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无锡洲翔成套焊接设备有限公司

WUXI ZHOUXIANG COMPLETE SET OF WELDING EQUIPMENT CO., LTD.

Add: 江苏省无锡市锡山区电力装备产业园怀仁路68号
Industry Garden Donghu, Donggang Town, Wuxi City, Jiangsu, China
TEL: 400 828 0778 FAX: 0510- 88791142
Http: //www.wxzhouxiang.com E-mail: info@wxzhouxianghi.com

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(202509)

洲翔焊割

30 多年专注
大型焊割装备研发生产
1991~2025

从陆地到海洋，
智造从未止步，
无锡洲翔，
赋能船舶工业新篇章！

From land to sea,
Intelligent manufacturing has never stopped,
Wuxi Zhouxiang,
Empowering a new chapter in the
shipbuilding industry!

前言 PREFACE

在船舶制造领域，精度与效率是提升企业国际竞争力的关键。作为焊接与自动化装备领域的创新引领者，无锡洲翔成套焊接设备有限公司以“智造赋能工业升级”为使命，聚焦船舶行业工艺难点，不断拓展技术边界，为全球客户提供高效、精准、可靠的智能装备支持。

针对船舶T型材加工中组立精度低、矫正耗时长、表面处理一致性差等行业痛点，我们开发了“T型材面板倒棱打磨机”“T型材组焊自动一体机”“T排龙门焊”“T型材矫正机”等多种设备，覆盖从结构成型到成品优化的全链路工艺，为船舶T型材加工提供了一站式解决方案。

同时针对船舶小组立件的焊接，我公司全自主研发的智能机器人焊接工作站实现了一主多从的多机任务分配协同焊接，大大提高了焊接效率，提高了焊接可达率。尤其适用于船舶行业大幅面板件的焊接。

无锡洲翔通过模块化设计、AI动态纠偏与协同控制技术，实现了装配效率提升40%的显著成效，设备表面处理光洁度严格符合国际船级社标准，有效助力船企大幅降低人工成本，缩短交付周期。所有设备具有高度的灵活性，可根据用户生产工艺重点、生产场地和生产工作量的不同，组合成不同的流水作业线，也可单机使用，确保重点工艺生产段的高效运行。为满足不同客户的多样化需求，我们特别推出定制化服务。

以智能化、绿色化为导向，无锡洲翔持续迭代数字化焊接与自动化产线技术，为船舶海工、重型装备等领域提供定制化解决方案。未来，我们将携手全球合作伙伴，凭借卓越的品质和匠心服务，共同谱写高端装备智造的新篇章！

In the shipbuilding industry, precision and efficiency are key to enhancing a company's international competitiveness. As an innovative leader in the field of welding and automation equipment, Wuxi Zhouxiang Complete Welding Equipment Co., Ltd. is committed to "Empowering Industrial Upgrades through Intelligent Manufacturing." The company focuses on addressing technical challenges in the shipbuilding industry, continuously expanding technological boundaries, and providing global customers with efficient, precise, and reliable smart equipment solutions.

To address industry pain points such as low assembly accuracy, prolonged correction time, and inconsistent surface treatment in the processing of ship T-steel sections, we have developed a range of equipment including the "T-Steel Panel Bevel Grinding Machine," "T-Steel Automatic Welding and Assembly Machine," "T-Steel Gantry Welding," and "T-Steel Correction Machine." These solutions cover the entire process from structural forming to finished product optimization, providing a one-stop solution for ship T-steel section processing.

In addition, for the welding of ship block assemblies, our company's fully self-developed intelligent robotic welding workstation achieves multi-machine task allocation and collaborative welding with one master and multiple slaves, significantly improving welding efficiency and accessibility. It is particularly suitable for the welding of large flat panels in the shipbuilding industry.

Wuxi Zhouxiang has achieved a remarkable 40% improvement in assembly efficiency through modular design, AI dynamic alignment correction, and collaborative control technology. The surface treatment of the equipment strictly complies with international classification society standards, effectively helping shipyards significantly reduce labor costs and shorten delivery cycles. All equipment boasts high flexibility, allowing it to be configured into various assembly lines based on users' production priorities, workspace, and workload, or used as standalone units to ensure efficient operation of key process segments. To meet the diverse needs of different customers, we have specifically introduced customized services.

Guided by the principles of intelligence and green innovation, Wuxi Zhouxiang continues to iterate on digital welding and automated production line technologies, delivering customized solutions for sectors such as shipbuilding, offshore engineering, and heavy machinery. In the future, we will collaborate with global partners to craft a new chapter in high-end equipment manufacturing with exceptional quality and meticulous craftsmanship!



公司简介

COMPANY PROFILE

无锡洲翔成套焊接设备有限公司成立于1991年，总部位于江苏无锡。洲翔先后获得“国家级专精特新小巨人企业”、“国家高新技术企业”、“中国焊接设备行业优秀企业”、“江苏省智能制造领军服务机构”、“江苏省先进级智能工厂”、“江苏省工业设计示范企业”等荣誉称号。

企业建有江苏省企业技术中心、江苏省工程技术研究中心、江苏省博士后创新实践基地等重点研发和人才培养平台；与多所知名高校院所建立了产学研合作关系，先后承担了国家、省市级科研项目10余项；现拥有专利200余项，其中发明近50项，参与编制2项国家标准；产品获“江苏省首台(套)重大装备产品”、“江苏省重点企业推广应用的新技术新产品”、“江苏省高新技术产品”“江苏省著名商标”、“江苏省名牌产品”等荣誉；还通过ISO9001质量管理体系、ISO14000环境管理体系、ISO45001职业健康安全管理体系、ISO 50001能源管理体系等体系认证。

公司以智能化焊接装备研发与制造为核心，深耕钢结构行业三十余年，凭借深厚技术积淀成功进军船舶制造领域，现已成为船舶T型材智能焊接装备专业服务商。作为国内智能焊接装备的先行者，无锡洲翔在钢结构领域积累了丰富的技术经验，服务涵盖桥梁、建筑、能源等大型工程。2016年战略布局船舶制造领域，公司聚焦船舶制造行业痛点，自主研发T型材智能焊接设备，实现高精度组立、自动化焊接、智能矫正一体化，助力船企降本增效，推动船舶制造工艺革新。在船舶制造细分领域，针对船舶小组立件的焊接难题，公司发挥自身技术优势，全自主研发了智能机器人焊接工作站。该工作站创新性地实现了一主多从的多机任务分配协同焊接模式，极大地提高了焊接效率与焊接可达率。

Wuxi Zhouxiang Complete set Welding Equipment Co., Ltd. was founded in 1991, headquartered in Wuxi, Jiangsu. Zhouxiang has won the honorary titles of "National - level specialization little giant firm", "National High - tech Enterprise", "Excellent Enterprise of China welding Equipment Industry", "Leading Service Organization of Intelligent Manufacturing in Jiangsu Province", "Advanced Intelligent Factory of Jiangsu Province", "Demonstration Enterprise of Industrial Design in Jiangsu Province" and so on.

The company has established key R&D and talent training platforms such as Jiangsu Enterprise Technology Center, Jiangsu Engineering Technology Research Center, and Jiangsu Postdoctoral Innovation Practice Base. It has established industry - university - research cooperation with a number of well - known universities and institutes, and has undertaken more than 10 national, provincial and municipal research projects; Now has more than 200 patents, including nearly 50 inventions, participated in the preparation of 2 national standards; The products have won the honors of "Jiangsu Province's first major equipment product", "New technologies and new products focused on promotion and application in Jiangsu Province", "Jiangsu Province high - tech products", "Jiangsu Province Famous Trademark", "Jiangsu Province Famous Brand Products" and so on. The company has also passed ISO9001 quality management system, ISO14000 environmental management system, ISO45001 occupational health, safety management system certification and ISO50001 energy management system.

ZHOUXIANG specializes in the R&D and manufacturing of intelligent welding equipment, with over three decades of deep expertise in the steel structure industry. Leveraging its profound technical foundation, it has successfully expanded into the shipbuilding sector and has now become a professional provider of intelligent T-shaped steel welding equipment for the maritime industry. As a pioneer in domestic intelligent welding equipment, Wuxi Zhouxiang has accumulated extensive technical experience in the steel structure field, offering services across large-scale projects such as bridges, buildings, and energy infrastructure. In 2016, the company strategically entered the shipbuilding industry, focusing on pain points within this sector. Through independent R&D, it developed intelligent T-shaped steel welding equipment, achieving integrated high-precision assembly, automated welding, and intelligent correction, thereby helping shipyards reduce costs and enhance efficiency while driving process innovation in shipbuilding. In the specialized shipbuilding segment, the company addressed welding challenges for small assembly components by leveraging its technical strengths to independently develop an intelligent robotic welding workstation. This workstation innovatively implements a master-slave multi-machine task allocation and collaborative welding mode, significantly improving welding efficiency and accessibility.

荣誉 HONOR 资质 QUALIFICATION

MANUFACTURING 制造 EQUIPMENT 装备



完备的
工业流程装备，
保证了优质高效的
制造能力。

The complete industrial
process equipment ensures
high-quality and efficient
manufacturing capabilities.

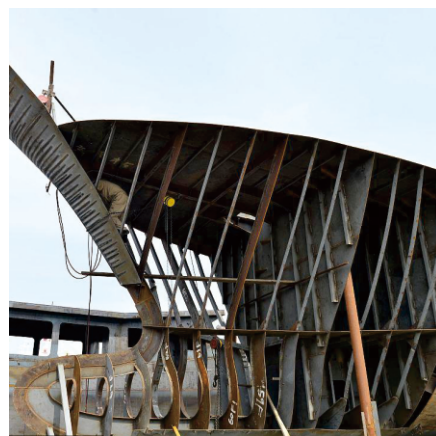
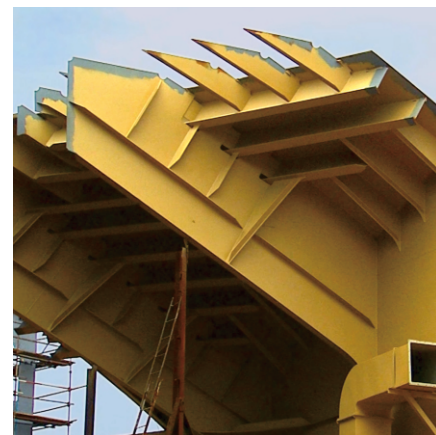
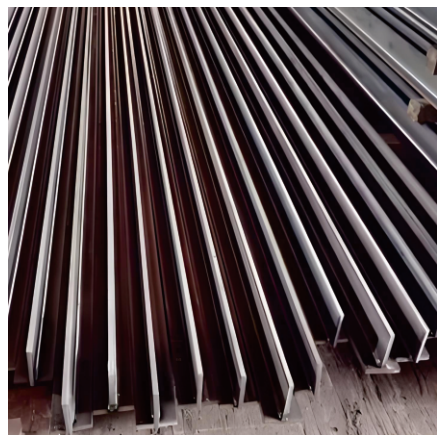


公司拥有高精度、高效能加工中心、数控落地镗、铣、车等大型专业设备及先进的测试中心，贯穿于产品的生产流水线之中，优良先进的生产设备赋能制造精良的产品。

The company has a high-precision, high-efficiency machining center equipped with rail grinding, precision horizontal machining, flexible machining workshop, Heckert horizontal machining and other large-scale professional processing equipment and advanced testing center, which are applied through the product production line. Only fine and advanced production equipment can produce sophisticated products.



产品应用场景 PRODUCT APPLICATION SCENARIO

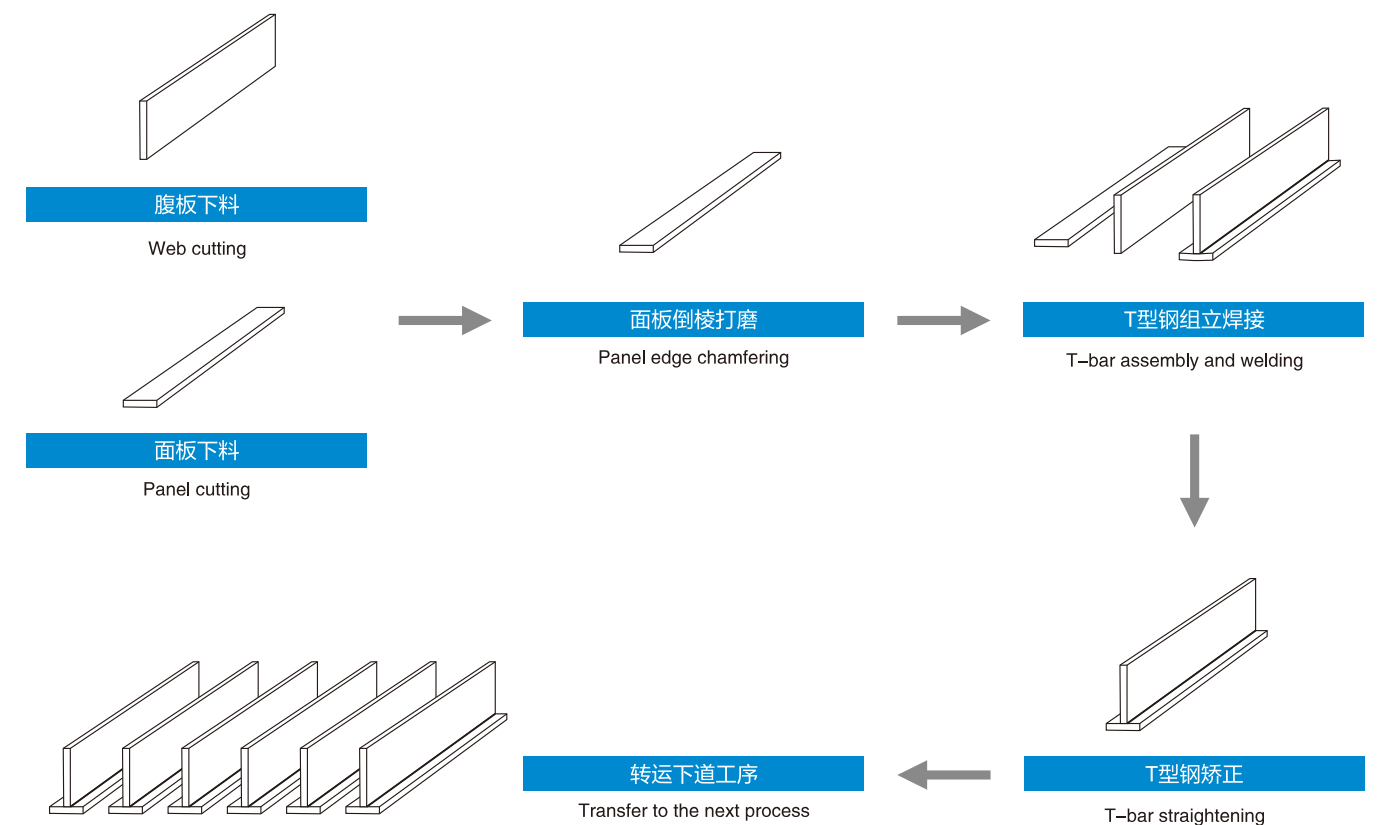


船用T型钢生产线主要由T型材倒棱打磨机、T型材组立焊接机、T排龙门焊、T型材矫正机等主要设备组成。广泛应用于船舶装配流水线，通过工艺整合与智能升级，实现加工效率、空间利用率、质量一致性的同步优化，尤其适用于船舶制造等高精度、大批量面板加工场景。

The ship T-bar production line mainly consists of T-beam edge chamfering and grinding production line, T-bar assembly and welding production line, T-bar Gantry Welding System, and T-bar straightening machine production line. It is widely used in ship assembly lines. Through process integration and intelligent upgrades, it synchronously optimizes processing efficiency, space utilization, and quality consistency, making it particularly suitable for high-precision, large-volume panel processing scenarios such as shipbuilding.

T型钢(焊接成型)常用生产基本工艺流程

BASIC PRODUCTION PROCESS FOR T-BAR (WELDING FORMING)



01

T型材面板倒棱打磨机

T CHAMFERING AND GRINDING MACHINE

► 设备概述 Equipment Overview

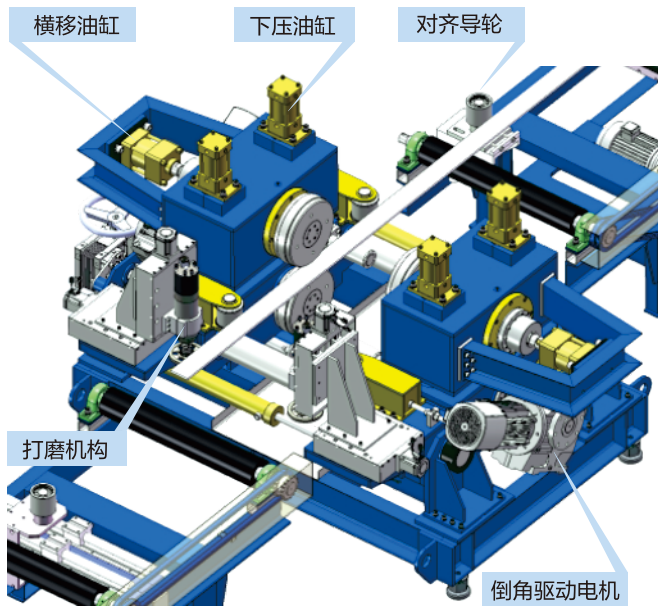
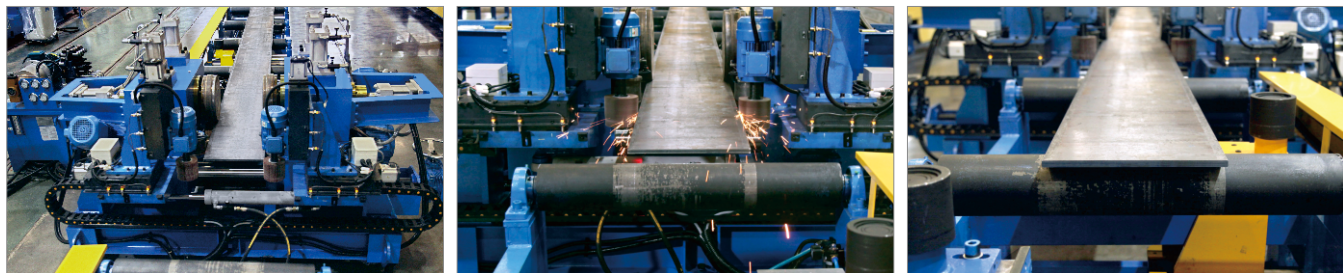
T型材面板倒棱打磨机是专为板材边角处理打造的高效智能设备，集液压成型、精密打磨与智能控制于一体，凭借其创新的设计理念 and 智能化操作体系，成为工业生产中提升板材加工品质与效率的理想选择。该设备由输入动力辊道、倒角主机、打磨装置、输出动力辊道、液压系统、电控系统组成。通过工艺整合与数字化智能升级，实现加工效率、空间利用率、质量一致性的同步优化，尤其适用于船舶制造等高精度、大批量面板加工场景。

The T chamfering and grinding machine is a highly efficient and intelligent device specifically designed for the edge treatment of plates. Integrating hydraulic forming, precise grinding, and intelligent control. Due to its innovative design and intelligent operation system, it has become an ideal choice for improving the plate processing quality and efficiency in industrial production. This machine is composed of input power roller, chamfering main machine, grinding device, output power roller, hydraulic system, and electrical control system. By process integration and digital intelligent upgrading, it achieves the synchronous optimization of processing efficiency, space utilization rate, and quality consistency. It is particularly suitable for high-precision and large-batch panel processing such as ship building.

► 加工流程 Processing Flow

- 1、该设备输入动力辊道精准送料，倒角主机液压成型，打磨装置高效抛光，配合液压与电控系统，实现全流程自动化。
- 2、一键启动，智能操控！核心配置4组高强刀模，通过液压挤压精准成型R角，配合百叶轮同步打磨，表面光滑无痕，彻底告别毛刺。

1. The input power roller of this machine feeds materials precisely. The chamfering main machine forms through hydraulic pressure, and the grinding device polishes efficiently. With the cooperation of the hydraulic and electrical control systems, the whole process is automatic.
2. One-key start, intelligent control. It is equipped with 4 sets of high-strength dies, which can form R-shape corner precisely through hydraulic extrusion, with flap wheels grinding synchronously, finished product is burr-free and smooth.



► 性能特点 Performance Advantages

- 1、连续不间断切削、挤压、打磨：高效智能连续加工，大幅提升产能，减少人工干预，确保生产节拍稳定；
 - 2、刀具位置精准调节：采用多轴联动调节系统，支持刀具位置与角度的实时动态补偿；
 - 3、精度高，质量稳定，倒角表面光洁，满足船用焊接件加工标准；
 - 4、切削打磨一体，节约设备占地面积，提高场地利用率，同时降低物料周转损耗；
 - 5、高效节能、安全可靠、经济耐用：在节能环保、操作安全性及维护成本方面表现优异。
1. Continuous uninterrupted cutting, pressing, and grinding: Efficient and intelligent continuous processing, significantly increasing production capacity, reducing manual intervention, and ensuring stable production rhythm.

► 技术参数 Technical Parameters

面板宽度(B)	Panel width	90~400mm
面板厚度(T2)	Panel thickness	12~30mm
型材长度	Profile length	4000~15000mm

2. Precise tool position adjustment: Utilizes a multi-axis linkage adjustment system, supporting real-time dynamic compensation of tool position and angle.
3. High precision and stable quality, The Chamfered surface is smooth meeting ship welding component processing standards.
4. Integrated cutting and grinding, saving equipment footprint, improving space utilization, and reducing material handling losses.
5. Energy-efficient, safe, reliable, and economical: Excellent performance in energy conservation, operational safety, and maintenance costs.

02

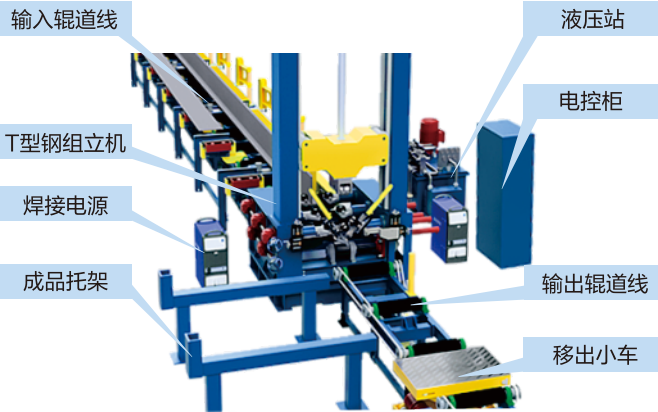
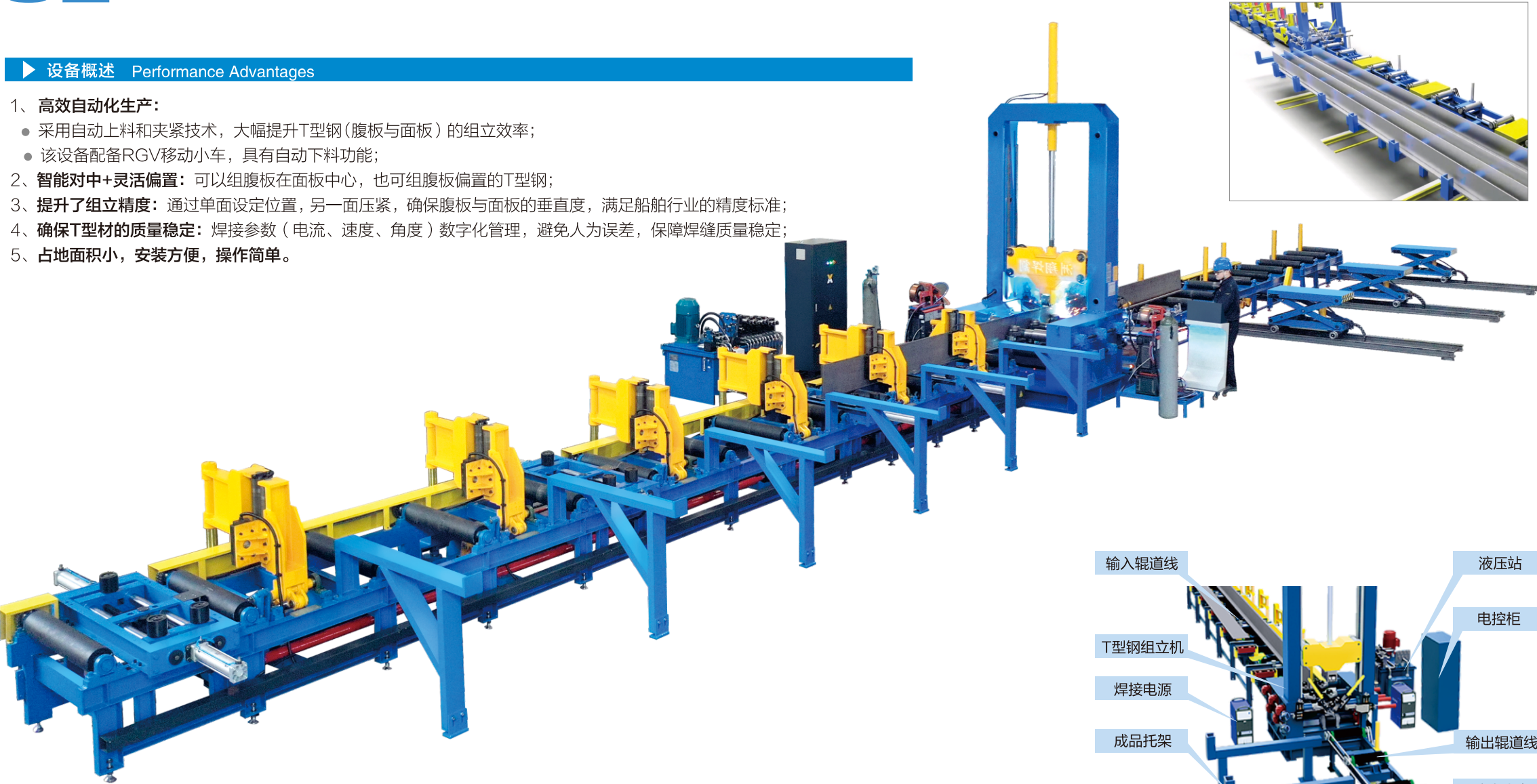
T型材组焊自动一体机

AUTOMATIC T-BAR WELDING INTEGRATED MACHINE

► 设备概述 Performance Advantages

- 1、**高效自动化生产：**
- 采用自动上料和夹紧技术，大幅提升T型钢（腹板与面板）的组立效率；

● 该设备配备RGV移动小车，具有自动下料功能；
- 2、**智能对中+灵活偏置：**可以组腹板在面板中心，也可组腹板偏置的T型钢；
- 3、**提升了组立精度：**通过单面设定位置，另一面压紧，确保腹板与面板的垂直度，满足船舶行业的精度标准；
- 4、**确保T型材的质量稳定：**焊接参数（电流、速度、角度）数字化管理，避免人为误差，保障焊缝质量稳定；
- 5、**占地面积小，安装方便，操作简单。**



1. **High-efficiency automated production:**
- Automatic feeding and clamping technology: enhances the assembly efficiency of T-baRs (web and panel) by automating the feeding and clamping processes.

● GV transfer cart: the equipment is equipped with an RGV (rail-guided vehicle) transfer cart, enabling automatic unloading functionality.
2. **Intelligent centering + flexible offset:** the web can be set in the center of the panel or offset.
3. **Improved assembly accuracy:** Ensures verticality and symmetry errors of the web and through single-side positioning and the other side clamping, meeting shipbuilding industry accuracy standards.
4. **Ensures stable T-beam quality:** Digital management of welding parameters (current, speed, angle) avoids human error and ensures stable weld quality.
5. **Compact footprint, easy installation, and simple operation.**

► 工艺流程

首先将面板置于输入辊道线，由面板对中机构自动对中，接着把腹板放在磁吸自动上料位置自动翻转，使拉杆箱垂直辊转90度立在面板上，然后退出磁吸，由输送辊道把工件送入T型钢组立焊接机。

工件进入T型钢组立焊接机后，端面齐平装置让面板和腹板端面齐平，侧压轮组以油缸为动力压紧腹板和面板，下压轮以油缸为动力使腹板与面板贴合，焊接伸入焊接。焊接完毕，由移出小车将工件移送至托架。

► Process Flow

First, place the panel on the input roller conveyor, which is automatically centered by the panel centering mechanism, and then place the web on the magnetic suction automatic feeding position and automatically flip it, so that the vertical roller of the trolley box rotates 90 degrees and stands on the panel, then exits the magnetic suction, and the conveyor roller conveyor sends the workpiece into the T-bar assembly welding machine.

After the workpiece enters the T-shaped steel assembly welding machine, the end face flushing device makes the end faces of the panel and the web flush, the side pressure wheel group uses the oil cylinder as the power to press the web and the panel, the lower pressure wheel uses the oil cylinder as the power to make the web and the panel fit together, and the welding extends into the welding. After welding, the workpiece is transferred to the bracket by the removal trolley.

► 技术参数 Technical Parameters

腹板高度 Web height (H)	200~1200mm
腹板厚度 Web thickness (T1)	8~25mm
面板宽度 Panel width (B)	90~400mm
面板厚度 Panel thickness (T2)	10~30mm
型材长度 Profile length	3000~15000mm



03

T型材组焊一体机

T-BAR ASSEMBLING AND WELDING MACHINE

► 设备概述

该设备通过先进的自动化和机械化技术，采用精细直线导轨进行自动对中，保证高精度。首先将面板置于输入辊道线，由面板对中机构自动对中。腹板放入面板上，拉杆箱旋转90度，将腹板立在面板中线上，并靠紧由输送辊道把工件送进T型钢组立焊接机。

工件进入T型钢组立焊接机后，端面齐平装置让面板和腹板端面自动齐平，压轮压紧腹板和面板，压轮下压以油缸为动力使腹板与面板贴合，最后开始焊接。

该设备由输入辊道线、T型钢组立机、输出辊道线、液压系统、电控系统和焊接电源组成。



► Equipment Overview

This equipment uses advanced automation and mechanization technology and uses fine linear guides for automatic centering to ensure high precision. First, place the panel on the input roller line and automatically center it by the panel centering mechanism. The web is placed on the panel, the drawbar box rotates 90 degrees, the web is placed on the center line of the panel, and the workpiece is sent into the T-shaped steel assembly welding machine by the conveyor roller.

After the workpiece enters the T-shaped steel

assembly welding machine, the end face flushing device makes the end faces of the panel and the web automatically flush, the pressure wheel presses the web and the panel, and the pressure wheel presses down with the oil cylinder as the power to make the web and the panel fit together, and finally welding begins.

The equipment consists of an input roller conveyor, a T-steel assembly machine, an output roller conveyor, a hydraulic system, an electric control system and a welding power source.

► 性能特点

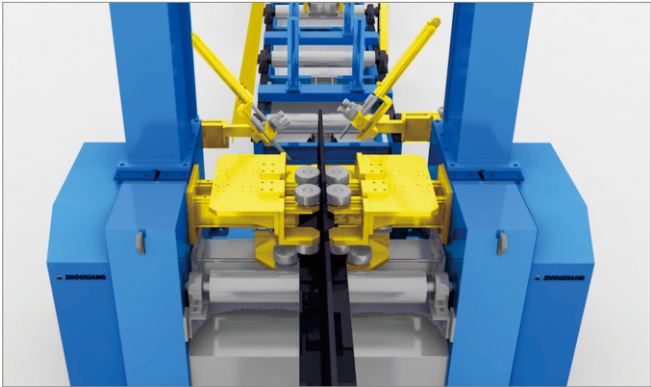
- 1、**高效自动化生产：**采用自动对中、自动定位和夹紧技术，大幅提升T型钢（腹板与面板）的组立效率，减少人工操作，生产速度较传统方式有了极大的提高；
- 2、**自动组立：**大大提升了组立精度；
- 3、**确保T型材的质量稳定：**焊接参数（电流、速度、角度）数字化管理，避免人为误差，保障焊缝质量稳定；
- 4、可直接组立焊接T排，降低投资成本，适合小规模生产；
- 5、占地面积小，安装方便，操作简单，效率高。

► Performance Advantages

1. **High-efficiency automated production:** By adopting automatic centering, positioning, and clamping technologies, the equipment significantly enhances the assembly efficiency of T-bars (web and panel), reduces manual operations, and achieves a substantial improvement in production speed compared to traditional methods.
2. **Automatic Assembly:** The precision of assembly is greatly improved.
3. **Ensures stable T-bar quality:** Digital management of welding parameters (current, speed, angle) avoids human error and ensures stable weld quality.
4. Can directly assemble welding T-rows, reduce investment costs, suitable for small-scale production;
5. Small footprint, easy installation, simple operation, and high efficiency.

► 技术参数 Technical Parameters

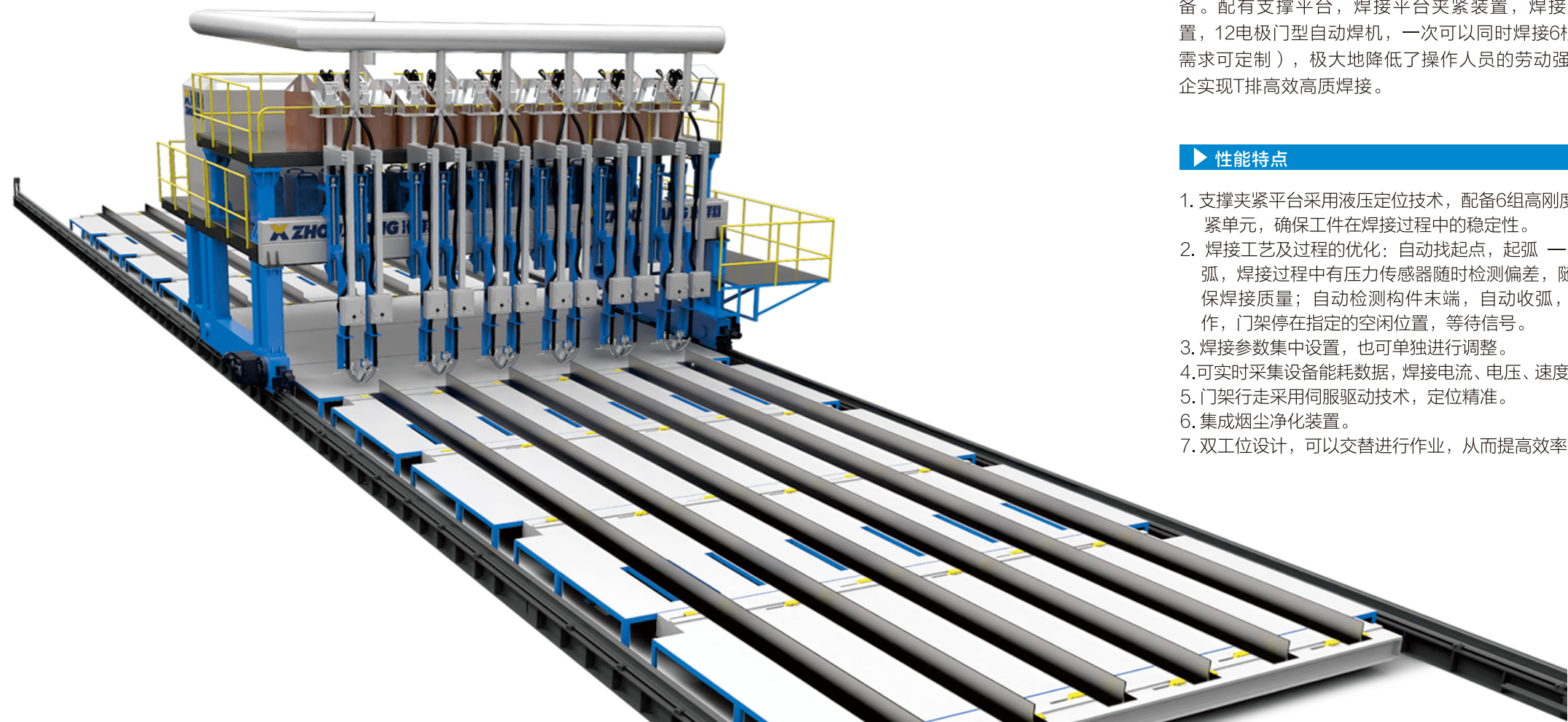
腹板高度 Web height (H)	200~1200mm
腹板厚度 Web thickness (T1)	8~25mm
面板宽度 Panel width (B)	90~400mm
面板厚度 Panel thickness (T2)	10~30mm
型材长度 Profile length	3000~15000mm



04

T排多头龙门焊

T ROW MULTI-HEAD GANTRY WELDING MACHINE



01. 上平台: Upper platform

02. 下平台: Lower platform

03. 门架立柱: Gantry column

04. 门架导轨: Guide rail

05. 缓冲装置: Buffer device

06. 导轮: Guiding wheel

07. 导电装置: Conductive device

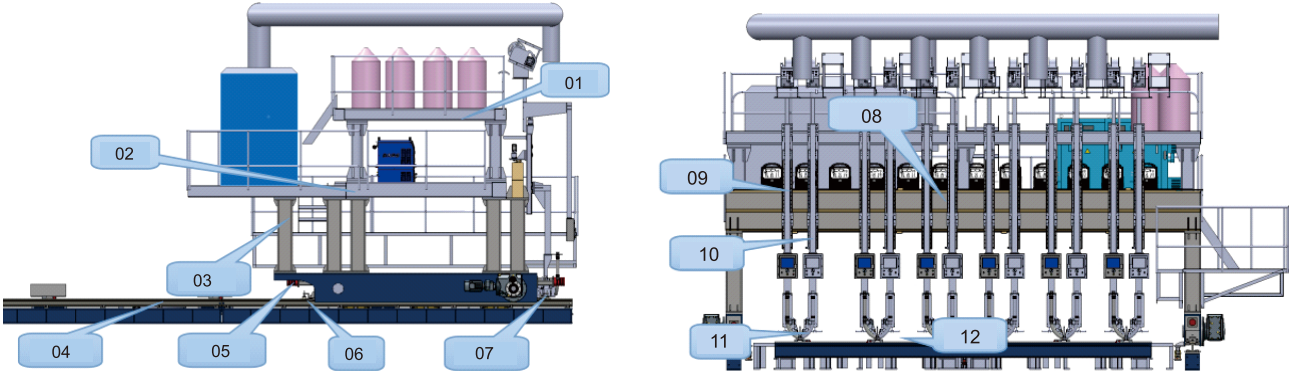
08. 夹紧油缸: Clamping cylinder

09. 夹紧臂: Clamping arm

10. 夹紧棍: Clamping rod

12. 拉杆: Draw bar

13. 传动箱: Transmission box



► 设备概述

T排多头龙门焊是一种专为船舶行业设计开发的专用设备。配有支撑平台，焊接平台夹紧装置，焊接平台翻起装置，12电极门型自动焊机，一次可以同时焊接6根T排（特殊需求可定制），极大地降低了操作人员的劳动强度，助力船企实现T排高效高质焊接。

► 性能特点

1. 支撑夹紧平台采用液压定位技术，配备6组高刚度多点同步夹紧单元，确保工件在焊接过程中的稳定性。
2. 焊接工艺及过程的优化：自动找起点，起弧 — 焊接 — 收弧，焊接过程中有压力传感器随时检测偏差，随时纠偏，确保焊接质量；自动检测构件末端，自动收弧，完成构件制作，门架停在指定的空闲位置，等待信号。
3. 焊接参数集中设置，也可单独进行调整。
4. 可实时采集设备能耗数据，焊接电流、电压、速度参数等。
5. 门架行走采用伺服驱动技术，定位精准。
6. 集成烟尘净化装置。
7. 双工位设计，可以交替进行作业，从而提高效率。

► Equipment Overview

T-row multi-head gantry welding machine is a special equipment designed and developed for the shipbuilding industry. It is equipped with a support platform, a welding platform clamping device, a welding platform flipping device, and a 12-electrode gantry automatic welding machine. It can weld 6 T-rows together (customizable for special needs), which greatly reduces the labor intensity of operators and helps ship companies achieve efficient and high-quality T-row welding.

► Performance Advantages

1. The support clamping platform adopts hydraulic positioning technology and is equipped with 6 sets of high-rigidity multi-point synchronous clamping units to ensure the stability of the workpiece during welding.
2. Optimization of welding technology and process: automatic starting point, arc starting - welding - arc closing, pressure sensor detects deviation at any time during welding, corrects deviation at any time to ensure welding quality; automatically detects the end of the component, automatically closes the arc, completes the component production, and the gantry stops at the specified idle position and waits for the signal.
3. The welding parameters are set centrally and can also be adjusted separately.
4. Equipment energy consumption data, welding current, voltage, speed parameters, etc. can be collected in real time.
5. The gantry travel adopts servo drive technology and accurate positioning.
6. Integrated smoke purification device.
7. The double-station design can perform operations alternately to improve efficiency.

► 技术参数 Technical Parameters

面板宽度	Flange width	90~360mm
面板厚度	Flange thickness	10~30mm
腹板高度	Web height	200~600mm
腹板厚度	Web thickness	8~25mm
工件长度	Workpiece length	6000~18000mm



05

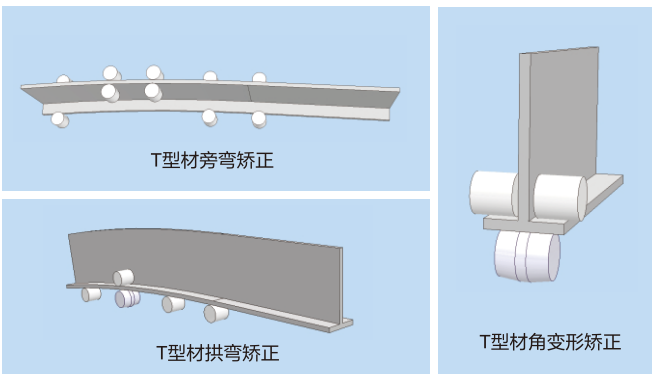
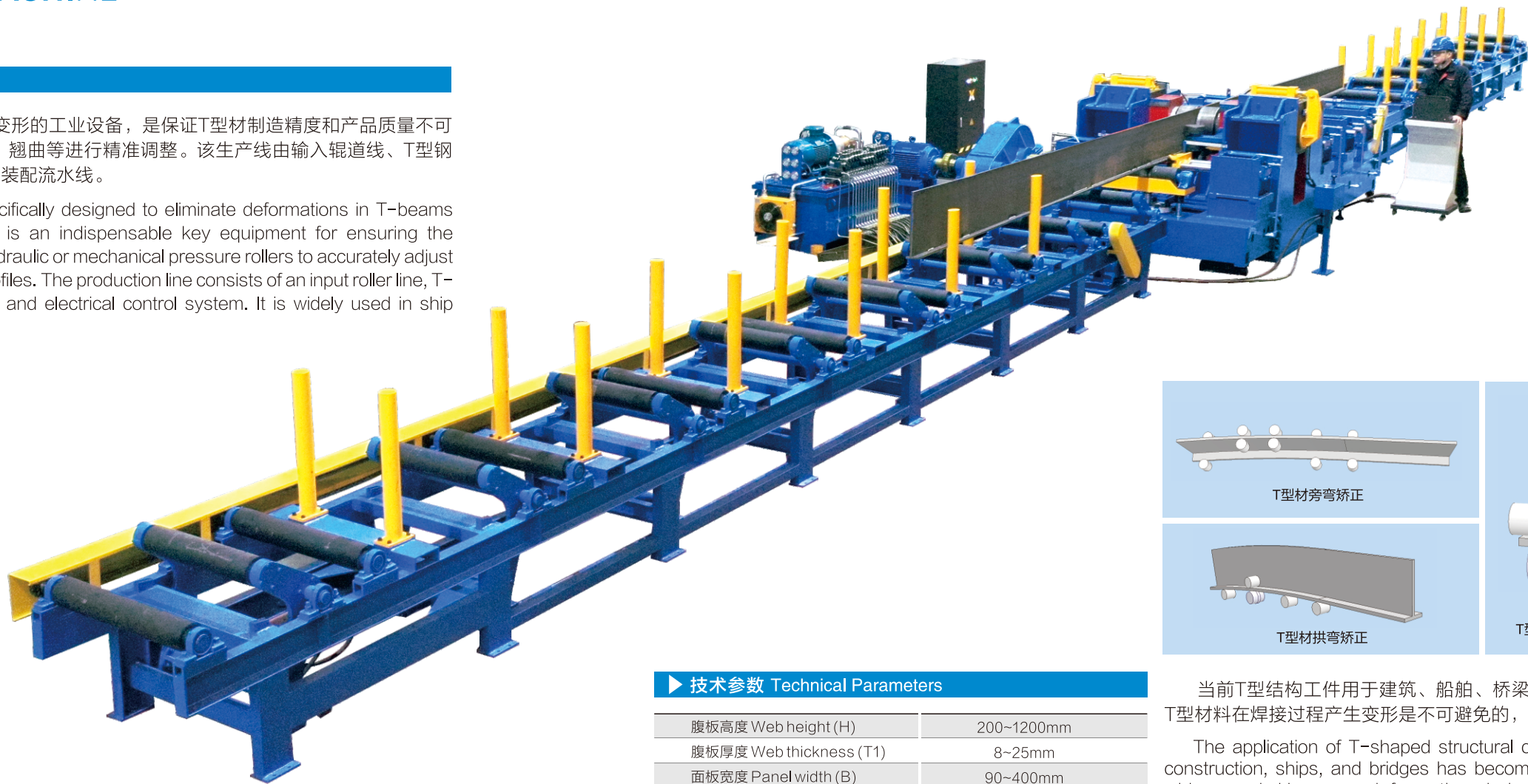
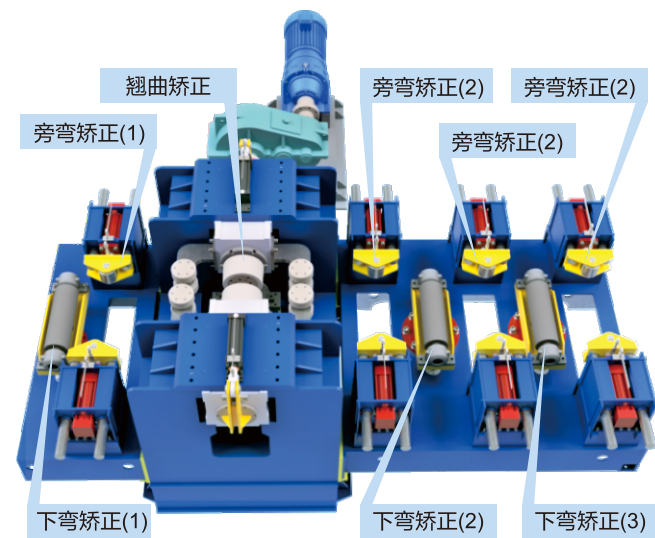
T型材矫正机

T-BAR STRAIGHTENING MACHINE

► 设备概述 Equipment Overview

T型材矫正机是专用于消除桥梁、船舶等制造领域T型材加工变形的工业设备，是保证T型材制造精度和产品质量不可或缺的关键设备。通过液压或机械压力轮对型材的上拱下弯、旁弯、翘曲等进行精准调整。该生产线由输入辊道线、T型钢矫正机、输出辊道线、液压系统、电控系统组成。广泛应用于船舶装配流水线。

The T-bar Straightening Machine is an industrial device specifically designed to eliminate deformations in T-beams during processing in fields such as bridge and shipbuilding. It is an indispensable key equipment for ensuring the manufacturing precision and product quality of T-beams. It uses hydraulic or mechanical pressure rollers to accurately adjust the upward arch, downward bend, side bend, and warping of the profiles. The production line consists of an input roller line, T-beam straightening machine, output roller line, hydraulic system, and electrical control system. It is widely used in ship assembly lines.



► 技术参数 Technical Parameters

腹板高度 Web height (H)	200~1200mm
腹板厚度 Web thickness (T1)	8~25mm
面板宽度 Panel width (B)	90~400mm
面板厚度 Panel thickness (T2)	10~30mm
型材长度 Profile length	6000~18000mm

当前T型结构工件用于建筑、船舶、桥梁越来越广，但T型材料在焊接过程产生变形是不可避免的，如图所示：

The application of T-shaped structural components in construction, ships, and bridges has become increasingly widespread. However, deformation during the welding process of T-shaped materials is inevitable, as illustrated in the diagram.

► 性能特点 Performance Advantages

- 1、自动化程度高：

自动化生产减少人工依赖，同时降低返工率和废品率，降低综合成本；
- 2、矫正精度高：

可同时矫正T型钢的纵向弯曲、侧弯、扭曲等复杂变形，矫正精度达 $\pm 0.5\text{mm/m}$ ；
- 3、大幅提升生产效率：

● 高速矫正：大大缩短了单根T型材的矫正时间，效率较人工矫正提升80%；

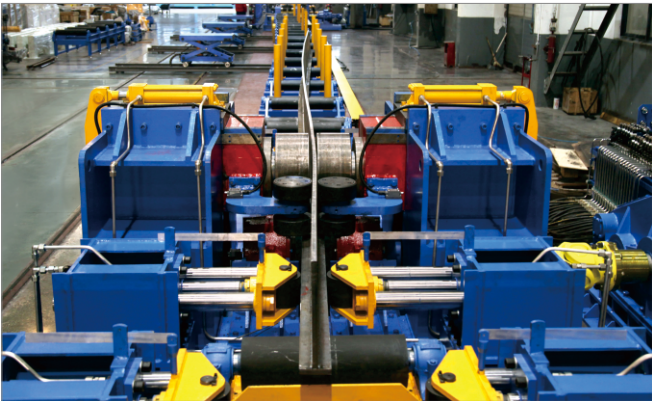
● 批量处理能力：支持连续进料，适合大批量生产需求；
- 4、结构可靠稳定；
- 5、空间小，安装方便，操作简单。
1. High degree of automation:

Automatic production reduces reliance on manual labor, lowers rework and rejection rates, and reduces overall costs.
2. High straightening accuracy:

Can correct complex deformations such as longitudinal bending, side bending, and twisting of T-beams at the same time, with a straightening accuracy of $\pm 0.5\text{mm/m}$.
3. Significantly improves production efficiency:

● High-speed straightening: Greatly reduces the straightening time for a single T-beam, increasing efficiency by 80% compared to manual straightening.

● Batch processing capability: Supports continuous feeding, suitable for large-volume production needs.
4. Reliable and stable structure.
5. Compact footprint, easy installation, and simple operation.



06

纵骨焊接机

LONGITUDINAL KEEL WELDING MACHINE

► 设备概述

本设备主要用于船舶行业纵骨进行焊接，用16台焊接电源可同时对4-8根已装配好的纵骨进行焊接。

► Equipment Overview

This equipment is mainly used for welding longitudinal keels in the shipbuilding industry. 16 welding power sources can weld 4-8 assembled longitudinal keels at the same time.



► 性能特点

1. 通过主门架的纵向移动带动焊接小车移位，可完成不同位置的纵骨焊接。
2. 搭载16台焊接小车，操作简单，坚固抗造，轻量化设计，单手提携无压力，低重心稳定系统，双向智能焊接，小车带有磁力开关。
3. 配备桶装药芯焊丝，曲立半径较小，保证送丝顺畅，且使用过程中不需要经常换丝。
4. 配备烟尘集中回收净化装置。
5. 配备先进的可视化操作系统和稳定可靠的电控系统。

► Performance Advantages

1. The longitudinal movement of the main gantry drives the welding trolley to move, and the longitudinal keel welding at different positions can be completed.
2. Equipped with 16 welding trolleys, simple operation, sturdy and durable, lightweight design, one-handed carrying without pressure, low center of gravity stability system, two-way intelligent welding, and the trolley has a magnetic switch.
3. It's equipped with barreled flux-cored welding wire. The bending radius is small, which ensures smooth wire feeding and doesn't require frequent wire replacement during use.
4. Equipped with a centralized smoke recovery and purification device.
5. Equipped with an advanced visual operating system and a stable and reliable electrical control



► 技术参数 Technical Parameters

面板宽度 Flange width	1000 ~ 8000mm
面板厚度 Flange thickness	5.5 ~ 15mm
腹板高度 Web height	140 ~ 1000mm
腹板厚度 Web thickness	5 ~ 10mm
纵骨长度 Longitudinal keel length	6000 ~ 20000mm
焊接速度 Welding speed	150-1000mm/min
纵骨腹板的间距 Longitudinal keel web distance	500 ~ 1000mm (800mm以内间隔焊接 Interval welding within 800mm)
纵骨数量 Longitudinal keel quantity	最多八根纵骨同时焊接 (Up to eight longitudinal keels can be welded simultaneously)



07

小组立智能焊接机器人生产线

INTELLIGENT WELDING ROBOT ASSEMBLING LINE

设备概述

Equipment Overview

为提升船舶面板大型结构件焊接效率与质量，降低熟练焊工依赖及劳动强度，设计本自动化生产线设备。其融合人工组对灵活性及机器人焊接高效性，旨在构建技术先进、运行稳定、布局合理的现代化智能制造单元。

设备由两大功能区串联而成：工件在人工装配区完成组对点焊后，通过自动化输送系统精准传送至机器人焊接区，由智能机器人完成所有焊缝自动化焊接。

This automated production line is designed to improve the welding efficiency and quality of large ship panels and structural components, while reducing the reliance on skilled welders and labor intensity. It combines the flexibility of manual assemble with the efficiency of robotic welding, aiming to create a modern intelligent manufacturing unit with advanced technology, stable operation, and a rational layout.

The line consists of two major functional areas in series: after the workpieces are spot-welded in the manual assembly area, they are precisely transported to the robot welding area through an automated conveying system, where intelligent robots complete the automated welding of all welds.



技术参数

Technical Parameters

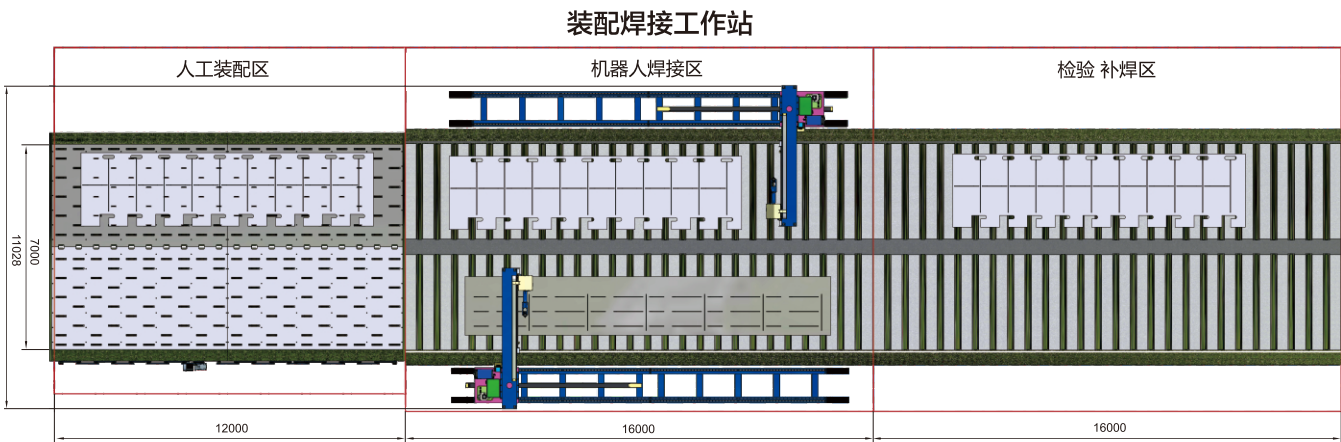
机器人焊接区参数		Robot welding area parameters
工作台面 (Table size)	7m×16m	
输送速度 (Conveyor speed)	15m/min	
功率 (Power)	2×5.5kw	

人工装配区参数		Manual assembly area parameters
工作台面 (Table size)	7m×12m	
输送速度 (Conveying speed)	15m/min	
功率 (Power)	2×5.5kw	
液压站功率 (Hydraulic power)	22kw	
压力 (Pressure)	9Mpa	
流量 (Flow rate)	120L/min	
最大负载 (Maximum load)	3000N/m	

性能特点

Performance Advantages

- 双模式设计：独创升降辊道+平台结构，装配灵活焊接精准，解决大型工件“装配稳、输送快”的矛盾。
 - 智能化联动：全线变频调速，与机器人系统联锁控制，实现生产流程自动化。
 - 高扩展性：预留接口与空间，可便捷新增加热矫正、打磨、检测等工位，升级全自动化线。
 - 投资回报快：机器人焊接提升产量与一致性，减少焊材损耗、返工率及熟练焊工需求，降本增效。
 - 效率提升显著：工件自动流转，减少吊装等待时间，机器人焊接效率远高于人工。
 - 质量稳定可靠：机器人焊接路径与参数一致，焊缝成型美观、质量可控。
 - 降低技能门槛：高技能焊接工作转为自动化作业，降低对操作工的技能要求。
 - 柔性适配性强：输送系统变频调速，适应不同尺寸工件及生产节拍需求。
-
- Dual-Mode Design: Designed lifting roller + table balances the flexibility of manual assembly with the precise robotic welding, resolving the conflict of stable assembly & fast conveying for large workpieces.
 - Intelligent Interconnection: Variable frequency speed regulation for entire line, interlocked with the robotic system, automates the production process.
 - High Scalability: Reserved interfaces and space allow for addition of workstations such as heat correction, grinding, inspection and etc, enabling the line to be upgraded to a fully automated system.
 - Rapid Return on Investment: Robotic welding improves production output and consistency, reduces welding material loss, rework rates, and the need for skilled welders, lowering labor costs and shortening the payback period.
 - Significant Efficiency Improvement: Automated workpiece flow reduces waiting time for lifting, making robotic welding far more efficient than manual welding.
 - Stable and Reliable Quality: The robot's welding path and parameters are consistent, resulting in nice and controlled welds quality.
 - Lower Skill Barrier: Automating welding reduces the requirements for highly skilled operators.
 - Strong flexibility and adaptability: The conveying system adopts variable frequency speed regulation to adapt to workpieces of different sizes and production rhythm.



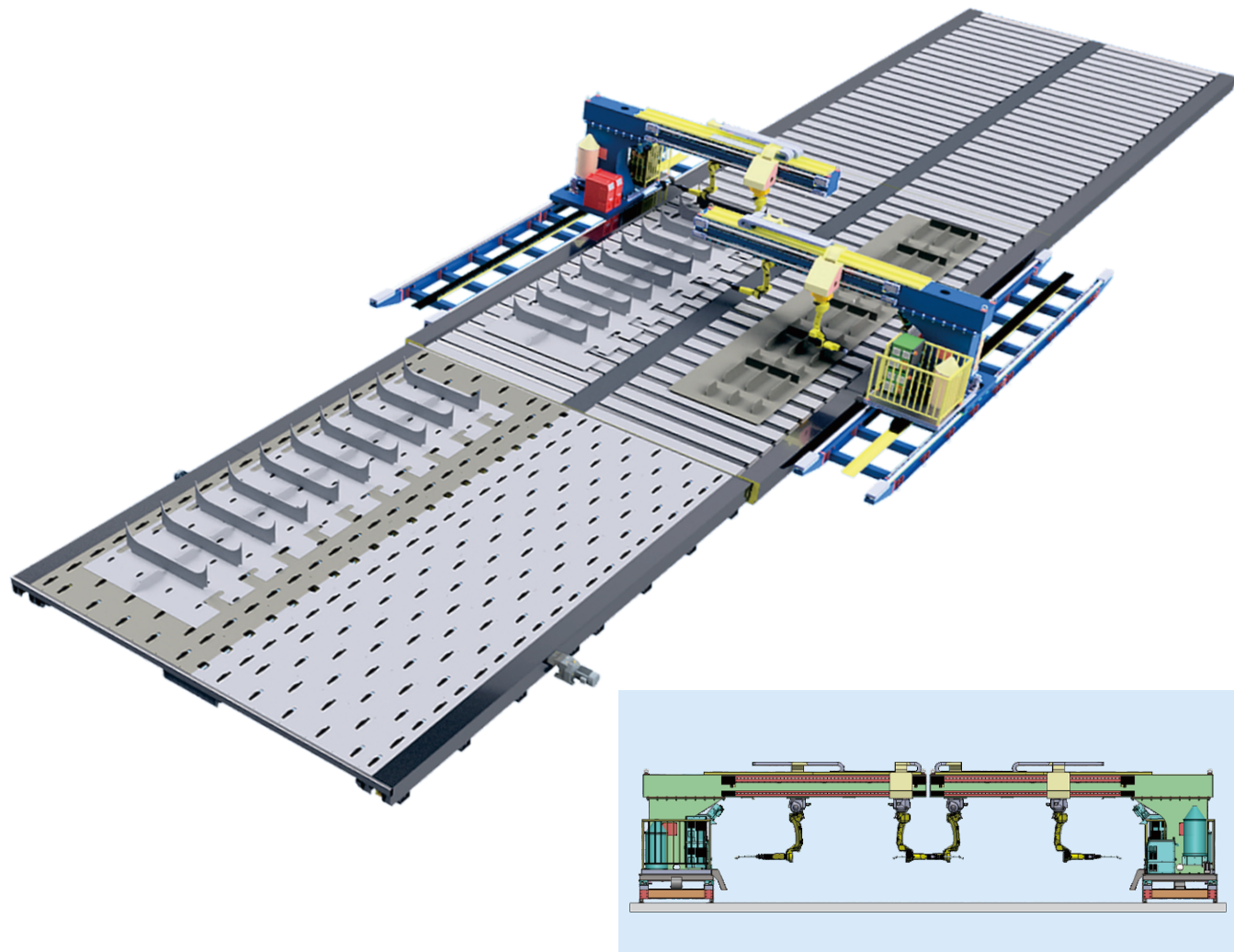
船舶小组立智能焊接工作站

在船舶行业，尤其是针对大型分段、小组立及大幅面板件的焊接任务中，工件尺寸大、焊缝复杂且空间分布广，传统的机器人单机工作站难以满足高效、高质的生产需求。我公司全自主研发的一主多机的机器人焊接工作站实现了由主站统一规划任务，从站自主执行，多机协同焊接，特别适用于船舶行业大幅面板件的焊接，有效解决了传统单站焊达率低、焊接效率低等问题。

主站导入工件3D模型后，自动完成路径规划与任务分配，并将指令下发至四台从站设备上。各从站根据主站分配的任务，基于激光寻位精准定位焊缝，自动匹配焊接工艺，同时智能计算避障路径，优化任务负载，确保高效协同。

该系统核心模块全自主开发，多模块协同，集成离线编程、机器人控制、视觉模块、焊接工艺，有利于打破不同模块之间的数据隔阂，实现软件操作一体化，显著提升焊接效率与可达率。

08 悬臂式双机器人智能工作站 CANTILEVER DUAL-ROBOT INTELLIGENT WORKSTATION



SHIPBUILDING INTELLIGENT WELDING WORKSTATION

In the shipbuilding industry, especially for welding tasks involving large sections, small groups, and large panel components, the workpiece size is large, the weld seam is complex, and the spatial distribution is wide. Traditional robot single machine workstations are difficult to meet the requirements of efficient and high-quality production. Our company's independently developed one master multi machine robot welding workstation has achieved unified task planning by the main station, autonomous execution by the slave station, and multi machine collaborative welding. It is particularly suitable for welding large panel components in the shipbuilding industry, effectively solving the problems of low welding yield and efficiency in traditional single station welding.

After importing the 3D model, the master station automatically completes path planning and task allocation, then issues instructions to the 4 subordinate. Based on the tasks assigned by the master, each subordinate uses laser positioning to precisely locate weld seams and automatically adapt the welding process. It also intelligently calculates obstacle avoidance paths, optimizes task load, and ensures efficient collaboration.

The system's core modules are fully independently developed, enabling multi-module collaboration, integrating offline programming, robotic control, vision modules, and welding processes. This helps break down data barriers between modules, achieves unified software operations, and significantly improves welding efficiency and accessibility.

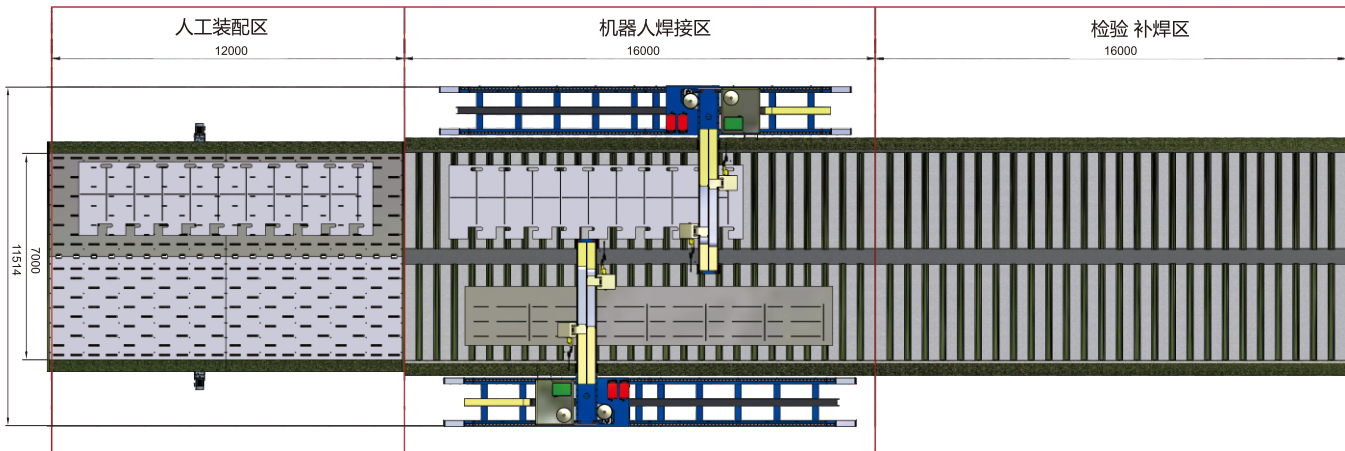
► 设备概述 Equipment Overview

该焊接系统由两台8轴悬臂式机器人组成，2台机器人本体分别布局于悬臂式主横梁两侧。每台悬臂机器人可在两侧超长地轨上运行（地轨长度可定制）。此布局可让4台机器人同时对大幅面船板焊接，有效提升焊接效率与可达率。

The welding system consists of two 8-axis cantilever-type robots, with the two robot bodies arranged on both sides of the cantilever main beam. Each cantilever robot can travel along extra-long floor rails on both sides (rail length customizable). This layout allows four robots to weld large ship panels simultaneously, significantly improving welding efficiency and accessibility.

► 性能特点 Performance Advantages

- 1、集成柏楚免示教焊接系统，无需人工示教，自动化程度高；
 - 2、支持模型驱动与视觉交互两种模式，操作简便，易于学习；
 - 3、针对一种产品只需编程一次，可重复使用，生产效率高，生产节奏可控，产能稳定；产品质量一致，品质可靠性提升，降低人为影响，减少生产成本；
 - 4、设备布局为两侧各设1台悬臂式主机，每台主机搭载2台机器人。
1. Integrated with the Bochu teach-free welding system, it eliminates the need for manual instruction and offers a high degree of automation.
 2. Supports both model-driven and visually interactive modes, making operation simple and easy to learn.
 3. Programming a product once is sufficient and can be repeated, resulting in high production efficiency, a controllable production rhythm, and stable production capacity. This ensures consistent product quality and improved reliability, reduces human interaction, and reduces production costs.
 4. The equipment layout features two cantilevered mainframes, each equipped with 2 robots.



09

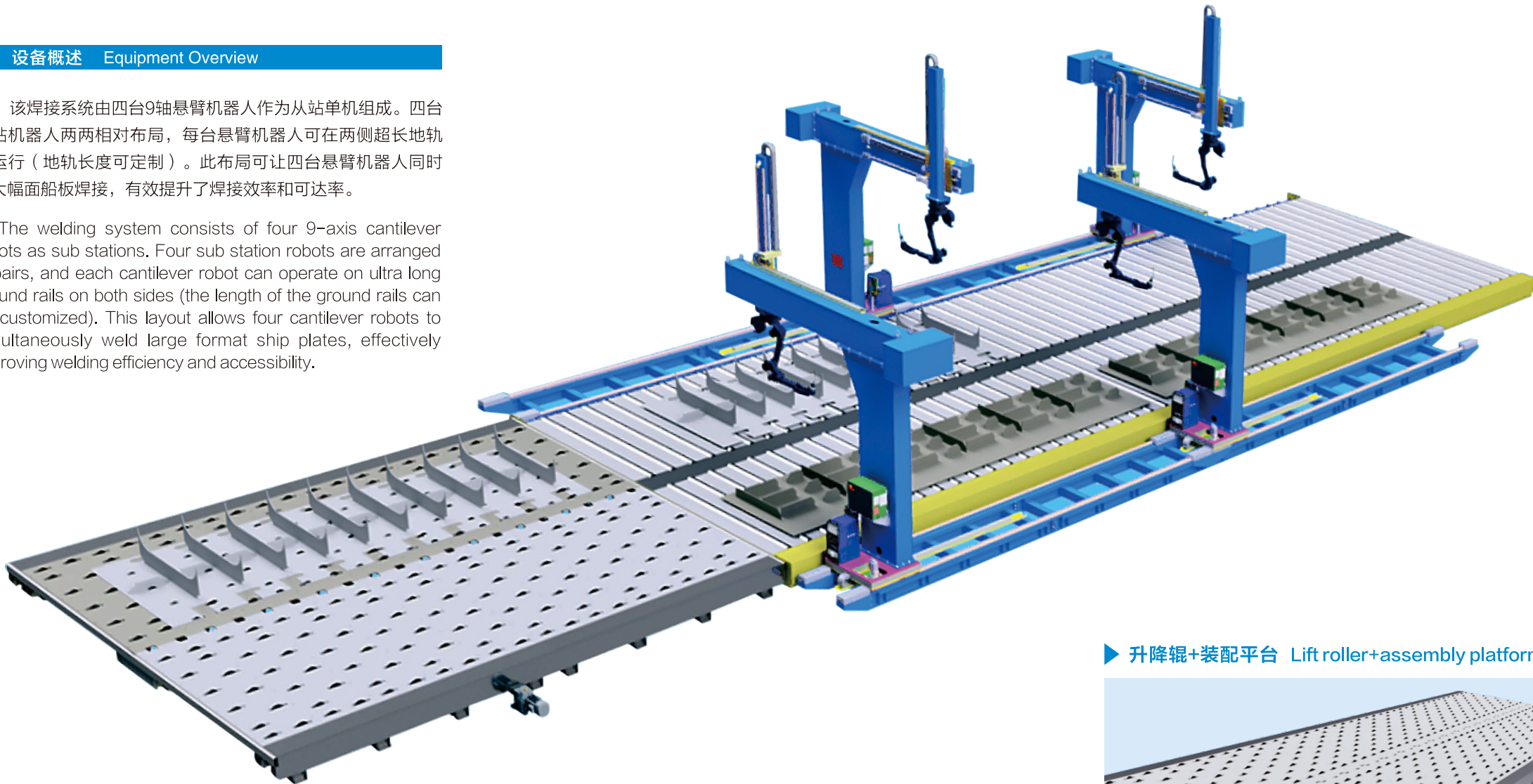
悬臂式机器人(一主四从)智能工作站

CANTILEVER ROBOT (ONE MASTER AND FOUR SUB ROBOTS) INTELLIGENT WORKSTATION

► 设备概述 Equipment Overview

该焊接系统由四台9轴悬臂机器人作为从站单机组成。四台从站机器人两两相对布局，每台悬臂机器人可在两侧超长地轨上运行（地轨长度可定制）。此布局可让四台悬臂机器人同时对大幅面船板焊接，有效提升了焊接效率和可达率。

The welding system consists of four 9-axis cantilever robots as sub stations. Four sub station robots are arranged in pairs, and each cantilever robot can operate on ultra long ground rails on both sides (the length of the ground rails can be customized). This layout allows four cantilever robots to simultaneously weld large format ship plates, effectively improving welding efficiency and accessibility.



► 性能特点 Performance Advantages

- 1、集成柏楚免示教焊接系统，无需人工示教，自动化程度高；

2、支持模型驱动与视觉交互两种模式，操作简便，易于学习；

3、针对一种产品只需编程一次，可重复使用，生产效率高，生产节奏可控，产能稳定；产品质量一致，品质可靠性提升，降低人为影响，减少生产成本；

4、该设备布局为两侧各两台机器人共轨运行，适应大型工件的焊接。
1. Integrated with the Bochu teach-free welding system, no need manual instruction and offering a high degree of automation.

2. Supporting both model-driven and visually interactive modes, the system is easy to operate and learn.

3. Programming a product once is sufficient and can be repeated, resulting in high production efficiency, a controllable production pace, and stable production capacity. This ensures consistent product quality and improved reliability, minimizing human interaction and reducing production costs.

4. The system features two robots on each side operating on a common track, making it suitable for welding large workpieces.

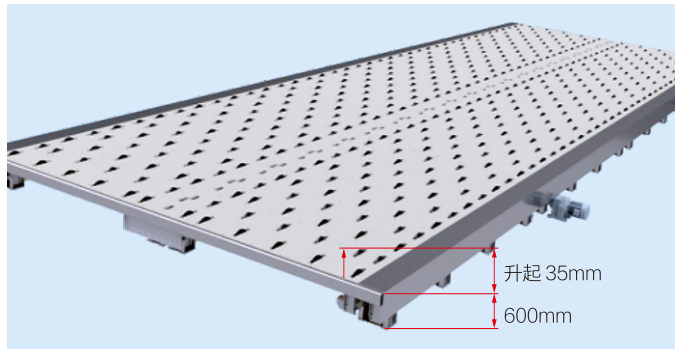
► 输送辊道线的优势亮点

采用独创双模式设计，升降辊道与平台结合，化解大型工件装配与输送难题；智能化程度高，全线变频调速且与机器人系统联锁；扩展性强，预留接口和空间，方便增加加热矫正、打磨、检测等工位；投资回报率高，机器人焊接提产保质，降低损耗与返工率；实现工件自动高效流转，提升效率；还支持柔性生产，变频调速适应不同工件尺寸与生产节拍。

► Advantages of the Conveyor Roller Line

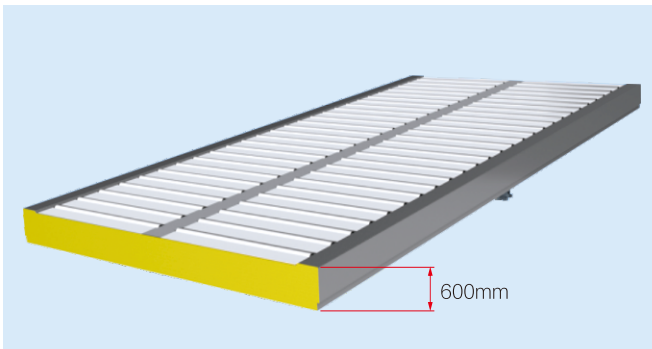
It adopts an innovative dual-mode design that combines a lifting roller conveyor with an assembly platform, solving the challenges of handling and conveying large workpieces. Featuring a high level of automation, the entire line is equipped with variable frequency speed control and is interlocked with the robotic welding system. It offers excellent scalability, with reserved interfaces and space for adding stations such as heating correction, grinding, and inspection. The investment return is high—robotic welding ensures increased productivity and consistent quality while reducing losses and rework rates. The system enables automatic workpiece transfer, minimizing idle time and improving efficiency. It also supports flexible production, with variable frequency control adapting to different workpiece sizes and production rhythms.

► 升降辊+装配平台 Lift roller+assembly platform



技术参数 Technical Parameters		
工作台面	Workbench	7m×30.5m
输送速度	Conveyor speed	0~15m/min
功率	Power	6×5.5kw
液压站功率	Hydraulic station power	55kw 压力(pressure): 9Mpa 流量(flow rate): 120L/min
最大负载	Maximum load	3000N/m²

► 输送辊 Conveyor roller



技术参数 Technical Parameters		
工作台面	Workbench	7m×48m
输送速度	Conveyor speed	0~15m/min
功率	Power	6×5.5kw
最大负载	Maximum load	3000N/m²

10 龙门式机器人（四机）智能焊接工作站

GANTRY (4 ROBOTS) INTELLIGENT WELDING WORKSTATION

► 设备概述

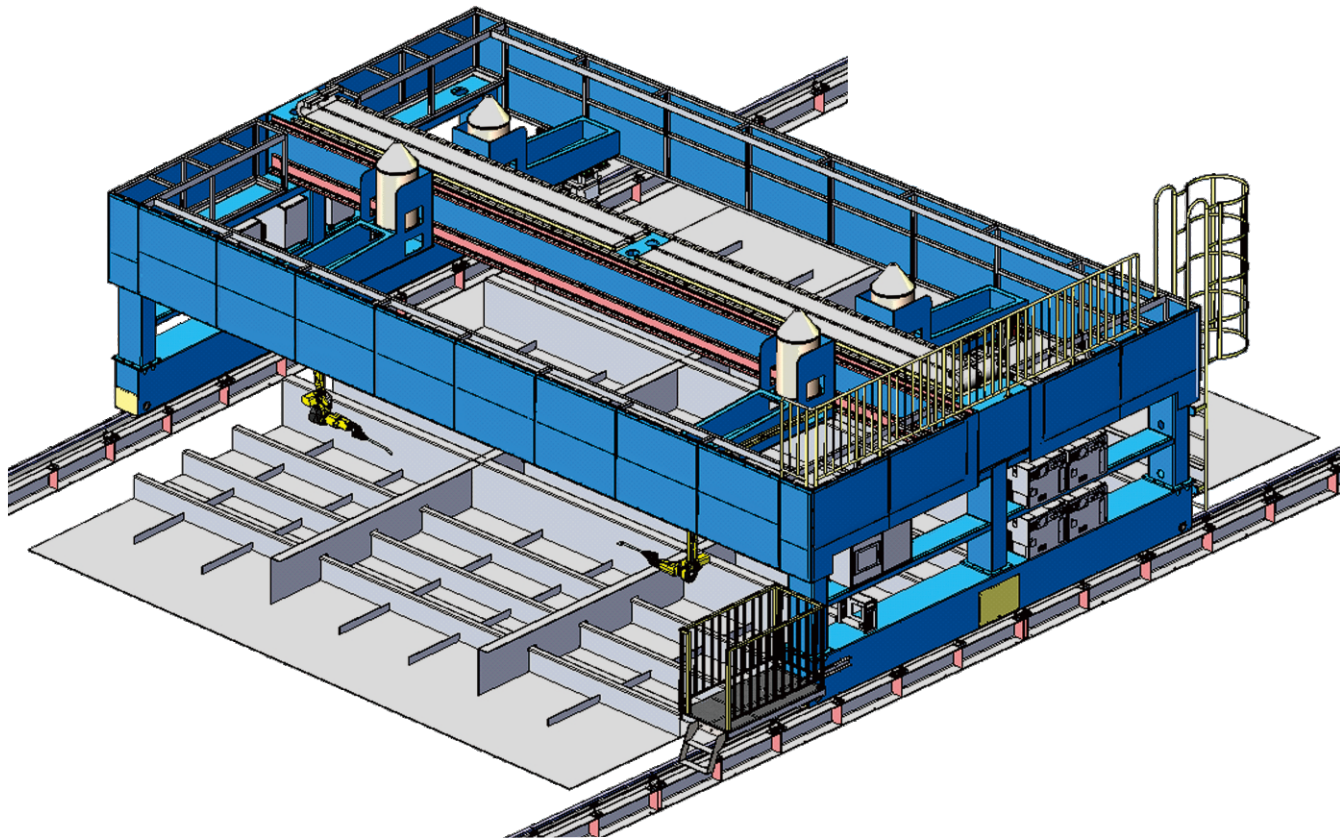
该设备通过多机（4台机器人）联动、自动路径规划及避障，提高焊接效率；同时提升产品质量稳定性与一致性，减少人工依赖，节省大批人工，降低劳动力成本，同时提升了企业的市场竞争力。

该设备主要适用于造船行业大幅面结构件的柔性化焊接，适应性强，可加工多样化焊接工件，是船舶行业实现智能化升级的关键装备。

► Equipment Overview

This machine improves welding efficiency through multi robots (4 arc welding robots) linkage, automatic path planning, and obstacle avoidance; At the same time, it improves the stability and consistency of product quality, reduces labor dependence, saves a large amount of labor, reduces labor costs, and enhances the market competitiveness of the enterprise.

This machine is mainly suitable for flexible welding of large format structural components in the shipbuilding industry, with strong adaptability and the ability to process diverse welding workpieces. It is a key equipment for achieving intelligent upgrading in the shipbuilding industry.

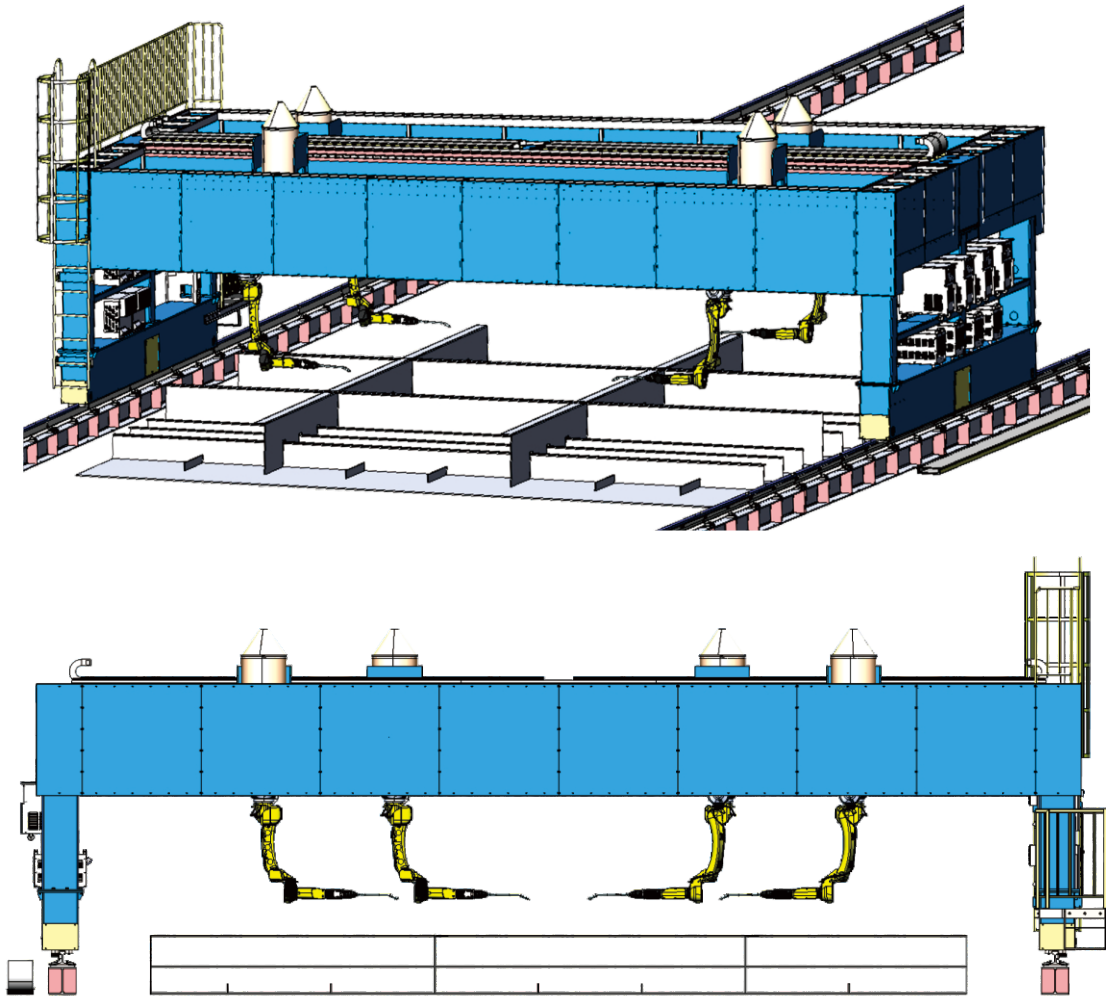


► 性能特点

- ◎ **高精度三维视觉建模：**该设备上装有多个大线扫相机，从不同维度拍照扫描获取工件的点云成像，采用逆向建模技术，生成工件三维模型。
- ◎ **全自动路径规划：**基于三维模型智能识别焊缝，自动生成最优焊接路径并精准匹配工艺参数。
- ◎ **主从站协同作业：**主站智能规划焊接任务，从站自主执行任务；合理分配多机任务及规划避障。

► Performance Advantages

- ◎ **High precision 3D visual modeling:** The machine is equipped with multiple large line scanning cameras, which capture point cloud images of the workpiece from different dimensions. Reverse modeling technology is used to generate a three-dimensional model of the workpiece.
- ◎ **Fully automatic path planning:** Intelligent recognition of welds based on 3D models, automatic generation of optimal welding paths, and precise matching of process parameters.
- ◎ **Collaborative operation between master and slave stations:** The main station intelligently plans welding tasks, while the sub stations autonomously execute tasks; Reasonably allocate multi machine tasks and plan obstacle avoidance.



11

悬臂式智能焊接机器人（8轴）

CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (8 AXES)

▶ 设备概述

悬臂式机器人智能焊接工作站搭配柏楚智能焊接系统、大线扫立体相机，新增了点云重建、大线扫初定位等专项功能，可选择模型驱动加工(直接导入Tekla、SOLIDWORKS或UG的三维模型文件)和无图纸加工(通过工件扫描生成点云数据，逆向重建自动生成模型)两套方案直接匹配焊接工艺参数，自动识别焊缝精确位置并生成最优化的焊接工艺进行焊接，不仅提升了焊接的精度和速度，还极大地增强了加工的灵活性和适应性。机器人配套自动清枪装置。轨道长度可根据用户工件长度确定，轨道带有自动润滑装置，确保运行灵活。

▶ Equipment Overview

The cantilever robot intelligent welding workstation is equipped with the Bochu intelligent welding system and a large-line scanning stereo camera. It has added special functions such as point cloud reconstruction and large-line scanning initial positioning. It can choose model-driven processing (directly importing 3D model files of Tekla, SOLIDWORKS or UG) and drawing-free processing (generating point cloud data through workpiece scanning, and automatically generating models through reverse reconstruction). Two sets of solutions directly match the welding process parameters, automatically identify the precise position of the weld, and generate the most optimized welding process for welding, which not only improves the welding accuracy and speed, but also greatly enhances the flexibility and adaptability of processing. The robot is equipped with an automatic gun cleaning device. The track length can be determined according to the user's workpiece length, and the track is equipped with an automatic lubrication device to ensure flexible operation.

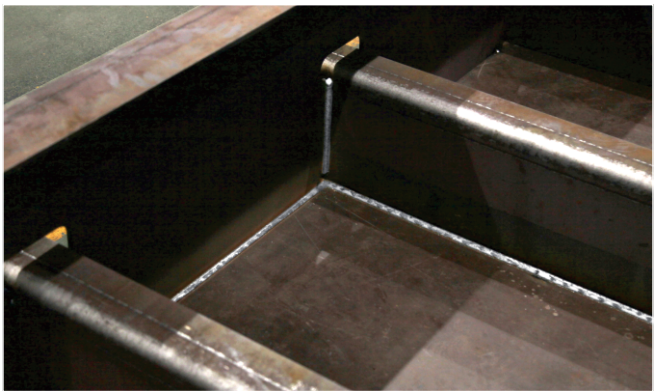


▶ 设备配置 Performance Advantages

- ① 机器人: MR12-2010
Robot: MR12-2010
- ② 焊接电源: 奥太电源 / 麦格米特电源
Welder: Aotai / Megmeet
- ③ 焊枪: 特玛玛水冷加长焊枪
Welding gun: TRM water-cooled extended welding gun
- ④ 控制系统: 柏楚免示教焊接系统
Control system: Friendless teaching-free welding system
- ⑤ 视觉系统: 柏楚大视距寻缝器
Vision system: Friendless large viewing distance seam finder
- ⑥ 导轨: 12米导轨 (长度可定制)
Rail: 12m (length can be customized)

▶ 技术参数 Technical Parameters

适用场景 Application scenario	适用于型钢二次加工 (secondary processing for steel structure)
设备规格 Machine spec	ZX-XRYSW100 (8轴 axes)
总功率 Total power	机器人13KVA+焊机31KVA (8轴) Robot 13KVA + welder 31KVA (8 axes)
最大工件宽度 Maximum workpiece width	3.3 m (轨长12米, 可定制 rail length 12m, also can customize)
焊接平均效率 Average welding efficiency	0.3-0.5m/min (焊接工艺不同, 速度不同 different welding process, different speed)



12 悬臂式智能焊接机器人（9轴）

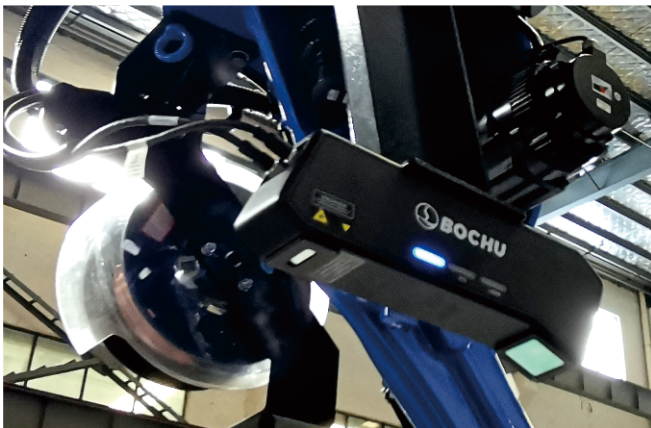
CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (9 AXES)

▶ 设备概述

悬臂式机器人智能焊接工作站搭配柏楚智能焊接系统、大线扫立体相机，新增了点云重建、大线扫初定位等专项功能，可选择模型驱动加工(直接导入Tekla、SOLIDWORKS或UG的三维模型文件)和无图纸加工(通过工件扫描生成点云数据，逆向重建自动生成模型)两套方案直接匹配焊接工艺参数，自动识别焊缝精确位置并生成最优化的焊接工艺进行焊接，不仅提升了焊接的精度和速度，还极大地增强了加工的灵活性和适应性。机器人配套自动清枪装置。轨道长度可根据用户工件长度确定，轨道带有自动润滑装置，确保运行灵活。

▶ Equipment Overview

The cantilever robot intelligent welding workstation is equipped with the Bochu intelligent welding system and a large-line scanning stereo camera. It has added special functions such as point cloud reconstruction and large-line scanning initial positioning. It can choose model-driven processing (directly importing 3D model files of Tekla, SOLIDWORKS or UG) and drawing-free processing (generating point cloud data through workpiece scanning, and automatically generating models through reverse reconstruction). Two sets of solutions directly match the welding process parameters, automatically identify the precise position of the weld, and generate the most optimized welding process for welding, which not only improves the welding accuracy and speed, but also greatly enhances the flexibility and adaptability of processing. The robot is equipped with an automatic gun cleaning device. The track length can be determined according to the user's workpiece length, and the track is equipped with an automatic lubrication device to ensure flexible operation.



▶ 参数性能

- ◎ 适用场景：适用于型钢二次加工
- ◎ 设备规格：ZX-XRYSW150
- ◎ 总功率：机器人15KVA+焊机31KVA
- ◎ 适用工件范围：2.3×1.5 m（12m导轨，可定制）
- ◎ 焊接平均效率：0.3-0.5m/min（工艺不同，速度不同）

▶ 设备配置

- ① 机器人：MR10W-1440-D
- ② 焊接电源：奥太电源 / 麦格米特电源
- ③ 焊枪：特尔玛水冷加长焊枪
- ④ 控制系统：柏楚免示教焊接系统
- ⑤ 视觉系统：柏楚大视距寻缝器
- ⑥ 导轨：12米导轨（长度可定制）

▶ Parameter performance

- ◎ Application scenario: secondary processing for steel structure
- ◎ Machine spec: ZX-XRYSW150
- ◎ Total power: Robot 15KVA + welder 31KVA
- ◎ Applicable workpiece scope: 2.3 × 1.5 m (rail length 12m, also can customize)
- ◎ Average welding efficiency: 0.3-0.5m/min(different welding process, different speed)

Performance advantages

- ① Robot: MR10W-1440-D
- ② Welder: Aotai / Megmeet
- ③ Welding gun: TRM water-cooled extended welding gun
- ④ Control system: Friendless teaching-free welding system
- ⑤ Vision system: Friendless large viewing distance seam finder
- ⑥ Rail: 12m (length can be customized)

13

协作焊接机器人
THE APPLICATION OF COLLABORATIVE WELDING ROBOTS
IN THE SHIPBUILDING FIELD



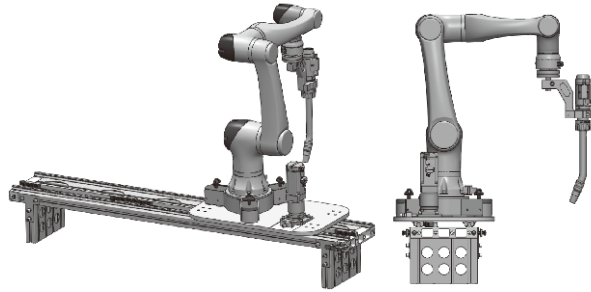
► 性能特点 Performance Advantages

- 1、洲翔智能协作焊接机器人，专门为船舶制造行业的焊接场景进行了深度优化。
- 2、它采用轻量化结构设计，丝滑的滚轮，赋予其在狭小作业空间中自如穿行的能力。
- 3、轻盈的机身，让单人可轻松搬运，磁吸款底座，使固定更加便捷。
- 4、抛却复杂编程，仅需轻松拖拽示教，即可一键启动智能焊接，实现高效的人机协作。
- 5、搭配电弧跟踪功能，在焊接过程中实时纠偏，保证高精高效的焊接，树立船舶智能制造领域技术标杆。

1. The Zhouxiang intelligent collaborative robot, specifically optimized for welding scenarios in the shipbuilding industry.
2. It features a lightweight structural design and smooth-rolling wheels, enabling it to move freely in confined working spaces.
3. Its lightweight body allows for easy single-person handling, while the magnetic base makes installation more convenient.
4. Free from complex programming, it only requires simple drag-and-drop teaching to activate intelligent welding with a single click, achieving efficient human-machine collaboration.
5. Equipped with arc tracking functionality, it can correct deviations in real time during the welding process, ensuring high-precision and high-efficiency welding, setting a new benchmark in the field of intelligent shipbuilding.

► 协作焊接机器人可配套地轨使用，以获得更大的焊接范围

► Collaborative welding robot can be used in conjunction with ground rail to achieve a larger welding range.



► 技术参数 Technical Parameters

有效负载 (Payload)	5kg(最大:7kg)	
工作半径 (Reach)	922mm	
自由度 (Degrees of freedom)	6个旋转关节	
重复定位精度 (Repeatability)	±0.02mm	
轴移动 (Axis movement)	工作范围	最大速度
基座 (Base)	+175°	+180° / S
肩部 (Shoulder)	+85° / -265°	+180° / S
肘部 (Elbow)	+160°	+180° / S
腕部1 (Wrist 1)	+85° / -265°	+180° / S
腕部2 (Wrist 2)	+175°	+180° / S
腕部3 (Wrist 3)	+175°	+180° / S
典型TCP速度 (Typical TCP speed)	1m/s	
防护等级 (IP classification)	IP54(可选IP65)	
安装方向 (Robot mounting)	任何方向	
整机重量 (Weight)	≈22kg	
功率 (power)	260~310W	



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ZX-6A 自动焊接小车

AUTOMATIC WELDING TROLLEY

► 设备概述 Equipment Overview

洲翔多功能角焊小车功能强大，用途广泛，能够使不熟练的操作人员以简易的方式顺利进行角焊(沿底部钢板运行)。

Zhouxiang multifunctional fillet welding trolley is powerful and versatile, enabling unskilled operators to smoothly perform fillet welding (running along the bottom steel plate) in a simple way.



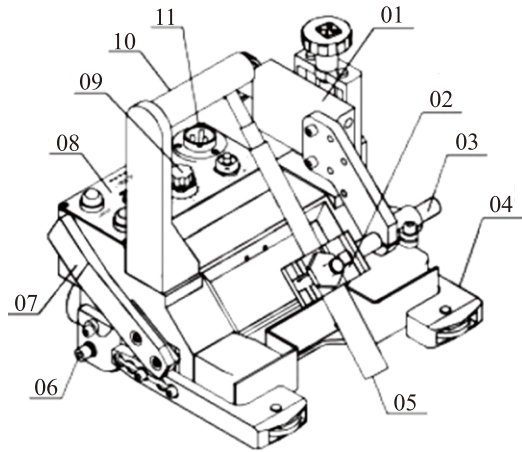
► 性能特点

- 1、一体化机身，坚固耐用，轻巧便携。
- 2、低重心设计，小车具有16KG拖力，能够稳定爬行。设有磁控手柄，移动手柄时可以减少部分磁力，容易安装。
- 3、可以左右两方向焊接，小车两端均安装有感应开关，焊接结束后小车可以自动停止。
- 4、具有收弧功能，提高收弧处的焊缝质量。

► Performance Advantages

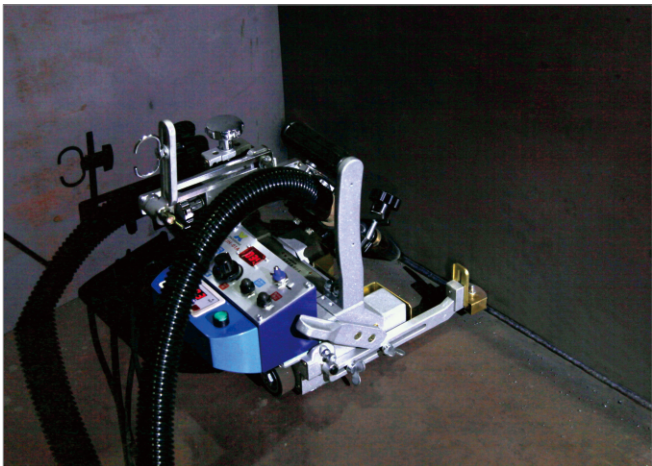
- 1. Integrated body, durable, lightweight and portable.
- 2. Low center of gravity design, the trolley has a 16KG drag force and can crawl stably. Equipped with a magnetic control handle, which can reduce some magnetic attraction when moving the handle, and is easy to install.
- 3. It can weld in both left and right directions, and both ends of the trolley are equipped with inductive switches. The trolley can stop automatically after welding.
- 4. It has an arc closing function to improve the quality of the weld at the arc closing point.

► 部件名称 Parts Name



- 01 焊炬1调整滑块：起弧点可以利用此装置进行上/下、前/后的调整，行程各有45mm。
- 02 焊炬锁紧装置：当安装焊炬时，必须确保其锁紧。
- 03 焊枪（客户提供）
- 04 导轮及导轮臂：导轮应紧靠立板，有三种位置选择（如下图所示）
- 05 限位停止开关：机器两端都设有限位开关，即焊接停止开关。
- 06 驱动轮
- 07 操作面板
- 08 焊炬2调整滑块
- 09 金属插座：此插座为外接电缆插座。此电缆负责小车与送丝机的连接及电力供应。（电缆的另一端有两个分支，一个接送丝机，另一个接电源。）
- 10 磁控手柄：磁铁的吸合由此手柄控制，如图所示，往上为离，往下为合。
- 11 焊炬角度调节轴：松开该螺丝，可调整焊枪的角度（40~55°）

- 01. **Torch adjustment slider:** The arc starting point can be adjusted up/down and forward/backward using this device, with a stroke of 45mm each.
- 02. **Torch locking device:** When installing the torch, make sure it is locked.
- 03. **Torch angle adjustment shaft:** Loosen this screw to adjust the angle of the Welding torch (40~55°)
- 04. **Guide wheel and guide wheel arm:** The guide wheel should be close to the vertical plate, with three position options (Figure 2)
- 05. **Welding torch** (straight handle or curved handle provided by the customer)
- 06. **Automatic stop switch:** Limit switches are provided at both ends of the machine, i.e. welding stop switches.
- 07. **Magnetic control handle:** The magnet is controlled by this handle, as shown in Figure 3, upward for separation and downward for closing.
- 08. **Operation panel**
- 09. **Speed adjustment knob**
- 10. **Hand handle**
- 11. **Metal socket:** This socket is an external cable socket. This cable is responsible for the connection between the trolley and the wire feeder and the power supply. (The other end of the cable has two branches, one for the wire feeder and the other for the power supply.)



► 技术参数 Technical Parameters

输入电压 (Input voltage)	220V
行走电机 (Travel motor)	DC24V
驱动方式 (Drive mode)	四橡胶轮驱动 (Four rubber wheels driving)
跟踪方式 (Tracking mode)	导向轮 (Guide wheel type)
导轮高度 (Height of torch)	有三种选择方式 (Three options)
焊接速度 (Running speed)	150 ~ 800mm/min ± 10%
限位开关 (Self-stop function)	前后两端限位器 (By spacing parts of front-end and after end)
焊炬调整范围 (Adjusting scope of torch)	上下 (Up/down moving) 45mm ± 5%
	左右 (Left and right moving) 45mm ± 5%
	水平角 (Horizontal Angle) 40~55°
外形尺寸 (Dimension)	310mm × 260mm × 270mm
机器重量 (Machine weight)	8.6kg

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ZX-6A-11 双面自动焊接小车
DOUBLE-SIDED AUTOMATIC WELDING TROLLEY

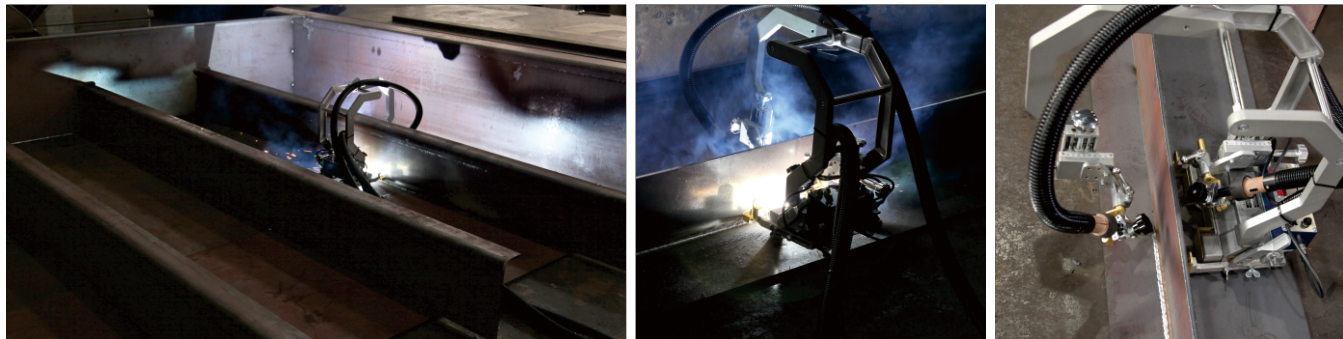
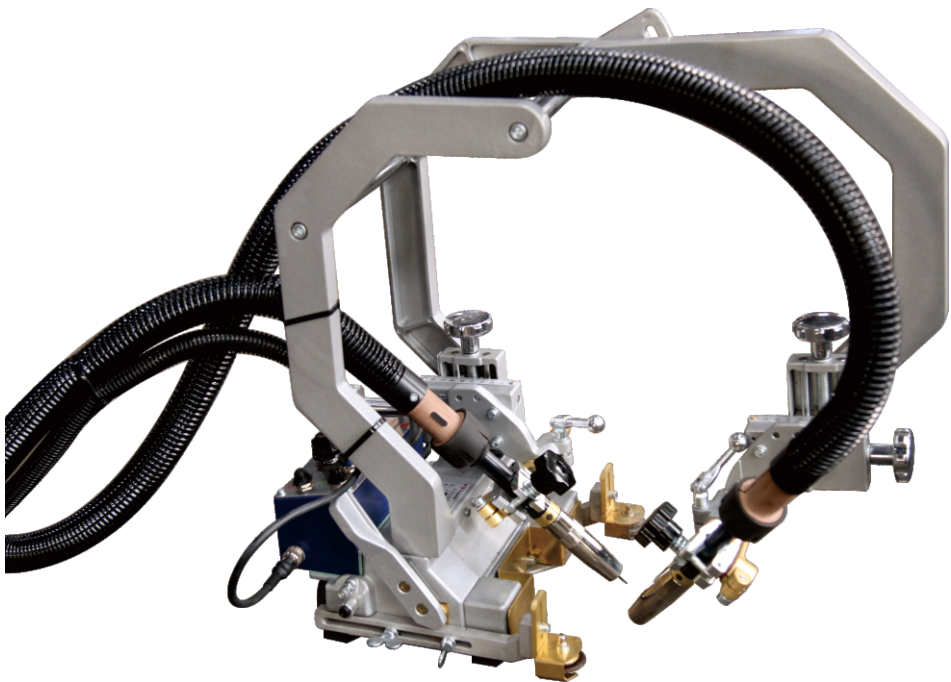
► 设备概述 Equipment Overview

该款CO₂ 焊接自动小车是为适应断续/连续双面焊接而设计的自动焊接小车，应用非常广泛。其突出特点是既可以对同一条焊缝进行双面焊接，也可以同时进行对称焊接，以减少工件的变形量。广泛用于船舶、桥梁、钢结构、石油化工等行业，适合多种结构的焊接，如：加强筋板、肋板、交叉部位的焊接，箱型梁的焊接等。

主要优点：减少劳动强度，改善作业环境提高工作效率，是传统手工焊的1.5倍；避免人为因素所造成的焊缝质量不良操作简单，非熟练的技术工人也能快速掌握。

This CO₂welding automatic trolley is designed for intermittent/continuous double-sided welding and is widely used. Its outstanding feature is that it can perform double-sided welding on the same weld and symmetrical welding at the same time to reduce the deformation of the workpiece.

It is widely used in ships, bridges, steel structures, petrochemicals and other industries, and is suitable for welding of various structures, such as: welding of reinforcing ribs, ribs, cross-sections, welding of box beams, etc.



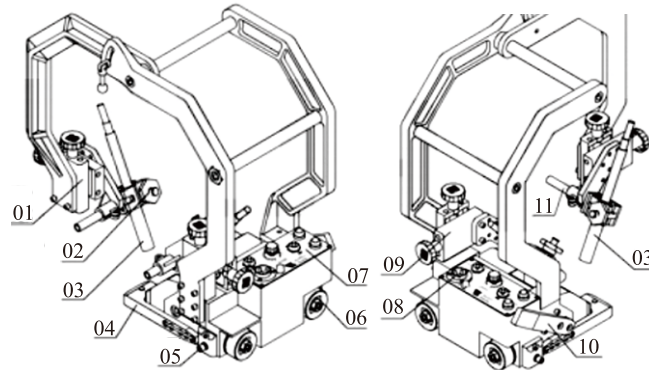
► 性能特点

- 1、一体化机身，坚固耐用，轻巧便携。
- 2、低重心设计，小车具有16KG拖力，能够稳定爬行。
- 3、设有磁控手柄，移动手柄时可以减少部分磁吸力，容易安装，可以左右两方向焊接，小车两端均安装有感应开关，焊接结束后小车可以自动停止。
- 4、具有收弧功能，提高收弧处的焊缝质量。
- 5、可同时进行双面的角焊接工作，大大提高了工作效率。
- 5、保证双面焊接的速度同时进行，并且减少焊接时的变形。

► Performance Advantages

1. Integrated body, durable, lightweight and portable.
2. Low center of gravity design, the trolley has a 16KG drag force and can crawl stably.
3. Equipped with a magnetic control handle, the magnetic attraction can be reduced when the handle is moved. It is easy to install and can weld in both left and right directions. Inductive switches are installed at both ends of the trolley. The trolley can stop automatically after welding.
4. It has an arc closing function to improve the quality of the weld at the arc closing point.
5. It can mainly perform double-sided corner welding at the same time, which greatly improves work efficiency.
6. Ensure that the speed of double-sided welding is carried out at the same time and reduce deformation during welding.

► 部件名称 Parts Name



01. 焊炬 1 调整滑块：起弧点可以利用此装置进行上/下、前/后的调整，行程各有45mm。
02. 焊炬锁紧装置：当安装焊炬时，必须确保其锁紧。
03. 焊枪（客户提供）
04. 导轮及导轮臂：导轮应紧靠立板，有三种位置选择。
05. 限位停止开关：机器两端都设有限位开关，即焊接停止开关。
06. 驱动轮
07. 操作面板
08. 焊炬 2 调整滑块
09. 金属插座：此插座为外接电缆插座。此电缆负责小车与送丝机的连接及电力供应。（电缆的另一端有两个分支，一个接送丝机，另一个接电源。）
10. 磁控手柄：磁铁的吸合由此手柄控制，如图所示，往上为离，往下为合。
11. 焊炬角度调节轴：松开该螺丝，可调整焊枪的角度（40~55°）

- 01.Welding torch 1 adjustment slider: The arc starting point can be adjusted up/down and forward/backward using this device, with a stroke of 45mm each.
- 02.Welding torch locking device: When installing the welding torch, make sure it is locked.
- 03.Welding torch (provided by the customer)
- 04.Guide wheel and guide wheel arm: The guide wheel should be close to the vertical plate, with three position options.
- 05.Limit stop switch: There are limit switches at both ends of the machine, i.e. welding stop switches.
- 06.Driving wheel
- 07.Operation panel
- 08.Welding torch 2 Adjustment slider
- 09.Metal socket: This socket is an external cable socket. This cable is responsible for the connection between the trolley and the wire feeder and the power supply. (The other end of the cable has two branches, one for the wire feeder and the other for the power supply.)
- 10.Magnetic control handle: The magnet's attraction is controlled by this handle, as shown in the figure, upward is for separation, downward is for closing.
11. Welding torch angle adjustment shaft: Loosen this screw to adjust the angle of the welding torch (40-55°)

► 技术参数 Technical Parameters

输入电压 (Input voltage)	220V	
行走电机 (Travel motor)	DC24V	
驱动方式 (Drive mode)	橡胶轮四轮驱动(Four rubber wheels driving)	
焊接速度 (Running speed)	150 ~ 800mm/min ± 10%	
	上下(Up/down moving)	45mm
焊枪调整范围 (Adjusting scope of torch)	前后(Front/rear moving)	45mm
	作业角(Working corner)	45°
	进行角(Progress corner)	± 10°
限位停止功能 (Self-stop function)	前后两端限位器(By spacing parts of front-end and after end)	
跟踪方式 (Tracking mode)	导轮型(Guide wheel type)	
焊接盲区 (Needed welding length)	前后端(Front and back end)	127mm
磁铁吸附力 (Magnet Adsorption)	30kg	
外形尺寸 (Dimension)	500mm × 280mm × 520mm	
机器重量 (Machine weight)	12.5kg	