍；采用立柱式结构，结构简单，故障率低
- 低能耗：热板采用电加热，能耗降低 10%，节能环保
- 高精度：机械手升降、转入、转出采用伺服电机驱动，运行平稳，精度高
- 高性能：热板温度采用可控硅分区控制，不同区域温度可任意设定
- 可视化：硫化过程实时监控；可视化、自诊断、自检测，无缝对接轮胎生产物流

4-mode Curing Press

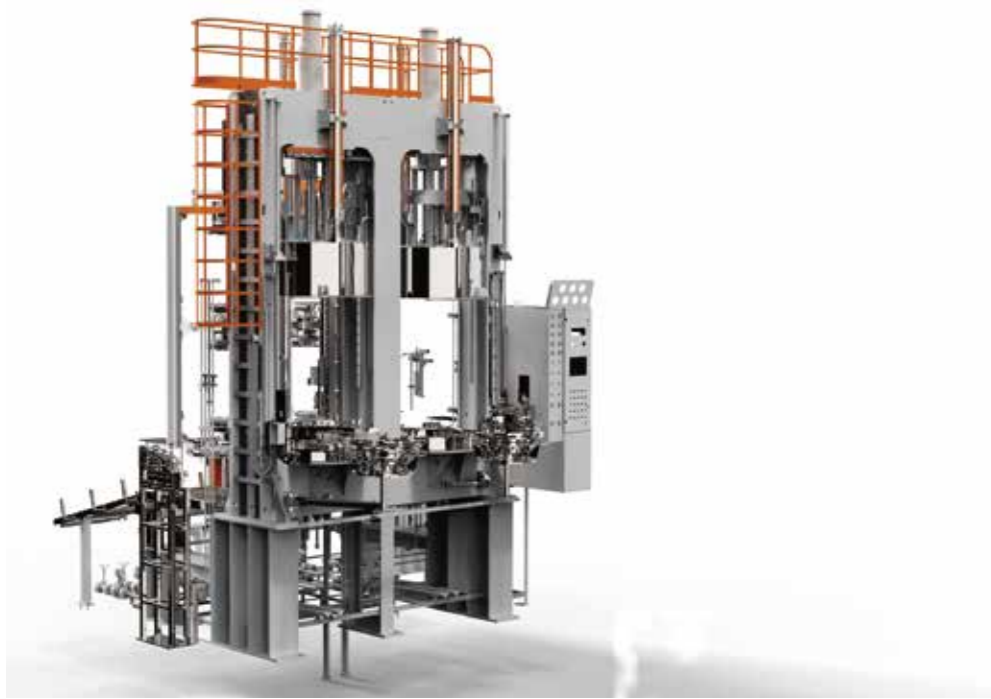
- High efficiency: 4 steam chambers for simultaneous of vulcanization of 4 tires. The efficiency of a single 4-mode press is two times that of the general-purpose 2-mode press. The 4-mode press features the simple column structure and low failure rate
- Low energy consumption: electric heating through the thermal plate, reducing the energy consumption by 10%, conducive to energy conservation and environmental protection
- High precision: servo motor control of robot lifting, roll-in and roll-out, stable operation, high precision
- High performance: thyristor zone control of the thermal plate temperature. The temperature can be freely set in different zones
- Visualization: real-time monitoring of vulcanization; visualization, self-diagnosis, self-detection, seamless connection of tire production and logistics



① 数字橡塑系列—轮胎硫化机

Digital Rubber And Plastic Series - Tire Curing Press

Product



全钢液压硫化机

- 技术领先：德国 HF 技术
- 高效率：非循环时间缩减至 180 秒
- 机械手重复精度 $\leq 0.5\text{mm}/20000$ 次
- 智能控制：物联网无缝对接
- 智能温控：精准控制温度

All-steel Hydraulic Curing Press

- Leading technology: German HF technology
- High efficiency: reducing the non-cycle time to 180 seconds
- Robot repetition accuracy: $\leq 0.5\text{mm}/20,000$ times
- Intelligent control: seamless IoT connection
- Intelligent temperature control: accurate temperature control

半钢液压硫化机

- 高质量：产品合格率 99.9%
- 高效率：框架式结构，强度高，重复精度高，运行平稳，可实现单模单控稳定使用
- 机械手重复精度 $\leq 0.5\text{mm}/20000$ 次
- 智能温控：热板表面温度均匀 $\pm 1.5^{\circ}\text{C}$

Semi-steel Hydraulic Curing Press

- High yield: 99.9%
- High efficiency: frame structure, high strength, high repeatability, smooth operation, supporting single-mode single-control smooth operation
- Robot repetition accuracy: $\leq 0.5\text{mm}/20,000$ times
- Intelligent temperature control: even temperature distribution on the thermal plate surface, $\pm 1.5^{\circ}\text{C}$



① 数字橡塑系列—工程胎硫化机

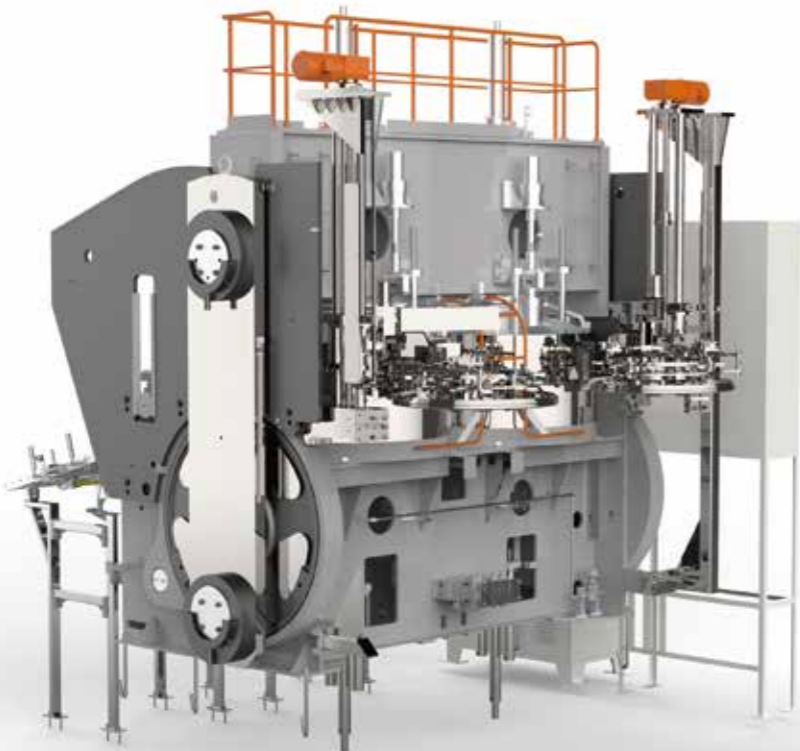
Digital Rubber And Plastic Series - Engineering Tire Curing Press

机械式/机液混合硫化机

- 采用集成式热工阀组，能耗降低 10% 以上
- 大容量热板，升温快，外温温度均匀
- 机械手变频驱动，精度稳定可靠
- 可视化、自诊断、自检测，无缝对接轮胎生产物联

Mechanical/hydraulic-mechanical Curing Press

- Integrated thermal valve group, reducing the energy consumption by more than 10%
- Large-capacity thermal plate, fast heating and even external temperature
- Variable-frequency robot drive for reliable and stable accuracy
- Visualization, self-diagnosis, self-detection, seamless tire production IoT connection



① 数字橡塑系列—平板硫化机

Digital Rubber And Plastic Series - Plate Curing Press

平板硫化机

- 数字化：全线工业互联大数据控制
- 高质量：智能测评，泄漏智能检测，油缸 5 年无泄漏
- 高精度：上置下行密排、压力分组控制，平行度 $\leq 0.2\text{mm}$
- 低能耗：独特热工管路，减少蒸汽消耗 30%

Plate Curing Press

- Digitalization: big data control of industrial interconnectivity of the whole production line
- High quality: intelligent assessment, intelligent leakage detection. The cylinder is free of leakage for 5 years
- High precision: close upper and lower rows, pressure group control, parallelism $\leq 0.2\text{mm}$
- Low energy consumption: unique thermal piping, reducing the steam consumption by 30%



① 数字橡塑系列—自动化炼胶、胶片冷却系统

Digital Rubber And Plastic Series - Automatic Mixing
And Batch-off System

Product

自动化炼胶线

- 智能化：自动测温 / 刮胶 / 翻胶 / 排胶
- 高安全：多重互锁，安全可靠
- 自诊断，自识别，远程监控，运维服务



Automatic Mixing Line

- Intelligent: automatic temperature measurement/rubber scraping/turning/stripping
- High safety: multi-interlock, safe and reliable
- Self-diagnosis, self-identification, remote monitoring, operation and maintenance services

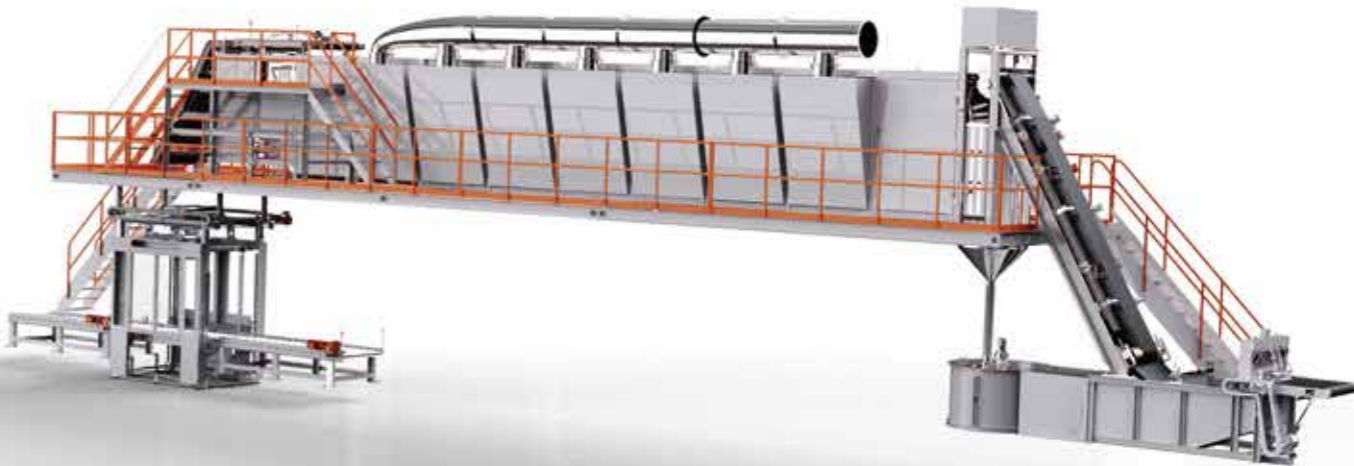
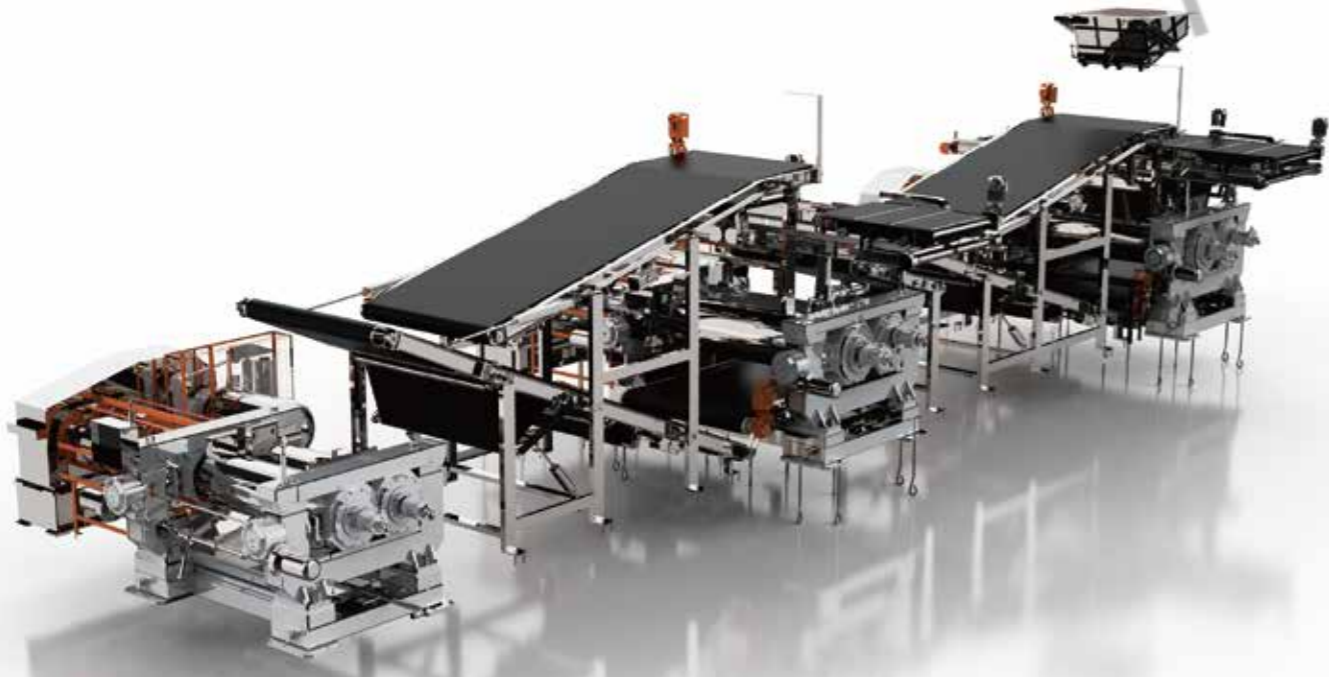
胶片冷却线

- 胶片自动入胶 / 抓胶 / 裁断 / 叠片码垛 / 出料，单人操作
- 三工位自动输送
- 摆片伺服升降，堆垛整齐，偏差≤20mm



Batch-off Line

- automatic film feeding/grabbing/cutting/stacking/discharging, single-person operation
- 3-station automatic conveying
- Pendulum servo lifting, neat stacking, deviation ≤20mm



① 数字橡塑系列—模塑设备

Digital Rubber And Plastic Series - Molding Equipment

Product

全自动模塑成型机

- 真正实现模塑成型、热压全自动。湿坯、干坯转运在设备内部完成，无转运偏差成型质量好、精度高
- 采用匀化技术，浆料成分稳定、均匀，成型厚度均匀
- 采用水平移动，速度快，易于维护保养
- 带有维修安全装置，安全性高
- 加热板采用优化设计，加热效率高，加热效果均匀

Automatic Molding Machine

- Automatic molding and hot pressing. Wet and dry billets are conveyed inside the equipment, with high forming quality and precision but no transfer deviations
- Homogenization technology for stable and uniform slurry composition and even forming thickness
- Horizontal movement, high speed, easy maintenance
- High safety, with maintenance safety device
- Optimized heating plate, with high heating efficiency and uniform heating effect



智能自动切边机

- 精确度高，工作台面上下板平行度误差<0.10mm
- 定位准确，机械重复定位精度<0.5mm
- 运行平稳，机械手各轴均采用伺服电机驱动
- 安全性高，取放料口光栅，手臂级防护
- 预留联机电控端口，可与其他机器联动

Intelligent Automatic Trimming Machine

- High accuracy: the parallelism error of upper and lower plates of the workbench is less than 0.10mm
- Accurate positioning: mechanical repeated positioning accuracy < 0.5mm
- Stable operation: robot axles are driven by a servo motor
- High safety: grate at the inlet and outlet for arm protection
- Reserved online electrical control port for linkage with other machines



② 智能传输及机器人系列

Intelligent Conveyor And Robot Series

Product

龙门机器人

- 无差错分拣
- 负载 600kg
- 跨度 16 米
- 码垛速度 240 米 / 分钟
- 四个方向均可搭配出入库系统

Gantry Robot

- Error-free sorting
- Load: 600kg
- Span: 16m
- Stacking rate: 240m/min
- Support warehousing systems in four directions



桁架机器人

- 更精准定位：采用全伺服系统
- 场景广泛：机床上下料、长距离搬运
- 轮式驱动结构：横走行程超过 120 米。
- 更高负载：最大负载可达 200kg，速度最高可达 180 米 / 分钟
- 持续迭代：第三代碳纤维 T 轴新产品

Truss Robot

- More accurate positioning: full servo system
- Wide applications: machine loading and unloading, long-distance handling
- Wheel drive structure: crossing stroke of more than 120m
- High load capacity: maximum 200kg, 180 m/min
- Continuous iteration: third-generation new carbon fiber T-axis products



AGV

- 更精准定位：激光导航适用于上下料场景
- 走行速度：0-90m/min
- 转弯半径：Min.1850mm
- 定位精度：±5mm
- 最高负载：2000kg

AGV

- More accurate positioning: laser navigation, suitable for loading and unloading
- Running speed: 0-90m/min
- Turning radius: Min.1850mm
- Positioning accuracy: ±5mm
- Maximum load: 2,000kg

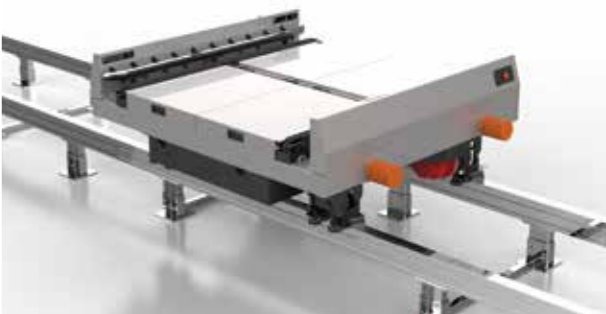


RGV

- 稳定搬运：加 / 减速时没有货物被晃动
- 高速性：速度可达 240m/min，比输送机快 20 倍提高搬运能力
- 低噪音：使用铝合金轨道及聚氨酯车轮
- 转弯半径：1 米

RGV

- Steady handling: no swinging during acceleration/deceleration
- High speed: up to 240m/min, 20 times higher than that of the conveyor
- Low noise: aluminum alloy track and polyurethane wheels
- Turning radius: 1m



② 智能传输及机器人系列

Intelligent Conveyor And Robot Series

Product

EMS

- 空中运行速度达 4m/s：输送量大效率高
- EMS 小车自带升降系统：配合地面输送线体、上下料机器人等实现全自动无人值守运行，解放人力物力
- 设备操作维护简单



EMS

- Running speed in the air: 4m/s; large conveying capacity and high efficiency
- Lifting system in the EMS trolley. It can be used with the ground-mounted conveyor line and loading/unloading robot for automatic unattended operation without any needs for labor and materials
- Simple operation and maintenance

料箱车

- 高可靠性：采用双轮差速和二维码导航，实现平稳行走和旋转，技术成熟稳定
- 兼容性：业务柔性，兼容多尺寸料箱、纸箱拣选
- 高效率：人机协同工作效率提升 3-4 倍，提升单位时间内人工作业效率

Skip Car

- High reliability: two-wheel differential speed and QR code navigation for steady running and rotation, mature and stable technology
- Compatibility: flexible structure, compatible with different hoppers and cartons in sorting
- High efficiency: man-machine collaboration, increasing the work efficiency by 3-4 times and the labor efficiency per unit time



堆垛机

- 堆垛机速度：240m/min
- 最大负载：1500kg
- 最大设计高度：24m
- 轻型堆垛机：载重 0-150kg

Stacker

- Stacker speed: 240m/min
- Maximum load: 1,500kg
- Maximum design height: 24m
- Light-duty stacker: 0-150kg



四向车

- 智能控制：先进的控制系统，可通过操纵杆、按钮或触摸屏等进行操作和调节
- 高稳定：配备有电动举升和倾斜系统，可根据需要调整货物的高度和角度，提高了搬运过程中的安全性和稳定性
- 高效率：采用全向转向技术，通过操纵杆或操纵盘来控制车辆的转向，极大地增加了搬运效率和操作灵活性
- 载重：最大 1 吨；运行速度：1.4m/s

Four-way Trolley

- Intelligent control: advanced control system, supporting the operation and adjustment via the joystick, button or touch screen
- High stability: electric lifting and tilting system, to adjust the height and angle of the goods as needed, thus improving the safety and stability in handling
- High efficiency: universal steering, to control the vehicle steering via the joystick or control panel, greatly improving the handling efficiency and operational flexibility
- Load capacity: maximum 1t; running speed: 1.4m/s



② 智能传输及机器人系列

Intelligent Conveyor And Robot Series

Product

皮带输送机

- 更精准定位：采用全伺服系统
- 最高速度：达 140 米 / 分钟
- 应用场景：适用于大中型分拣场地，广泛运用于快递、电商、家居、服装、航空、家电等行业

Belt Conveyor

- More accurate positioning: full servo system
- Maximum speed: 140 m/min
- Applications: suitable for large- and medium-sized sorting sites, with extensive applications in express delivery, e-commerce, furniture, clothing, aviation, home appliances, etc



摆轮分拣机

- 分拣效率高：最大分拣效率可达到 8000 件 / 小时
- 分拣重量较大：最大分拣货物重量 60kg
- 适应范围广：可适用各种包装形式，如纸箱、周转箱、编织袋、塑料袋等

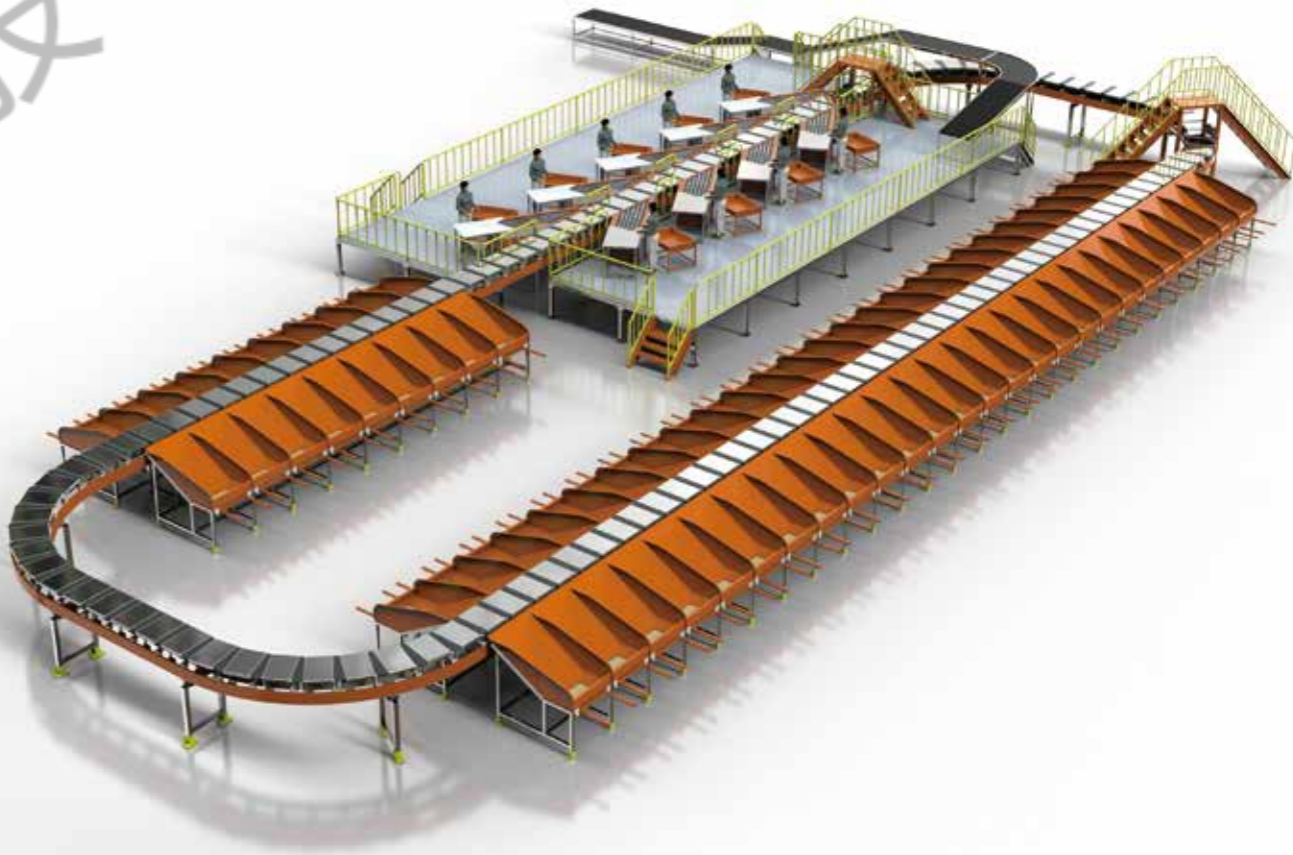


Balance Wheel Type Sorter

- High sorting efficiency: maximum 8,000pcs./h
- Large sorting weight: maximum 60kg
- Extensive adaptations: suitable for various packages, such as cartons, turnover boxes, woven bags, plastic bags, etc

交叉带分拣机

- 分拣效率高：交叉带：单层分拣机≥18000 件 / 小时
- 分拣重量较大：最大分拣货物重量 60kg
- 适应范围广：适用于大中型分拣场地，广泛运用于快递、电商、服装等行业



Cross Tape Sorter

- High sorting efficiency: cross tape; single-layer sorter: ≥18,000pcs./h
- Large sorting weight: maximum 60kg
- Extensive adaptations: suitable for large- and medium-sized sorting sites, with extensive applications in express delivery e-commerce, clothing, etc

③ 数字化产品系列

Digital Product Series

Product

RCOS系统

RCOS 平台实现对企业卫星工厂的中央化集中管理，对各工厂进行实时的调度、协同、管控。

RCOS 平台充分发挥远程运营优势，实现了对数据的实时采集、传输、分析、监视、控制、存储。采用互联网 + 方案进行数据云存储和大数据分析。平台采用云服务、大数据、工业互联网、SaaS 等技术，通过物流监控、设备监控、工艺参数监控、生产 / 质量监控、安全 / 环保监控、实时报警、能源监控等实时在线的管理功能将多工厂数据进行展现，统一汇总、分析以及不同维度对比，实现一个中心、多个基地的信息化融合管理。

RCOS System

The RCOS platform is used for centralized management of satellite factories, including dispatching and coordinated control of factories.

The RCOS platform gives full play to the advantages of remote operation for real-time data collection, transmission, analysis, monitoring, control and storage.

The Internet + solution is adopted for data cloud storage and big data analysis. Using the cloud service, big data, industrial Internet, SaaS and other technologies, the platform can be used for factory data representation, unified summary, analysis and comparison at different dimensions through a variety of real-time management functions, including logistics monitoring, equipment monitoring, process parameter monitoring, production/quality monitoring, safety/environmental protection monitoring, real-time alarm and energy monitoring, in order to perform the information integration management of one center and multiple bases.



WMS系统

WMS 仓储管理系统实现收货、质检、上架、拣货、出库、盘点、补货等任务的管理，让企业实时掌握物料的动态变化情况，降低库存，降低成本。使企业的仓储管理更加精细化、透明化、智能化。

WMS System

The warehouse management system (WMS) is used for management of materials reception, inspection, racking, sorting, warehousing-out, check, replenishment, etc., so that enterprises keep abreast of dynamic changes in materials, thus reducing the inventory and costs, and realize finer, more transparent and more intelligent warehouse management.



MES系统

- 全工程物料验证防误，确保使用材料的准确性；材料领用遵循先进先出原则，监控物料存储的实时位置
- 工艺参数自动传递到机台，提高工艺设置的安全性及效率
- 全自动设备故障信息智能提报，提高设备利用率和故障分析的效率
- 精细化的质量管理，自动对产品质量进行判级

MES System

- Full engineering material verification to avoid errors and ensure the accuracy of material use; material requisition according to the first-in-first-out principle and real-time monitoring of material locations in the storage
- Automatic transfer of process parameters to the console, improving the safety and efficiency of process settings
- Intelligent reporting of fault information of automatic equipment, improving the efficiency of equipment utilization and fault analysis
- Fine quality management and automatic classification of product quality

④ 数字化模具系列

Digital Mold Series

Product

半钢子午线活络模具

- 高质量：精准温控，硫化更均匀，轮胎硫化高质量、高寿命
- 高效能：轮胎硫化定点发力，硫化效率提升约 10%
- 低能耗：能耗成本节省约 10%
- 主要适用 45"、48" 等规格硫化机。采用五轴直雕工艺、低压铸造工艺，确保不同花纹形状加工要求

Semi-steel Radial Segmented Mold

- High quality: precise temperature control, more uniform vulcanization, high quality, long service life of vulcanized tire
- High efficiency: fixed-point tire vulcanization, increasing the vulcanization efficiency by about 10%
- Low energy consumption: reducing energy costs by about 10%
- Mainly applicable to 45", 48" and other specifications of vulcanizing machines. Five-axis direct engraving process and low-pressure casting process are adopted to ensure the processing requirements of different patterns and shapes

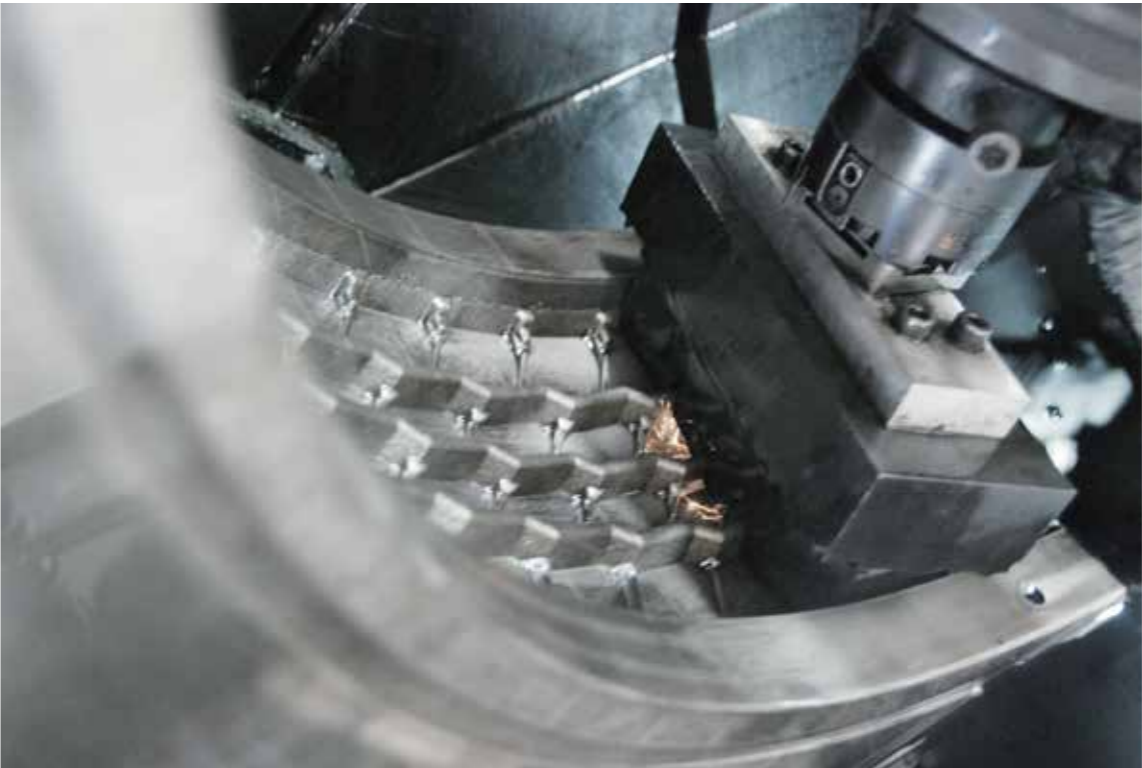


全钢子午线活络模具

- 工艺先进：领先的五轴直雕工艺，花纹符合性极高
- 设备精良：进口高精度数字化装备，高精度加工，模具真圆度达到 0.05mm
- 主要适用 55"、63.5"、67" 等规格硫化机。通用性与互换性好，适合于斜平面导向与圆锥面导向不同结构形式的活络模向心机构。合模精度高，使用寿命长

All-steel Radial Segmented Mold

- Advanced technology: leading five-axis direct carving technology, high pattern conformity
- Sophisticated equipment: imported high-precision digital equipment, high-precision machining, mold roundness of 0.05mm
- Mainly applicable to 55", 63.5", 67" and other presses
- Good universality and interchangeability for inclined and conical segmented mold centering mechanisms; high mold assembly accuracy, and long service life



⑤ 橡塑循环利用系列

Rubber And Plastic Recycling Series

Product

智能化连续裂解装备

九大核心技术

- 可控连续进料密封技术
- 反应釜动态自密封技术
- 自调节微负压控制技术
- 反应釜体定位及调整技术
- 热风循环利用技术
- 再生油冷凝防结焦技术
- 连续自动出料动密封技术
- 炭黑粗破筛分技术
- 专有远程控制技术

Intelligent Continuous Cracking Equipment

9 Core Technologie

- Controlled continuous feed sealing technology
- Dynamic reactor self-sealing technology
- Self-regulating micro-negative pressure control technology
- Eactor positioning and adjustment technology
- Hot air recycling technology
- Reclaimed oil condensation and anti-coking technology
- Continuous automatic dynamic outlet seal technology
- Coarse crushing and screening technology for carbon black
- Proprietary control technology



智能化炭黑深加工装备

五大核心技术

- 裂解炭黑破碎磁选技术
- 高效气流粉碎及分级技术
- 连续稳定造粒技术
- 造粒水串级连锁控制技术
- 炭黑干燥技术



Intelligent Carbon Black Deep-processing Equipment

5 Core Technologie

- Carbon black cracking Crushing and magnetic separation technology
- High-efficiency air crushing and grading technology
- Continuous stable granulation technology
- Granulation water cascade chain control technology
- Carbon black drying technology

⑥ 数字清理及环保系列—智能造型设备

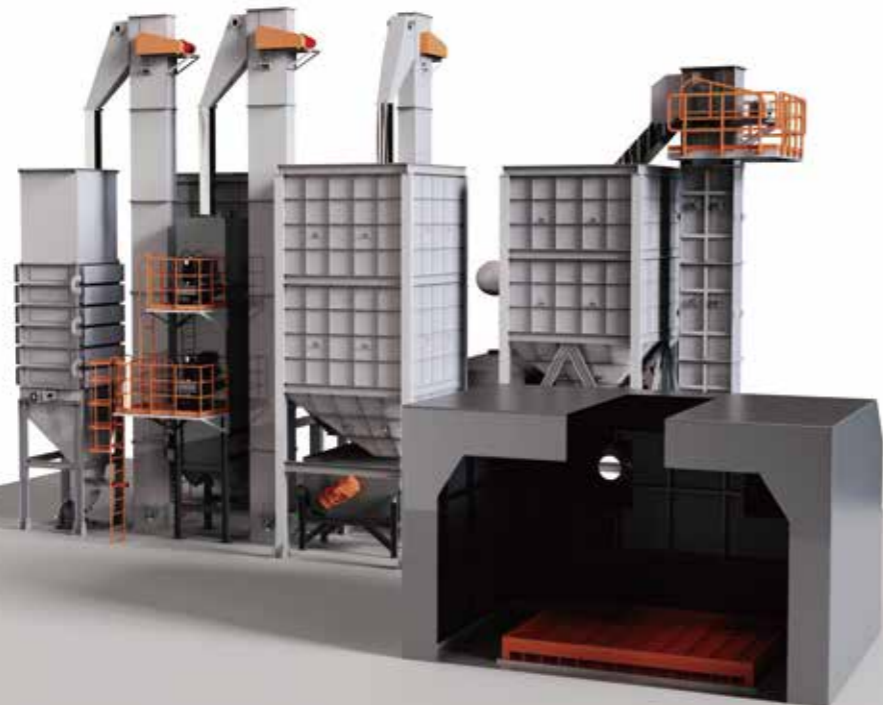
Digital Cleaning And Environmental Protection Series -
Intelligent Molding Equipment

树脂砂智能造型设备

- 落砂机采用风幕式除尘罩，无粉尘外溢
- 采用先进、节能的破碎机、四步再生机，脱模率达到≥30%
- 两级风冷加一级水冷降温，散热面积大，砂温≤32℃
- 混砂机采用中速混砂，混砂更均匀，进口隔膜泵寿命长
- 设备具有自诊断、自检测功能，可远程调试和故障检测

Intelligent Resin Sand Molding Equipment

- Air curtain type dust cover on the shakeout machine, without dust spillage
- Advanced and energy-saving crusher, 4-stage regenerator, stripping rate ≥30%
- Integration of 2-stage air cooling and 1-stage water cooling, large heat dissipation area; sand temperature ≤32℃
- Medium-speed sand mixing for better uniformity, long service life of inlet diaphragm pump
- Self-diagnosis, self-detection, remote debugging and fault detection



⑥ 数字清理及环保系列—自动化V法造型设备

Digital Cleaning And Environmental Protection Series -
Automatic V-type Molding Equipment

自动化V法造型设备

- 造型效率：6-20 箱 / 小时
- 机械手自动完成起模、翻转、合箱、解箱工序，位移传感器精确定位，合箱精度≤0.5mm
- 覆膜器独立完成面膜的抓取、切断、加热、覆膜工作，远红外加热，覆膜率达到 98% 以上
- 真空泵变频控制，高低压智能切换，实现节能降耗，节电达到 30% 以上
- 设置专门喷涂、烘干工位对有机溶剂进行收集处理
- 可实现在线浇注、冷却，实现真空自动切换

Automatic V-type Molding Equipment

- Molding efficiency: 6-20 cases/hour
- Automatic drawing, turning, closing and unpacking via the robot, accurate positioning of displacement sensor, closing accuracy of less than 0.5mm
- Independent film grabbing, cutting, heating and laminating via the film laminator, far infrared heating, laminating rate of more than 98%
- Vacuum pump switching through intelligent high/low-pressure variable-frequency vacuum switching, saving the power by more than 30%
- Dedicated spraying and drying stations for organic solvent collection
- Online casting and cooling, automatic vacuum switching



两工位穿梭式V法造型线



造型圈组合式V法造型线



转台式V法造型线



⑥ 数字清理及环保系列—智能清理设备

Digital Cleaning And Environmental Protection Series - Intelligent Cleaning Equipment

抛丸清理机

- 智能化：智能物联网，远程监控和设备问题智能判断
- 经济化：机械手上下料，减少人工
- 护板材料最新型 Mn15Cr1 材料，是传统 65Mn 耐磨寿命 5 倍以上
- 锈蚀，氧化皮、污物去除率 95%-98%

Shot Blasting Machine

- Intelligent: intelligent IoT, remote monitoring and intelligent fault identification
- Economical: robot loading and unloading to reduce labor
- Guard plate: the latest Mn15Cr1, with a wear life 5 times longer than that of 65Mn
- Rust removal rate: 95% to 98%



辊道式清理机



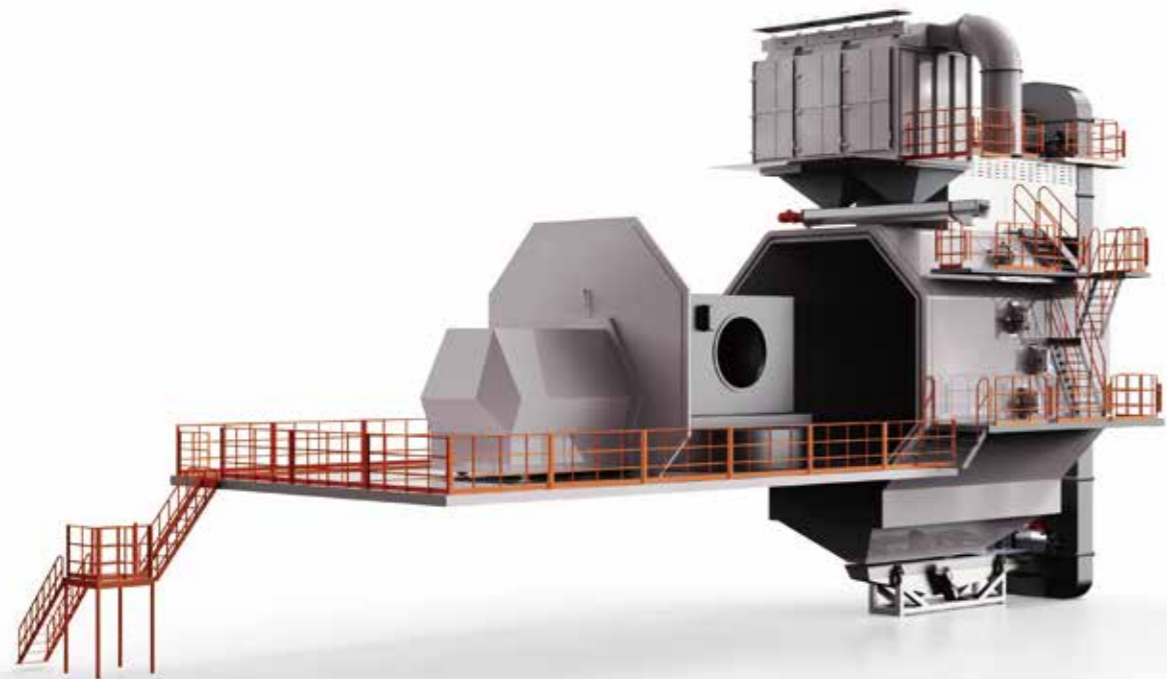
吊链进步式/连续式清理机



台车式抛丸清理机



吊钩式抛丸清理机



⑥ 数字清理及环保系列—除尘设备

Digital Cleaning And Environmental Protection Series - Dust Removal Equipment

FD旁插扁袋袋式除尘器

- 利用脉冲反吹的方式，风量为 0.5~25 万，过滤精度达到 5mg，除尘效率>99.9%
- 此类除尘设备需要压缩空气气源，且要求工作温度在 -15°C 以上

FD Lateral Flat Bag Type Dust Collector

- Pulse backflushing, air capacity 5000 to 250,000m³/h, filtration accuracy 5mg, dust removal efficiency > 99.9%
- The dust collector is more suitable for applications compressed air sources and operating temperature above -15 °C



FS旁插扁袋袋式除尘器

- 利用风机反吹的方式，风量为 0.5~25 万，过滤精度达到 5mg，除尘效率>99.9%
- 此类除尘器更适合无压缩空气气源，环境温度较低的工况下

FS Lateral Flat Bag Type Dust Collector

- Backflushing fan, air capacity 5000 to 250,000m³/h, filtration accuracy 5mg, dust removal efficiency > 99.9%
- The dust collector is more suitable for applications with low ambient temperature and no compressed air

设备维修升级

Equipment Maintenance And Upgrade

设备维修与升级改造

海琅拥有经验丰富的工程师团队，具备全方位、多层次的专业能力，能够为客户提供设备维修与升级改造服务。

当收到合作方报告的设备故障信息后，海琅将在24小时内响应，48小时内到达，以最短的时间、最低的成本解决设备问题，保障生产活动的连续性与高效性。



Equipment Maintenance And Upgrade

Equipment Maintenance And Upgrade

Hailang has an experienced team of engineers with comprehensive and multi-level professional capabilities, capable of providing maintenance and repair services for equipment.

After receiving equipment failure information reported by the cooperating party, Hailang will respond within 24 hours and arrive within 48 hours to solve equipment problems in the shortest time and at the lowest cost, ensuring the continuity and efficiency of production activities.



PART.5

荣誉与生态

荣誉与生态

Honor & Ecology

HILANG 海琅

Honor & Ecology



全球生态合作伙伴

