源于预制 更懂预制

Originating from prefabrication
learning more about prefabrication

预制砼智能装备

Intelligent prefabricated concrete equipment



榆构装备

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源于预制 更懂预制

ORIGINATING FROM PREFABRICATION
LEARNING MORE ABOUT PREFABRICATION



Company Profile
公司简介

河北榆构装备科技有限公司，系北京榆构集团全资子公司，坐落于京南固安高新区大清河园区。公司于2023年正式启航，迅速崛起成为国内领先的智能制造装备服务商。我们始终专注于预制构件智能生产线的顶层规划与设计，通过高精度模具的研发制造，同步提供前沿的软硬件开发及系统集成服务。

目前，公司产品矩阵已深度覆盖三大战略领域：在新能源领域，提供风电混塔智能生产线及高精度模具；在轨道交通领域，精耕盾构管片、铁路轨枕、轨道板及支承块智能产线；在工程建设领域，领衔桥梁、箱涵及体育场馆看台等复杂构件的产线方案。智能装备涵盖焊接、切割、检测、搬运及AGV运输机器人等。

创新是榆构装备的核心引擎。我们拥有一流的专业研发团队，并与多家高等院校及科研院所达成产学研深度合作，拥有多项自主知识产权，在智能化、数字化装备制造领域持续深耕。从自动化产线的宏观规划，到软硬件一体化的精准交付，我们为全球客户提供全生命周期的整体解决方案。榆构装备致力于成为全球领先的智能制造装备专家，通过科技的力量，让建造更安全、更高效、更智能。

Hebei Yugou Equipment Technology Co., Ltd., a wholly owned subsidiary of Beijing Yugou Group, is located in the Daqinghe Industrial Park of Gu'an High-Tech Zone, south of Beijing. Established in 2023, the company has rapidly grown into a leading intelligent manufacturing equipment service provider in China. We specialize in the top-level planning and design of intelligent production lines for precast concrete components, supported by the R&D and manufacturing of high-precision molds, advanced software and hardware development, and system integration services.

Our product portfolio covers three strategic sectors. In new energy, we provide intelligent production lines and high-precision molds for precast concrete wind turbine towers. In rail transit, we focus on intelligent production lines for tunnel segments, railway sleepers, track slabs, and support blocks. In engineering construction, we deliver production-line solutions for complex precast components such as bridges, box culverts, and stadium stands. Our intelligent equipment portfolio includes robotic systems for welding, cutting, inspection, handling, and AGV transportation.

Innovation is the core driver of Yugou Equipment. Backed by a highly skilled R&D team, we maintain close industry–university–research partnerships with leading universities and research institutes and hold multiple proprietary intellectual property rights. We continue to advance intelligent and digital equipment manufacturing, providing global customers with full-lifecycle integrated solutions—from overall automated production-line planning to integrated software and hardware delivery.

Yugou Equipment is committed to becoming a world-leading expert in intelligent manufacturing equipment, using technology to make construction safer, more efficient, and smarter.

企业愿景

Corporate Vision

成为领先的预制混凝土智能装备整体解决方案服务商

Becoming a leading integrated solution service provider of intelligent prefabricated concrete equipment

企业使命

Corporate Mission

让制造更安全、更高效、更智能

Make manufacturing safer, more efficient, and smarter

企业价值观

Corporate Values

合作、高效、创新、领先

Collaboration, efficiency, innovation, and leadership

Development History
发展历程

1980
北京市丰台区成立榆树庄构件厂模具班组，制造木模板

Beijing Fengtai District set up Yushuzhuang component factory mold class group, manufacturing wood formwork

1988
制造出第一批工业厂房用屋面板钢模具

the first batch of steel panel molds for industrial factory buildings were manufactured

1993
研发制造系列装配式建筑外墙板用钢模具

R&D and manufacturing of steel molds for exterior wall panels of assembled buildings.

2002
研发制造国内首个预制看台板钢模具

R & D and manufacture of the first domestic prefabricated bleacher plate steel molds

2005
研发制造奥运工程系列用清水混凝土挂板钢模具

R & D and manufacturing of the Olympic project series with fair-faced concrete hanging plate steel molds

2007
设计制造了京津冀首批全系列住宅产业化 PC 用钢模具

Designed and manufactured the first full series of steel molds for PC for residential industrialization in Beijing, Tianjin and Hebei.

2009
承接了科威特巴比延岛工程自动支拆桥梁模具项目，开拓海外市场

Undertook the project of automatic supporting and dismantling bridge mold for Babiyan Island Project in Kuwait to develop overseas market.

2010
成立河北榆构建材有限公司模具事业部

the Mold Business Unit of Hebei Yugou Building Materials Co., Ltd. was established.

2012
研发制造三星（中国）半导体新建项目系列钢模具

R&D and manufacturing of Samsung (China) Semiconductor new project series of steel molds

2014
研发制造乌干达 KE 项目桥梁钢模具

R&D and manufacturing of bridge steel molds for KE project in Uganda

2017
助力北京城市副中心项目清水混凝土挂板项目用钢模具

Steel molds for fair-faced concrete hanging slab project to help Beijing City Sub-center project

2018
为冬奥会“冰丝带”打造国内首例体育场馆弧形看台钢模具

For the Winter Olympics "Ice Ribbon" to create the first domestic stadium arc-shaped bleacher steel molds

2020
装配式PC模具研发制造中心(固安)正式投产运营

Prefabricated PC Mold R&D and Manufacturing Center (Gu'an) was officially put into operation

2022
进军风电混凝土塔筒钢模具市场

Enter the wind power concrete tower steel mold market

2022
研发制造出盾构管片系列钢模具

Developed and manufactured a series of steel molds for shield tube sheets

2023
注册成立河北榆构装备科技有限公司

Hebei Yugou Equipment Technology Co., Ltd. was registered and established

Milestones

Qualifications and honors

资质荣誉

Qualifications

资质荣誉

高新技术企业

High-Tech Enterprise

河北省创新型中小企业

Hebei Innovative SME

河北省科技型中小企业

Hebei Science and Technology SME







Patent certificates

专利证书









































System Certification

体系认证

ISO14001环境管理体系认证

ISO14001 Environmental Management System Certification

ISO45001职业健康安全管理体系认证

ISO45001Occupational Health and Safety Management System Certification

ISO9001质量管理体系认证

ISO9001 Quality Management System r Certification

ISO50001能源管理体系认证

ISO 50001 Energy Management System Certification









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Service content — Value-added Services

P09 一体化服务 Integrated Services
P11 整体解决方案 Integrated Solution
P12 增值服务 Value-added Services

业务介绍
Business Introduction

P15 智能装备 Intelligent Equipment
P29 智能产线 Intelligent Production Line
P39 高性能模具 High Performance Molds
P59 智造附件 Intelligently Manufactured Accessories

携手共进
Work hand in hand

P65 项目案例 Project Cases
P73 联系我们 Contact Us



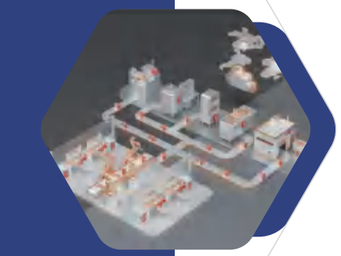
Integrated Services
一体化服务

立足于北京榆构四十余年在混凝土行业内的经验积累和技术创新，以国内外多个重大项目的设计、建设与实施的丰富实践，我们将整个生产的流程和产线的布局融汇贯通，向客户提供与预制混凝土相关的从工厂规划设计、产线布局提升、辅助设施规划、到智能装备制造，软件系统赋能的全方位一体化服务。

Based on Beijing Yugou’ s more than 40 years of experience and technological innovation in the concrete industry, and on our rich practical experience in the design, construction, and implementation of multiple major projects at home and abroad, we integrate the entire production process and production line layout, provide customers with comprehensive integrated services relating to prefabricated concrete, from factory planning and design, improvement of production line layout, auxiliary facility planning, to intelligent equipment manufacturing and software system empowering.



Factory
planning and design
工厂规划设计



Production line
Layout enhancement
产线布局提升



Equipment
Research & development and manufacturing
装备研发制造



Mould
Design and manufacturing
模具设计制造

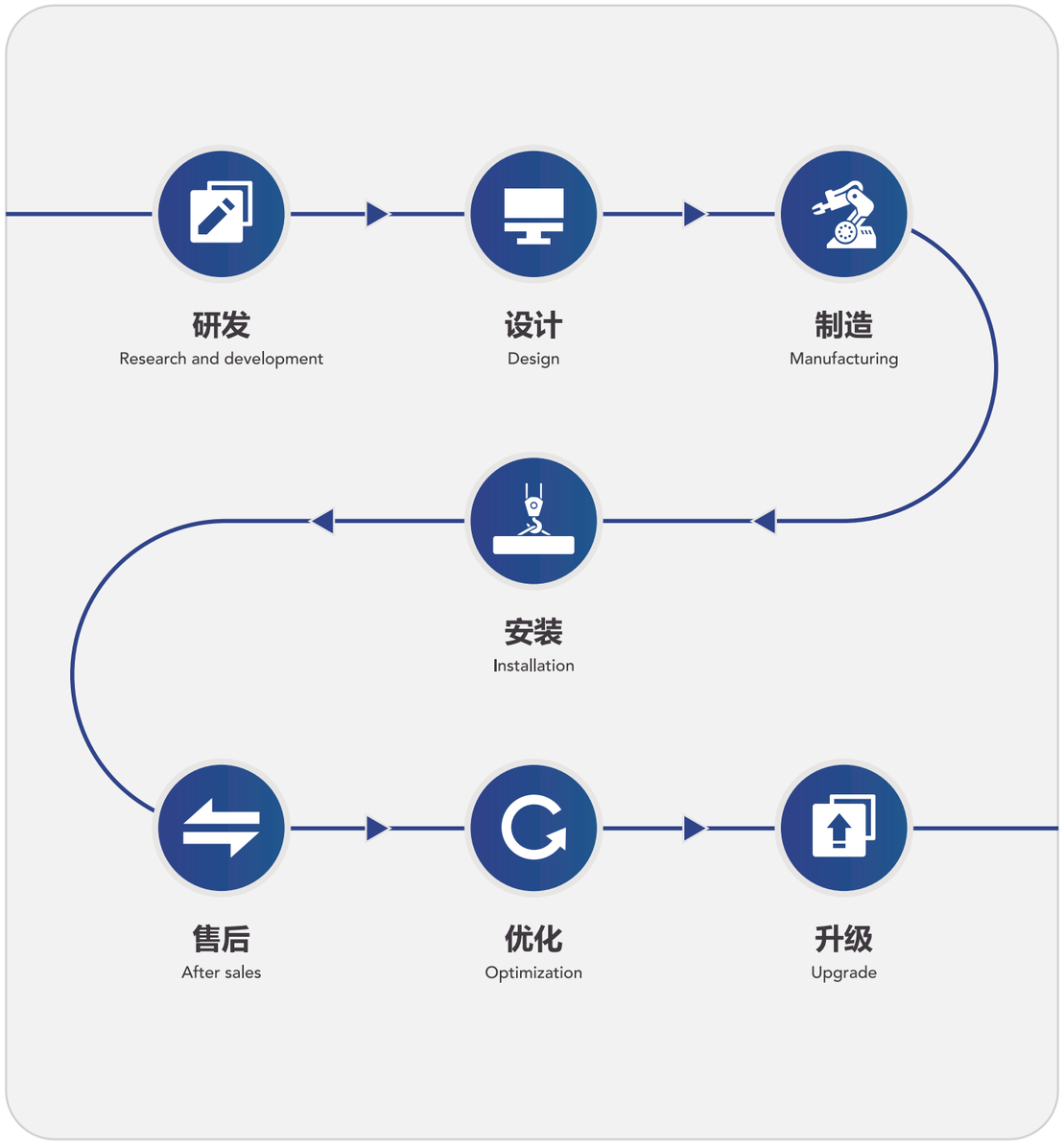


Software
Development services
软件开发服务

Integrated solution
整体解决方案

无论是安装、售后、亿优化还是升级，我们都将全程跟随。榆构装备不仅为您提供设备，更为您的项目提供周到的服务，确保您始终处于行业领先地位。

We carry out follow-up service throughout the process of installation, after-sales, optimization, and upgrade. Yugou Equipment not only provides you with equipment, but also with thoughtful services for your projects, ensuring that you always take the leading position in the industry.



Value-added Services
增值服务



生产工艺控制技术

我们深耕生产工艺领域，通过引入先进的控制技术，确保每一个环节都在您的掌控之中。榆构装备致力于提供创新的生产工艺控制技术，为您的项目注入更多灵活性和高效性。

Production process control technology

We delve deeply into the field of production technology and ensure that every move is under your control by introducing advanced control technologies. Yugou Equipment is committed to providing innovative production process control technologies, boosting your projects with more flexibility and efficiency.



混凝土材料技术

我们专注于混凝土材料技术的研发和创新。榆构装备将为您提供最先进的混凝土技术，以确保您的建筑项目长久拥有卓越的内在品质和外观质量。

Concrete material technology

We are dedicated to the research and innovation of concrete material technology. Yugou Equipment will ensure your construction projects with long-term excellent internal and external quality by providing you with the most advanced concrete technologies.



产品质控关键技术

我们注重每一个细节，通过先进的产品质控关键技术，保障您的每一个构件都符合最高标准。榆构装备致力于为您提供卓越的产品质量控制，确保每个建筑单元都是精工细作的杰作。

Key technologies for product quality control

We value every detail, and adopt advanced product quality control key technologies to ensure that every component of your product meets the highest standards. Yugou Equipment is committed to providing you with excellent product quality control, ensuring that every building unit is a masterpiece of exquisite craftsmanship.



信息化运营技术

在数字化时代，我们将信息化运营技术融入到项目中，以提高运营效率和实现精确管理。榆构装备将为您提供智能化的信息化运营技术，使您能够实时监控、追踪和优化整个生产流程。

Information operation technology

In the digital age, we improve operational efficiency and implement precise management by integrating information technology into projects. Yugou Equipment will enable you monitor, track, and optimize the entire production process in real time with our intelligent information operation technology.

Business Introduction
业务介绍

01 智能装备 Intelligent equipment

02 智能产线 Intelligent production line

03 高性能模具 High performance molds

04 智造附件 Intelligently manufactured accessories

Automatic mold cleaning robot

Automatic spraying robot

Automatic plastering robot

Laser wire breaking robot

Segment AI inspection robot

Automatic mold opening and closing robot

01
INTELLIGENT EQUIPMENT
智能装备

- **智能开/合模机器人**
  Automatic mold opening and closing robot
- **智能清模机器人**
  Automatic mold cleaning robot
- **智能喷涂机器人**
  Automatic spraying robot
- **智能粗/精抹面机器人**
  Automatic plastering robot
- **智能数字化AI检测机器人**
  Intelligent digital AI detection robot
- **AI布料与振捣系统**
  AI Concrete Distribution & Vibration System
- **智能激光断丝机器人**
  Intelligent Laser Prestressing Wire Cutting Robot
- **智能出入窑码垛系统**
  Intelligent In-out Kiln Palletizing System
- **智能翻转脱模装备**
  Intelligent Turning & Stripping Equipment
- **智能放张机**
  Intelligent Tension Release Machine
- **智能张拉机**
  Intelligent Tensioning Machine
- **智能检测、喷码机器人**
  Intelligent Inspection & Inkjet Coding Robot

▼ 智能开 (合) 模机器人

Intelligent mold opening (closing) robot



智能开 (合) 模机器人，为国内首台智能开 (合) 模工业机器人系统，填补了盾构管片智能制造领域关键技术装备的空白，开创了智能机器人替代传统人工操作在预制构件行业规模化应用的先河。通过创新性集成多模态智能传感融合技术、高动态响应伺服驱动系统与自适应控制算法，构建了具有毫微级闭环反馈的智能执行体系，实现了±0.3mm级工业级定位精度与180秒快速循环作业的突破性性能指标。系统搭载的机器视觉引导定位模块可实时解析亚像素级空间坐标数据，结合多维力觉感知阵列构建的数字模型，确保全工艺流程的精准运动控制。特别构建的多重冗余安全防护机制，包含异常状态预判系统，显著提升了生产线的本质安全水平，为基础设施智能建造树立了高端装备国产化标杆。

The intelligent mold opening (closing) robot is the first intelligent mold opening (closing) industrial robot system in China, filling the gap in key technical equipment in the field of intelligent manufacturing of shield tunnel segments and pioneering the large-scale application of intelligent robots to replace traditional manual operations in the prefabricated component industry. By innovatively integrating multimodal intelligent sensing fusion technology, high dynamic response servo drive system, and adaptive control algorithm, an intelligent execution system with nanoscale closed-loop feedback has been constructed, achieving breakthrough performance indicators of ± 0.3mm industrial grade positioning accuracy and 180 second fast cycle operation. The machine vision guided positioning module installed in the system can analyze sub-pixel level spatial coordinate data in real time, combined with a digital model constructed by a multidimensional force sensing array, to ensure precise motion control throughout the entire process. The specially constructed multiple redundant security protection mechanism, including an abnormal state prediction system, significantly improves the intrinsic safety level of the production line and sets a benchmark for high-end equipment localization in intelligent infrastructure construction.



▼ 智能清模机器人

Intelligent mold cleaning robot

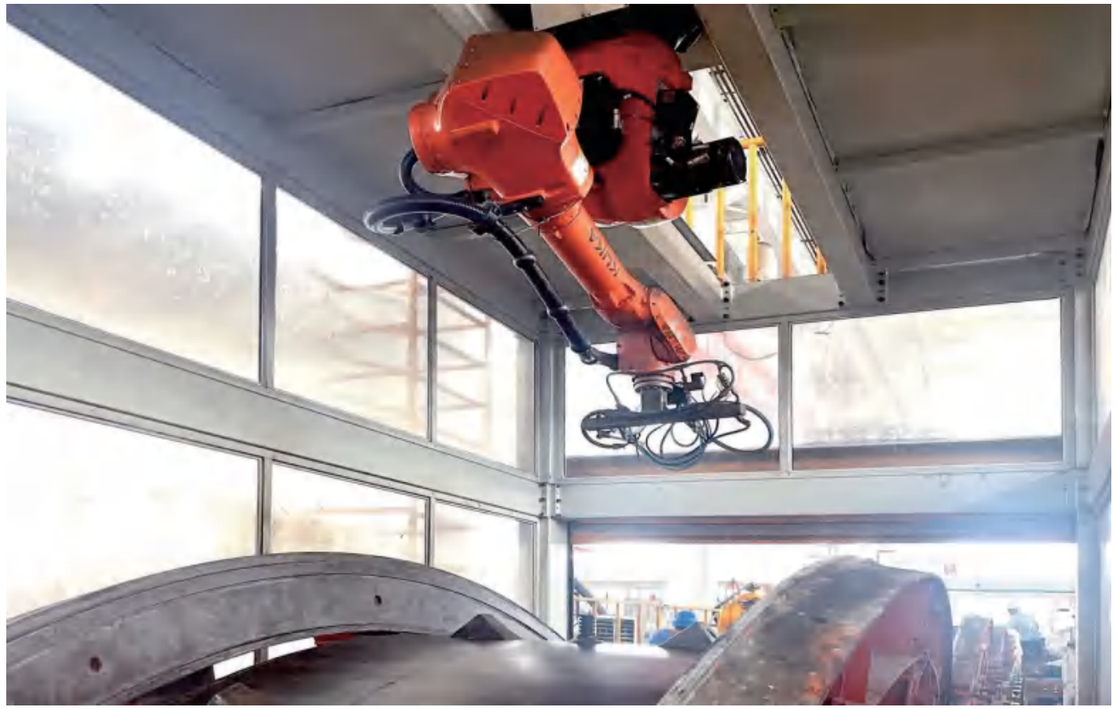


智能清模机器人，融合毛刷清扫、真空吸附多功能清洁技术，自动规划清洁模式与清扫路径，调整毛刷角度与动作幅度，实现高度拟人化的动态运动控制，高效深度清洁，同时具备高负压废渣回收处理功能，优化环境。

Intelligent cleaning robot, integrating brush cleaning and vacuum adsorption multifunctional cleaning technology, automatically plans cleaning modes and paths, adjusts brush angles and motion amplitudes, achieves highly humanized dynamic motion control, efficient deep cleaning, and also has high negative pressure waste recycling and processing function, optimizing the environment.

▼ 智能喷涂机器人

Intelligent spraying robot



智能喷涂机器人，融合智能控制系统与精密喷涂设备，能够自动分析喷涂路径和参数，实时调整喷涂流量、压力和雾化效果，配备智能传感器，可对脱模剂的液位、浓度等参数进行实时智能监测。

Intelligent spraying robot, integrating intelligent control system and precision spraying equipment, can automatically analyze spraying path and parameters, adjust spraying flow rate, pressure and atomization effect in real time, equipped with intelligent sensors, and can intelligently monitor the liquid level, concentration and other parameters of release agent in real time.

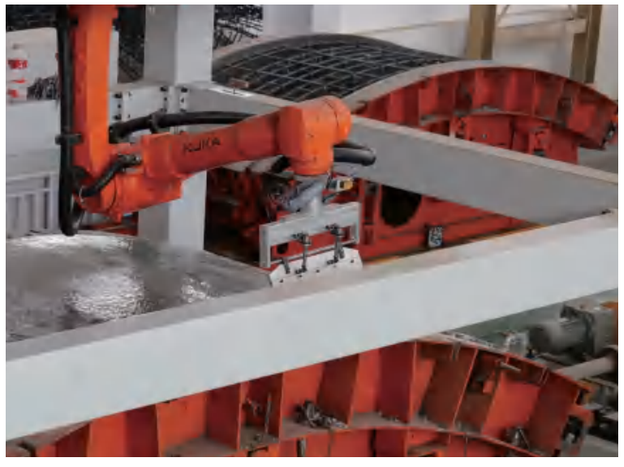
智能粗/精抹面机器人

Intelligent rough/fine plastering robot



智能粗抹面机器人，采用浮动式长抹板结构，结合自动控制系统和传感器技术，根据管片表面的平整度信息，调整抹盘的高度、角度，以最佳的压力、路径和速度对混凝土表面进行粗抹操作，具备自动清理抹板的功能。

The intelligent rough plastering robot adopts a floating long plastering plate structure, combined with automatic control system and sensor technology. Based on the flatness information of the pipe surface, the height and angle of the plastering disc are adjusted to perform rough plastering operation on the concrete surface with the best pressure, path and speed. It has the function of automatic cleaning of the plastering plate.

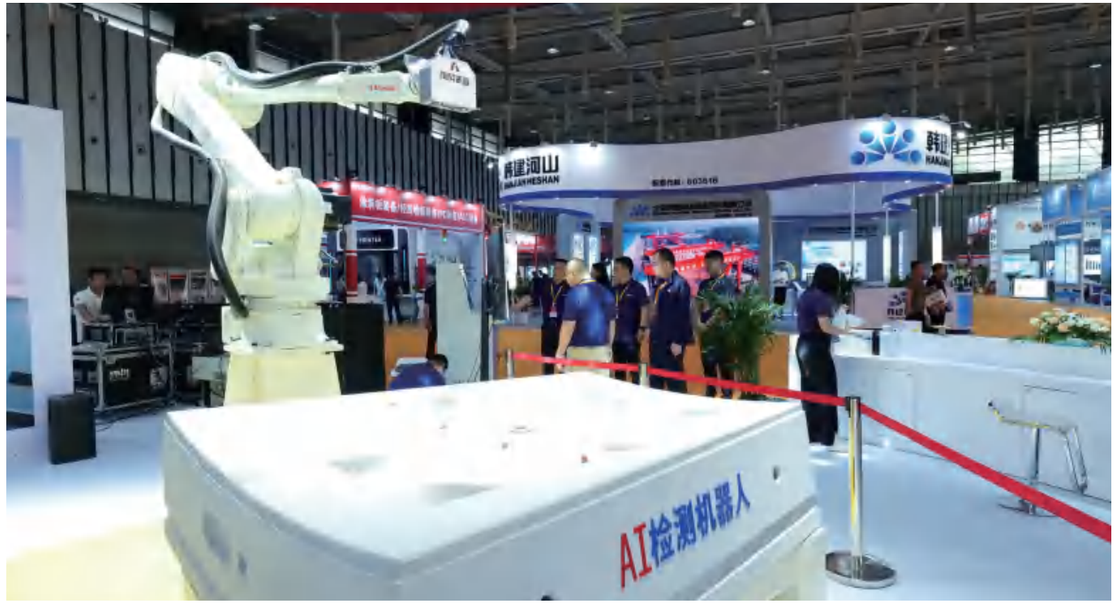


智能精抹面机器人，采用柔性抹面装置，配备智能控制系统，根据预设的平整度标准，自动规划抹面路径、调整抹面工具压力和角度等动作参数，精准模拟人工操作的精细度与灵活性，减少人为差异，显著提升平整度和光洁度。

The intelligent precision plastering robot adopts a flexible plastering device and is equipped with an intelligent control system. According to the preset flatness standard, it automatically plans the plastering path, adjusts the pressure and angle of the plastering tool and other action parameters, accurately simulates the precision and flexibility of manual operation, reduces human differences, and significantly improves flatness and smoothness.

智能数字化AI检测机器人

Intelligent digital AI detection robot



智能数字化AI检测机器人，针对性解决复杂构件快速、精密测量问题。将激光技术、视觉算法与机器人有机结合的盾构管片AI测量系统，具有学习、感知、推理、决策能力，在保证高精度测量的同时，大幅度扩展了测量范围。首先，激光技术与视觉算法，获取管片表面三维点云数据；随后，三维数据智能分析算法，生成管片全局三维描述；最终，三维形体分析与测量算法，计算管片的尺寸偏差。基于上述AI算法，本系统实现了测量范围大、检测精度高、测量时间短的盾构管片尺寸测量，为高水平的盾构管片生产提供了一种全新的质量保障手段。

Intelligent digital AI inspection robot, targeted to solve the problem of rapid and precise measurement of complex components. The AI measurement system for shield tunnel segments, which combines laser technology, visual algorithms, and robots, has the ability to learn, perceive, reason, and make decisions. While ensuring high-precision measurement, it greatly expands the measurement range. Firstly, laser technology and visual algorithms are used to obtain three-dimensional point cloud data of the pipe surface; Subsequently, the 3D data intelligent analysis algorithm generates a global 3D description of the pipe segment; Finally, the three-dimensional shape analysis and measurement algorithm are used to calculate the dimensional deviation of the pipe segments. Based on the above AI algorithm, this system has achieved a large measurement range, high detection accuracy, and short measurement time for measuring the size of shield tunnel segments, providing a new quality assurance method for high-level shield tunnel segment production.

智能数字化AI检测机器人

Intelligent digital AI detection robot



AI布料与振捣系统

AI Concrete Distribution & Vibration System



AI布料，行业首创，通过视觉技术与AI算法实现高精度布料，精度误差小于2%，由传统多人作业转变为远程操作，减少6名混凝土操作人员 。同时配备可调频振动器+气囊隔震系统，振动频率0-50Hz自动调节， 布料、振捣、压花工位安装全封闭隔音房，有效降低生产噪音，使得 噪音<85分贝。

AI concrete distribution, industry pioneer, achieves high-precision concrete distribution with visual technology and AI algorithms, with an accuracy error of less than 2%. It transforms tr- aditional multi-person operation into remote control, reducing six operators. Equipped with an adjustable-frequency vibrator and an airbag seismic isolation system, the vibration freque- ncy automatically adjusts from 0-50Hz. The concrete distribution, vibration, and surface fini- shing stations are installed with fully enclosed soundproof cabins, effectively reducing produ- ction noise to below 85 decibels.

▼ 智能激光断丝机器人

Intelligent Laser Prestressing Wire Cutting Robot



作为行业首台将激光技术应用于轨枕断丝工序的智能装备，它以双工位机器人搭配三维视觉定位与激光切割技术，实现全自动无接触截断。相比传统无齿锯，彻底消除烟尘与高频噪音，环保优势显著。

As the industry's first intelligent equipment to apply laser technology to the wire-cutting pro-cess for railway sleepers, it features a dual-station robot combined with 3D vision positioningand laser cutting technology to achieve fully automatic, non-contact severing. Compared wit-h traditional abrasive cut-off saws, it completely eliminates smoke, dust, and high-frequencynoise, offering significant environmental advantages.

▼ 智能出入窑码垛系统

Intelligent In-out Kiln Palletizing System



模具自动识别定位和抓取，以5模一组自动进出养护窑，20模/小时，智能调度，全自动工作，配合50吨重载子母车，平稳温控，确保养护品质。出窑后，成品码垛系统与RGV双车联动系统贯通全线，自动堆码、交叉倒运、精准横移，实现产存一体化高效运行。

The mould undergoes automatic recognition, positioning, and gripping, entering and exiting the curing kiln in groups of five mould at a rate of 20 mould per hour. Intelligent scheduling ensures fully automated operation, working in tandem with a 50-ton heavy-duty shuttle vehi- cle for stable temperature control to guarantee curing quality. After exiting the kiln, the fin- ished product stacking system integrates with the RGV dual-vehicle interlocking system, en- abling full-line automatic stacking, cross-transport, and precise lateral movement, achieving efficient operation with integrated production and storage.

▼ 智能翻转脱模装备

Intelligent Turning & Stripping Equipment



全自动智能脱模系统，智能识别模具类型与位置，自动夹持，全程无需人工干预，高频振动，快速脱模，轨枕表面光滑无损伤，外观合格率提升，返修率降低。

Fully automated intelligent demolding system, capable of smartly identifying mould type and position, automatic clamping, and requiring no manual intervention throughout the process. High-frequency vibration ensures rapid demolding with smooth and undamage- d rail sleeper surfaces, improving appearance qualification rates and reducing rework ra- tes.

▼ 智能放张机

Intelligent Tension Release Machine



单人控制、无劳动强度，可升降匹配不同高度。系统荷载精度〈士1%，放张速率0~20kN/s可调，杜绝骤放、缓慢放张。智能对中精度士1mm，数据记录、自动上传MES系统，有效保护预应力及成品质量。

Single-person operation with no labor intensity, adjustable height matching for different e- levations. System load accuracy < ±1%, release rate 0~20kN/s adjustable, eliminating su- dden release and ensuring gradual release. Intelligent centering accuracy ± 1mm, data rec- ording and automatic upload to MES system, effectively safeguarding prestress and finish- ed product quality.

▼ 智能张拉机

Intelligent Tensioning Machine



实现全过程自动张拉的设备，精度土1%，伺服驱动配合三轴姿态调整，自动对中精度土1mm，精准适配不同模具完成张拉作业。高精度拉力传感器+压力传感器，实时监测，减少应力损失，提高均匀性，关键参数存储年限自定，支持MES对接。

Fully automated intelligent demolding system, capable of smartly identifying mould type and position, automatic clamping, and requiring no manual intervention throughout the process. High-frequency vibration ensures rapid demolding with smooth and undamage- d rail sleeper surfaces, improving appearance qualification rates and reducing rework ra- tes.

▼ 智能检测、喷码机器人

Intelligent Inspection & Inkjet Coding Robot



2D+3D双视觉系统融合AI深度学习，自动完成多维尺寸、蜂窝麻面、细微裂纹等缺陷检测，在线喷码并实时生成报告，数据上传管理系统，确保每一根轨枕可追溯、高品质出厂。

Integrating a 2D+3D dual-vision system with AI deep learning, the equipment automatic- ally performs multi-dimensional inspection of defects including surface honeycombing, pi- tting, and fine cracks. It simultaneously executes online inkjet coding and generates real time reports, with all data uploaded to the management system-ensuring full traceability a -nd high-quality factory output for every sleeper.

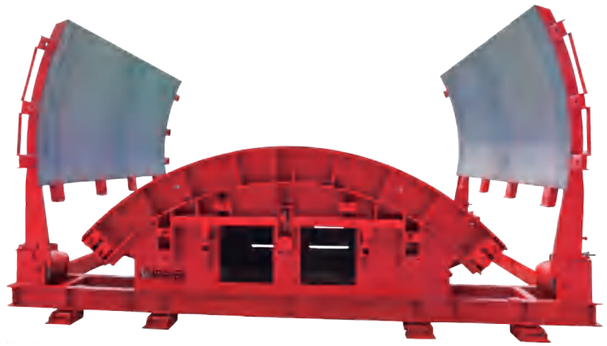
02
INTELLIGENT PRODUCTION LINE
智能产线

- **风电混塔智能生产线**
  Wind power mixing tower intelligent production line
- **铁路支承块智能生产线**
  Railway support block intelligent production line
- **铁路轨枕智能生产线**
  Railway sleeper intelligent production line
- **装配式建筑PC生产线**
  Prefabricated building PC production line
- **桥梁智能生产线**
  Bridge intelligent production line
- **智能化双块生产线**
  Intelligent dual block production line
- **盾构管片智能生产线**
  Shield segment intelligent production line



▼ 风电混塔智能生产线
Wind power mixing tower intelligent production line





风电混塔管片模具
Wind power hybrid tower pipe mold



风电混塔安装现场
Wind power mixing tower installation site

▼ 盾构管片智能生产线

Shield segment intelligent production line



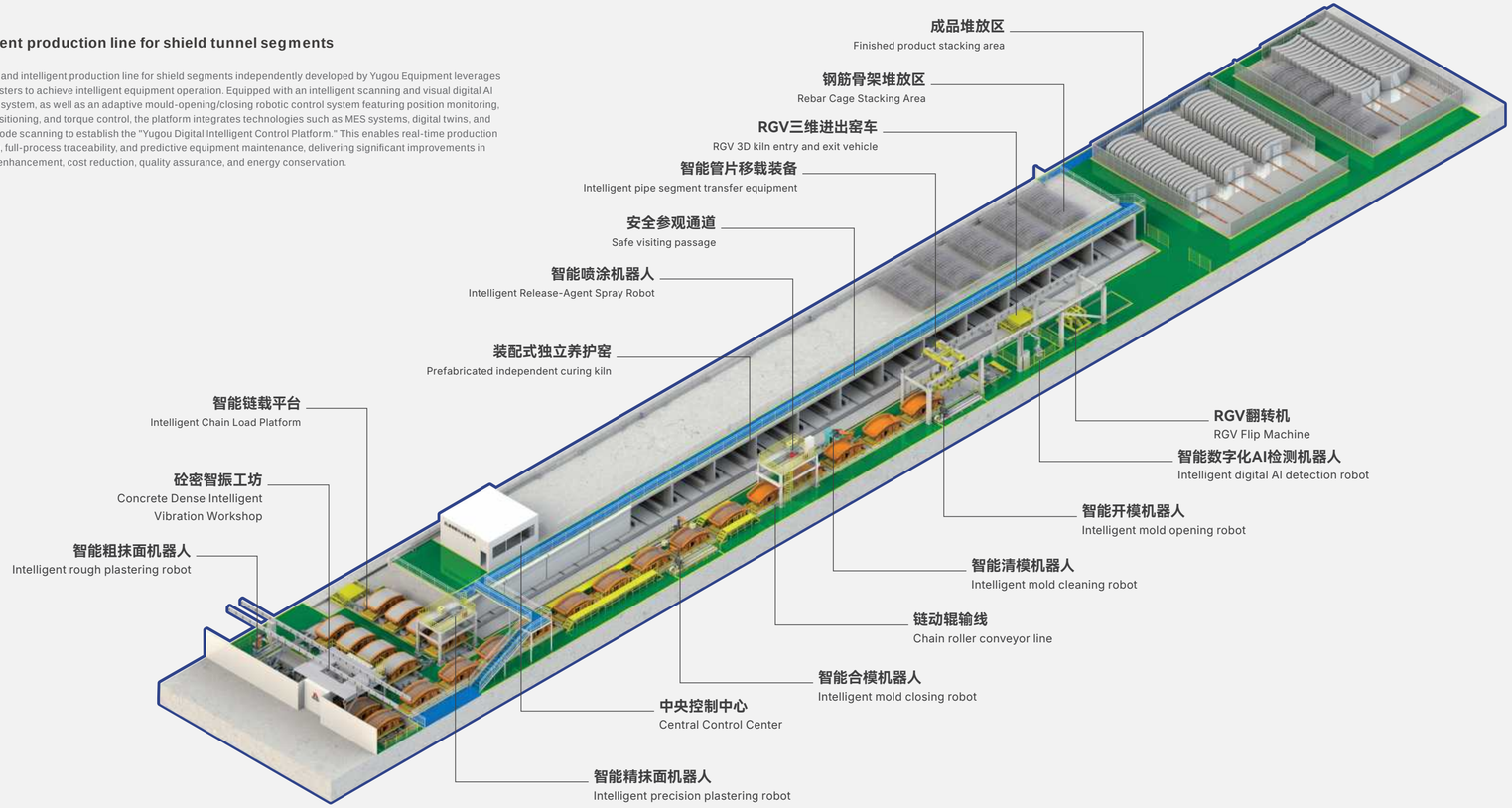


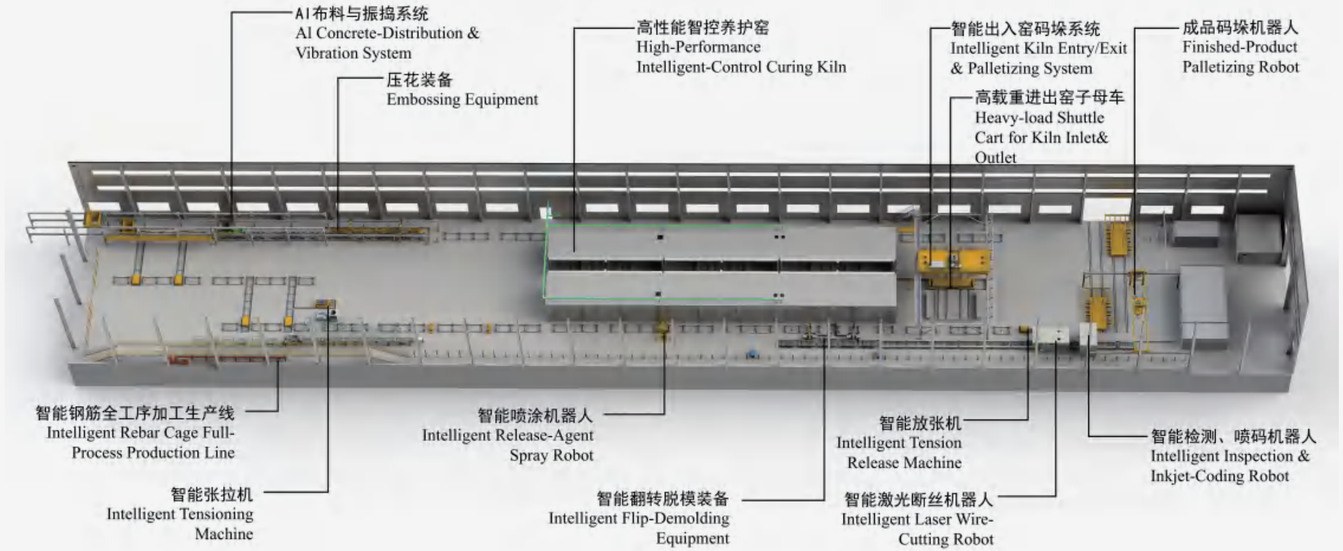
盾构管片数智化产线

榆构装备自主研发的盾构管片数智化产线，依托机器人集群实现装备智能化，搭载智能扫描与视觉数字化AI检测系统，基于巡位、定位、扭力控制的自适应开合模机器人控制系统，并通过MES系统、数字孪生、孔码扫描等技术搭建"榆构数字化智控平台"，实现生产实时监控、全流程追溯与设备预测性维护，在提效降本、提质保安、节能减排等方面成效显著。

Intelligent production line for shield tunnel segments

The digital and intelligent production line for shield segments independently developed by Yugou Equipment leverages robotic clusters to achieve intelligent equipment operation. Equipped with an intelligent scanning and visual digital AI inspection system, as well as an adaptive mould-opening/closing robotic control system featuring position monitoring, precise positioning, and torque control, the platform integrates technologies such as MES systems, digital twins, and borehole code scanning to establish the "Yugou Digital Intelligent Control Platform." This enables real-time production monitoring, full-process traceability, and predictive equipment maintenance, delivering significant improvements in efficiency enhancement, cost reduction, quality assurance, and energy conservation.





数智化轨枕生产线

榆构装备秉承精益求精、提质增效、绿色低碳的新发展理念，致力于解决业内传统产线人员冗杂、噪音大、污染严重、劳动强度大、作业环境差等痛点，通过全线流程创新与全域模组升级，实现了行业领先的预应力轨枕数字化智能制造模式。

基于榆构集团的大科研平台，榆构装备聚焦精准布料、智能检测、全自动码垛系统、高载重子母车、MES+数字孪生系统研究，打造出可随时换产、高兼容性的柔性数智轨枕产线，完成了关键工序无人化的代际跃迁，相较于传统产线，该柔性数智轨枕产线可减少用人约20名，日产能突破2400根，年产能达70万根、超10万立方米混凝土。

Railway sleeper intelligent production line

Guided by the principles of excellence, quality and efficiency improvement, and green, low-carbon development, Yugou Equipment addresses the key challenges of traditional production lines, including excessive staffing, high noise levels, pollution, labor-intensive operations, and poor working conditions. Through full-process innovation and comprehensive module upgrades, it has developed an industry-leading digital and intelligent manufacturing model for prestressed concrete sleepers.

Leveraging Yugou Group's R&D platform, Yugou Equipment focuses on precision concrete placing, intelligent inspection, fully automated stacking, high-load transfer systems, and MES + digital twin technologies. The resulting highly compatible, flexible intelligent sleeper production line enables rapid product changeovers and unmanned operation of key processes. Compared with conventional lines, it reduces staffing by approximately 20 workers, achieves a daily output of over 2,400 sleepers and an annual capacity of 700,000 sleepers, representing more than 100,000 m³ of concrete.

▼ 铁路轨枕智能生产线

Railway sleeper intelligent production line





▼ 智能化双块轨枕生产线

Intelligent Double block rail sleeper production line







国际领先的智能化双块轨枕生产线，配备10余项智能系统，实现从钢筋组装到成品检测码垛的全流程智能化操作。智能布料系统以±3%的超高精度灌注，温控系统全程自动控制在±2℃范围内。每130秒就有一模高品质轨枕诞生，单班产能突破1152根，双班日产高达2304根，创下行业新纪录!

The world-leading intelligent dual-block sleepers production line features over 10 smart systems, enabling fully automated operations from steel bar assembly to finished product inspection and palletizing. Its intelligent material distribution system ensures ultra-high precision pouring with ±3% accuracy, while the temperature control system maintains automatic operation within ±2°C throughout the process. One high-quality sleeper is produced every 130 seconds, with a single-shift output exceeding 1,152 pieces and a daily production capacity of up to 2,304 pieces across two shifts – setting a new industry record!

▼ 铁路支承块智能生产线

Railway support block intelligent production line





▼ 数智化轨道板生产线

Digital & Intelligent Track Slab Production Line



数智化轨道板生产线，生产节拍10分钟/块，预留调整至7-8分钟的冗余；每天工作时间按20小时计算，日产量120块/天。最大日产量可以达到160块；增加产量时只增加模具数量及蒸养房面积，其余成本不增加。不同规格板型（含所有III型板）均可以同时在线生产，且可以根据扫描模具上的射频芯片确定模具规格，然后设备自动调整成符合模具规格的尺寸。关于轨道板的性能与几何精度：（1）张拉精度达到±1.5%（标准要求±5%），张拉速率小4KN/S，且可无极调速；（2）放张速率小于2KN/S，实现4边双向同步放张。产品兼容性：高铁III型轨道板、地铁轨道板、管片等可以同时在线生产。

The production cycle is 10 minutes per slab, with design redundancy allowing adjustment to 7–8 minutes per slab. Based on 20 operating hours per day, the line can produce 120 slabs/day, with a maximum capacity of 160 slabs/day. Capacity expansion only requires additional molds and increased steam-curing chamber space, with no additional cost for other equipment.

Different slab specifications, including all CRTS III slab types, can be produced simultaneously on the same line. RFID chips embedded in the molds are automatically scanned to identify mold specifications, enabling the equipment to automatically adjust to the required dimensions.

Performance & Geometric Accuracy

Prestressing accuracy: ±1.5% (standard requirement: ±5%); tensioning rate <4 kN/s, with continuously variable speed control.
Detensioning rate: <2 kN/s, with synchronized bidirectional release on all four sides.

Product Compatibility
The line supports simultaneous production of CRTS III high-speed railway track slabs, metro track slabs, tunnel segments, and other precast products.

▼ 桥梁智能生产线

Bridge intelligent production line

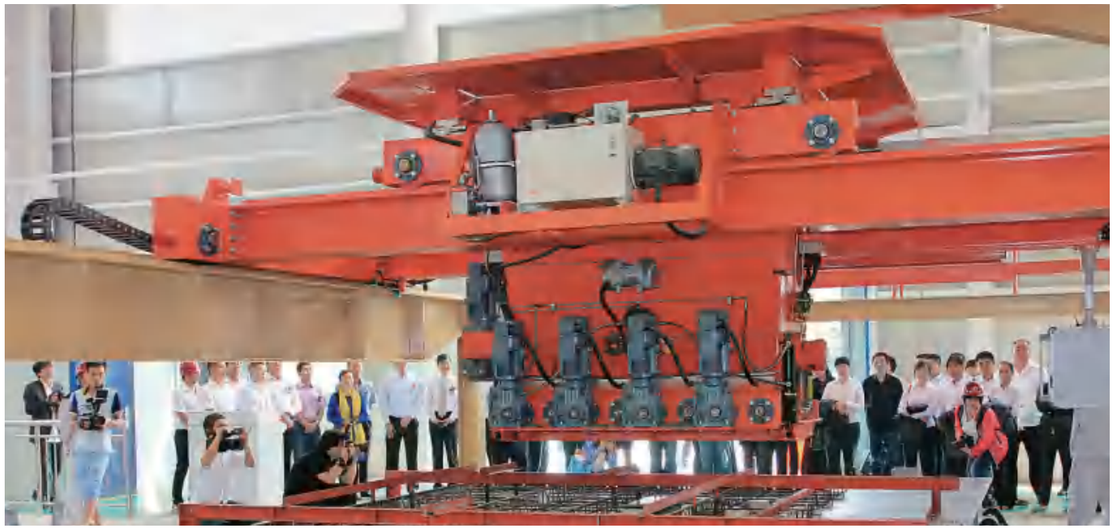


数智化桥梁生产线采用智能化、流水线生产模式，配备钢筋加工中心、智能养护系统、智能张拉系统， 依托物联网与数据分析实现工序自动衔接、全程精准管控，物流高效、安全可靠。产能较传统生产线提升 40%，生产周期压缩至24小时，养护能耗降低25%，并通过MES 系统、数字孪生及一体化控制中心，实现 钢筋加工、混凝土浇筑、自动养护、智能张拉、压浆等关键环节可视化、智能化生产。

Based on the production mode of intelligent construction process and assembly line operation, the intelligent beam yard automation production line can automatically collect, analyze, and manage data using the"Internet of Things+data analysis" technology, implement intelligent and automated operation of each process, and perform precise control of each prefabrication link. The production line features high logistics efficiency, safety and construction efficiency, as well as guaranteed professional procedures.

▼ 装配式建筑PC生产线

Prefabricated buildingPC production line





03

HIGH PERFORMANCE MOLDS

高性能模具

- **盾构管片模具**
  Shield segment mold
- **风电混塔模具**
  Mixed tower mold
- **体育场馆看台模具**
  Stand molds for stadium
- **轨枕模具**
  Rail sleeper mold
- **清水外墙挂板模具**
  Fair-faced concrete exterior wall hanging board mold
- **双块轨枕模具**
  Double block rail sleeper mold
- **节段拼装梁模具**
  Segmental assembly beam mold
- **地下综合管廊模具、箱涵模具**
  Underground integrated pipe gallery mold/ box culvert mold
- **浮置板·轨道板模具**
  Floating plate and track plate mold
- **住宅产业化模具**
  Residential industrialization mold

盾构管片模具

Shield segment mold





北京站至北京西站地下直径线工程

Undergrounddiametrical linerpject fom Beijing Stion to BeijingWest Station



卧式混塔管片模具

Horizontal wind power hybrid tower pipe mold



立式混塔管片模具

Vertical Wind Turbine Concrete Tower Segment Mold



体育场馆看台模具

Stand molds for stadium



预制清水混凝土看台模具

Precast Fair-faced Concrete Bleacher Mould

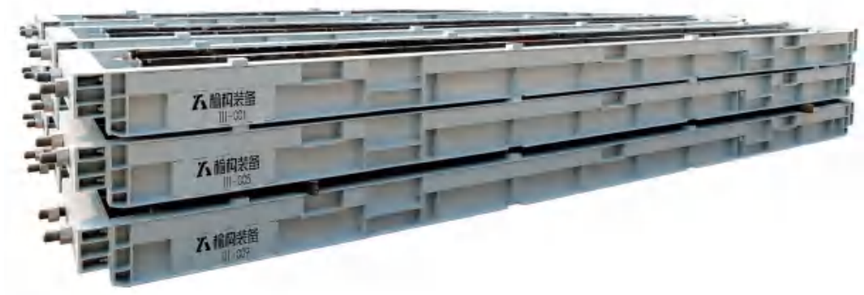


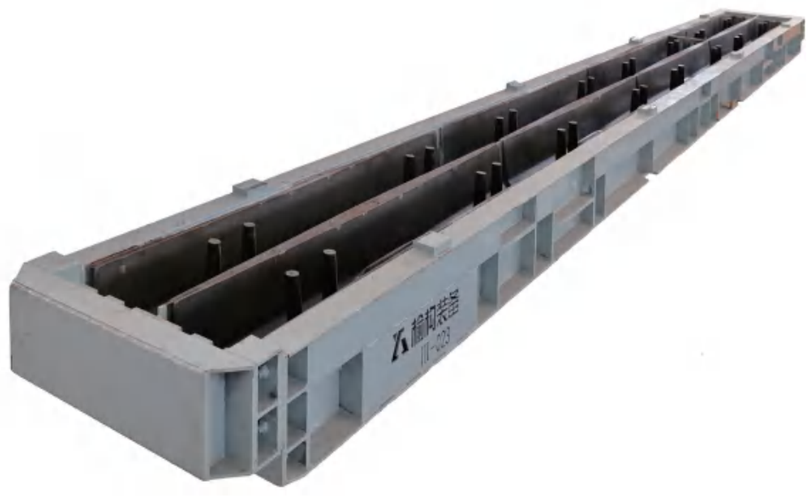
国家速滑馆弧形预制看台

Curved Prefabricated Bleachers at the National Speed Skating Center

轨枕模具

Rail sleeper mold





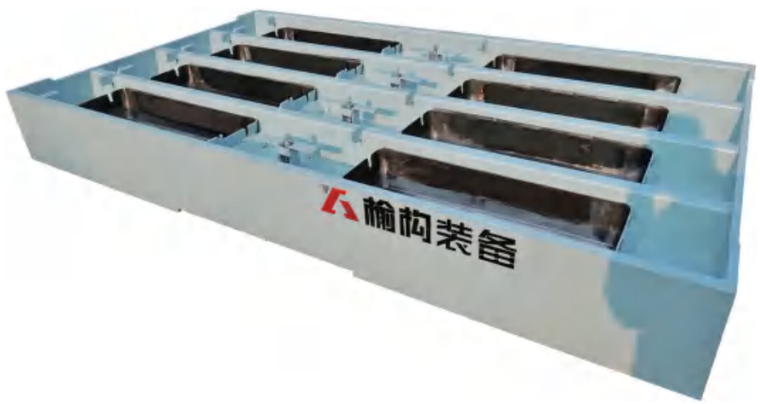
轨枕成品堆场

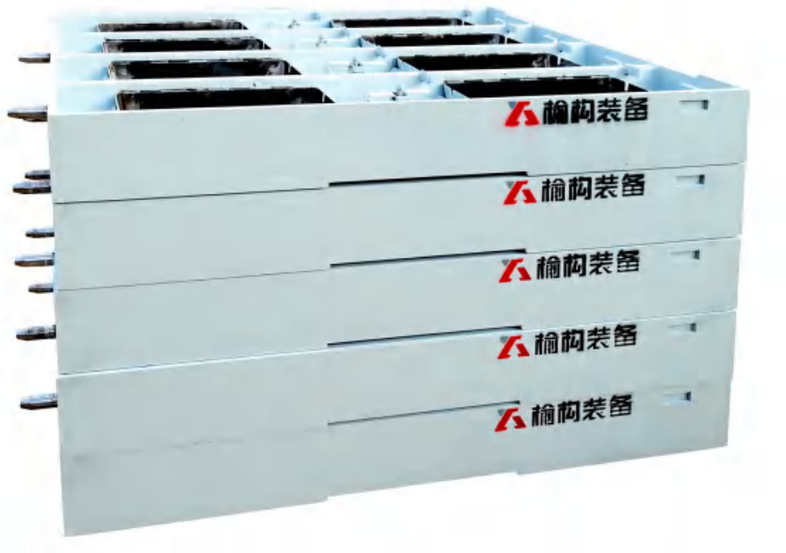
Storage yard for rail sleeper finished products



双块轨枕模具

Double block rail sleeper mold





双块轨枕成品堆场

Double block rail sleeper finished product yard



轨道板模具

track plate mold

多品类轨道板模具研发，多种结构强度设计，更具性价比的刚度和稳定性，能够满足普通混凝土和预应力混凝土浮置板与轨道板生产及精度需求，操作便捷可靠

Multi-category floating slab and track slab mould research and development, a variety of structural strength design, more cost-effective stiffness and stability, can meet the ordinary concrete and prestressed concrete floating slab and track slab production and precision needs, convenient and reliable operation.



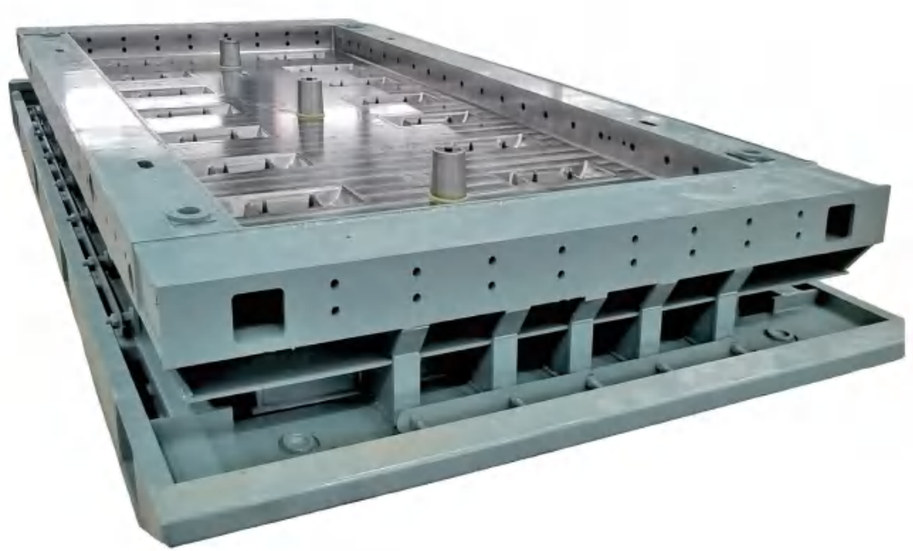
轨道板模具

Track Plate Mould



轨道板成品

Finished Track Slab



轨道板模具

Track Plate Mould



轨道板成品

Finished Track Slab

▼ 清水外墙挂板模具

Fair-faced concrete exterior wall hanging board mold





北京城市副中心清水外墙挂板

Beijing UrbanVice Center ClearWaterWall Hanging Panel

榆构集团办公楼项目



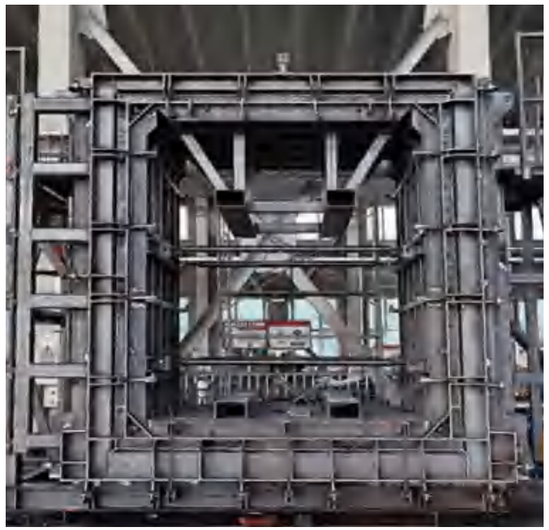
▼ 地下综合管廊模具、箱涵模具

Underground integrated pipe gallery mold/ box culvert mold



箱涵模具

Box culvert mold



卧式管廊模具

Horizontal Pipe Corridor Mould



管廊构件成品

Finished pipeline corridor components

沈阳浑南科技城综合管廊建设项目

Comprehensive Pipe Gallery Construction Projed of Shenyang Hunnan Science and Technology City



节段拼装梁模具

Segmental assembly beam mold







节段拼装梁安装现场

Installation site of segmental assembly beam

住宅产业化模具

Residential industrialization mold





墙板成组立模

北京丰台区榆树庄回迁房工程 YushuVillage Relocation Housing Project in Fengtai District, Beijing



04
INTELLIGENTLY MANUFACTURED ACCESSORIES
智造附件

- **水平拼装试验台**
  Horizontal assembly test bench
- **检漏试验台**
  Leak detection test bench
- **真空吸盘**
  Vacuum sutcon cup
- **翻转机**
  Flipping machine
- **构件吊具**
  Component hanger

▼ 水平拼装试验台

Horizontal assembly test bench





▼ 检漏试验台

Leak test bench



▼ 真空吸盘

Vacuum sucker cup



▼ 拼装平台



▼ 翻转机

Flipping machine





▼ 构件吊具

Component hanger



PROJECT CASES
项目案例

National Stadium
(Bird's Nest)

国家体育场(鸟巢)

国家体育场为2008年第二十九届北京奥林匹克运动会的主体育场，建筑总高为69.24m，其平面呈圆形，上部由巨形空间钢桁架“鸟巢”覆盖，内部为清水混凝土看台，分上、中、下三层共97排，采用在现浇看台梁柱结构上安装清水混凝土预制看台板设计方案。该工程预制看台板由我公司负责设计、生产制作及专业施工安装咨询。

The National Stadium is the main stadium of the 29th Beijing Olympic Games in 2008. The total height of the building is 69.24 meters, and its plan is circular. The upper part is covered by a giant space steel frame called the "Bird's Nest", and the interior is a plain concrete stand, consisting of 97 rows of upper, middle, and lower floors. The design scheme adopts the installation of precast plain concrete viewing platforms on cast-in-place stand beams and columns. Our company is responsible for the design, production, and professional construction and installation consulting of the prefabricated grandstand panels for this project.

建造时间: 2006年
Time of construction: 2006

工程地址: 北京奥林匹克体育中心
Address: National Olympic Sports Centre

设计单位: 中国建筑设计研究院
Designer: China Architecture Design & Research Group

建筑面积: 25.83 万m² , 9.1万座
Building area: 258,000m², 91,000 seats

构件数量: 看台板10056块，踏步板4600块，楼梯70件
Number of components: 10,056 stand boards, 4,600 tread boards, and 70 staircases





北京城市副中心

北京城市副中心位于通州区路城镇，总用地面积约155平方公里，其中行政办公区占地约6平方公里，建设规模约380万平方米。分A、B两大组团，其中A组团为市委、市人大、政协办公用楼，B组团1-4地块建成后将成为北京市各委办局办公用楼。

Beijing Municipal Administrative Center

Beijing Municipal Administrative Center, located in Lucheng Town, Tongzhou District, covers a total land area of about 155 square kilometers, including an administrative office area of about 6 square kilometers and a construction scale of about 3.8 million square meters. The Center is divided into two blocks, A and B. Block A are the office buildings for the Municipal Party Committee, Municipal People's Congress, and Political Consultative Conference. Block B, after the completion of plot 1-4, will become the office buildings for various committees and bureaus in Beijing.

建造时间： 2017年
Time of construction: 2017

工程地址： 北京市通州区
Address: TongzhouDistrict,Beijing

设计单位： 中国建筑设计研究院
Designer: China Architecture Design & Research Group

构件数量：
Number of components:

A2 工程预制窗口型挂板及预制清水挂板共计 20234 m^2

B3、B4工程预制清水复合保温墙板及石材复合保温墙板共计 18120 m^2

The A2 project includes a total of 20,234 m^2 of prefabricated window type hanging panels and fair-faced concrete hanging panels while the B3 and B4 projects include a total of 18,120 m^2 of fair-faced concrete composite insulation wall panels and stone composite insulation wall panels.





National Speed Skating Oval of Winter
Olympics Main Gymnasium (The Ice Ribbon)

冬奥会主体育馆国家速滑馆（冰丝带）

国家速滑馆位于中国北京奥林匹克公园规划范围内，项目用地为北京2008年奥运会临时场馆（曲棍球场、射箭场）原址。规划用地范围约20公顷，建筑面积约8万m^2，建筑高度不超过55m，场馆座席约12000席，是北京2022年冬奥会的标志性场馆，冬奥会期间将承担速度滑冰项目（SpeedSkating）的比赛和训练。国家速滑馆预制看台工程从方案设计到模具加工、PC生产及施工安装，全部由榆构集团完成。其中的装配施工是由榆构旗下北京榆构建筑工程有限公司完成。

The National Speed Skating Oval is located within the planned scope of the Beijing Olympic Park in China, and at the original site of the temporary venues (hockey field, archery field) of the 2008 Beijing Olympics. The project covers a planned land area of about 20 hectares and a building area of about 80,000 square meters, with building height not more than 55m. The venue has approximately 12,000 seats and is an iconic venue for the Beijing 2022 Winter Olympics.During the Winter Olympics, the venue will undertake the competition and training of speed skating. The prefabricated stand project of the National Speed Skating Oval from scheme designtomold processing,PC production, and construction installation,was all completed by Yugou Group.The assembly was completed by Bejing Yugou Construction Engineering Co., Ltd., a subsidiary of Yugou.





建造时间：
Time of construction:
2018 年
2018

工程地址：
Address:
北京奥林匹克体育中心
National Olympic Sports Centre

构件数量：
Number of components:
预制清水混凝土看台板（直线段、弧线段），预制清水再生混凝土看台板，
预制楼梯、距踏步、栏板、挂板共计1532m^3
Prefabricated fair-faced concrete stand boards (straight and curved sections) prefabricated fair-faced recycled concrete stand boards, prefabricated stairs, steps, fence boards, and hanging boards, 1,532m^3 in total.

Contact Us

联系我们

无论您以何种方式联系到我们，榆构装备都将为您竭诚提供有关规划设计、智能装备、模具制作、软件开发等全产业链的精准服务。您的需求将会成为我们最高优先级的服务项目序列，并致力于与您共同打造提振中国制造的产业链条，用智能服务生产，以服务赋能行业。榆构装备将一直在这里，与您携手并进，共创未来。

No matter how you contact us, YuGou Equipment will wholeheartedly provide you with accurate services related to the entire industry chain, including planning and design, intelligent equipment, mold making, software development, etc. Your needs will become our highest priority service project sequence, and we are committed to working with you to build an industrial chain that boosts Chinese manufacturing, using intelligent services for production, and empowering the industry with services. YuGou Equipment will always be here, working hand in hand with you to create a better future.

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北京榆构建筑工程有限公司
Beijing Yugou Construction Engineering Co., Ltd.

河北榆构建材有限公司
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Beijing Precast Concrete Institute Co., Ltd.

北京榆构觉一文创科技有限公司
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Hebei Yugou Equipment Technology Co., Ltd.

北京榆构新能源科技有限公司
Beijing Yugou New Energy Technology Co., Ltd

北京榆构轨道新材料有限公司
Beijing Yugou Precast Concrete Engineering

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