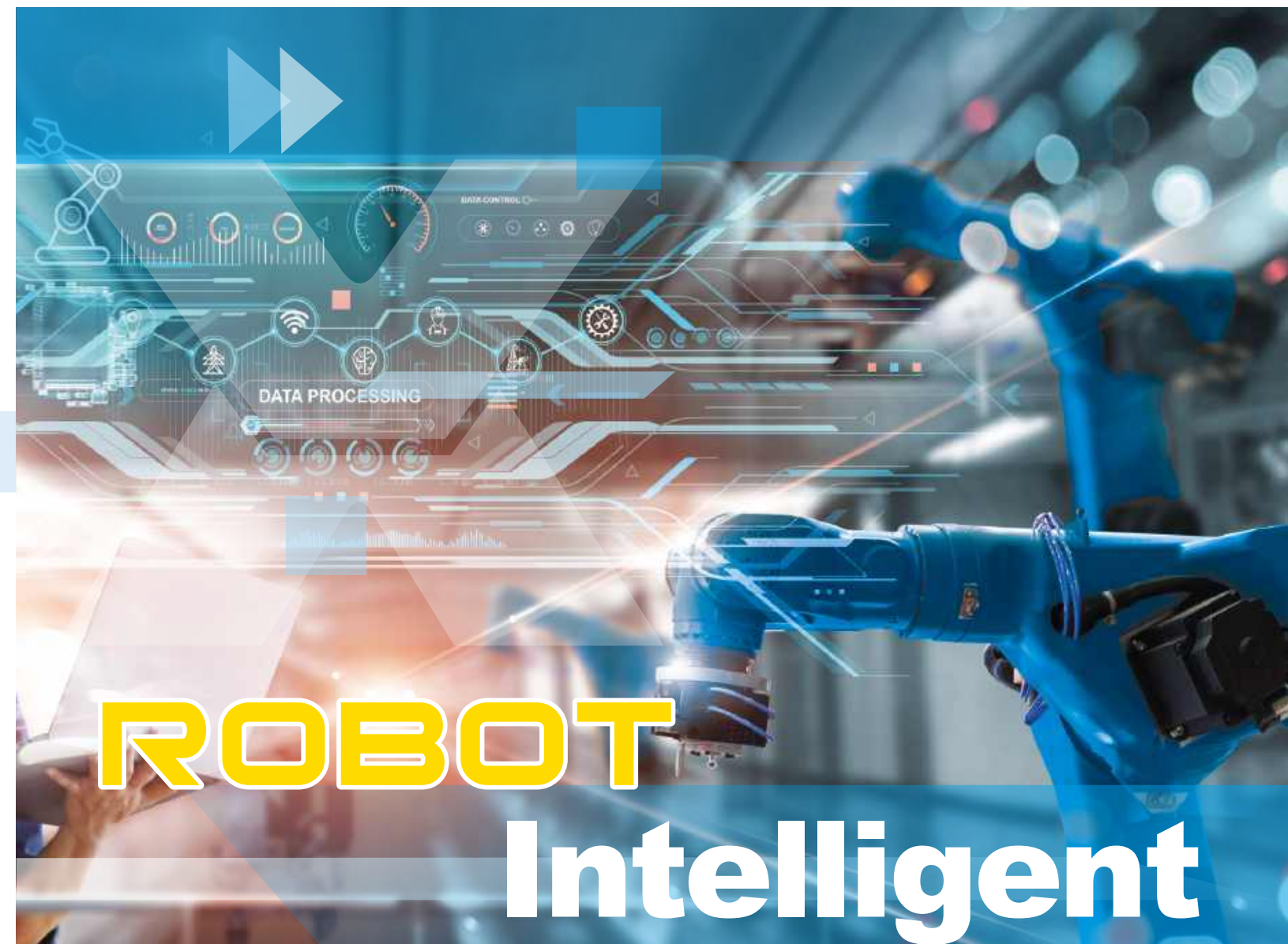


X ZHOUXIANG

ZHOUXIANG ROBOT

专注智造 开拓精进 创造价值



无锡洲翔成套焊接设备有限公司

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

公司总部: 中国江苏省无锡市锡山区东港镇电力装备产业园

Add: Industry Garden Donghu, Donggang Town, Wuxi City, Jiangsu, China

咨询热线 (Tel): 400-928-0228 传真 (Fax): 0510-88791142

Email: info@wxzhouxianghi.com Http: //www.wxzhouxiang.com



2025年9月

洲翔智能机器人



公司简介

COMPANY PROFILE

洲翔企业成立于1991年，位于江苏省无锡市。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。

洲翔企业包括:无锡洲翔成套焊接设备有限公司、无锡洲翔智能机器人有限公司、无锡洲翔激光设备有限公司。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”、“江苏省重点推广应用的高新技术新产品”、“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;企业还通过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。

洲翔智能机器人产品主要包括:切割机器人，焊接机器人，折弯机器人，搬运机器人等。核心技术已获得多项国家专利及软件著作权，凭籍多年的先进成熟的生产工艺和团队研发力量，为客户提供性能精良、质量稳定，性价比优异的产品，可广泛应用于汽车、航空、军工、新能源、钢铁、船舶、石油、化工、机械、电子、钣金加工等行业。产品覆盖全国各地，远销欧美、东南亚及中东地区等国家。

洲翔企业一贯秉承“科技创新、优质高效、顾客至上、遵信守约”的理念宗旨，热忱与全球客户及同行朋友真诚合作，共创辉煌。

Zhouxiang company was founded in 1991, located 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.

Zhouxiang company includes: Wuxi Zhouxiang Complete Set of Welding Equipment Co., Ltd., Wuxi Zhouxiang Intelligent Robot Co., Ltd., and Wuxi Zhouxiang Laser Machinery Co., td. There are 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, of which more than 50 are invented, 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 intelligent robot products mainly includ: cutting robots, welding robots, bending robots, and andling robots. Core technology has obtained a number of national patents and software copyrights. With many years of advanced and mature production technology and team research and development power, it provides customers with excellent erformance, stable quality, and cost-effective products. Our products can be widely used in automotive, aviaton, military, newenergy, new energy, steel, ships, petroleum, chemical, machinery, electronics, sheet metal processing and other industries. Products cover all parts of the country, exported to Europe, America, Southeast Asia, and the Middle East.

Zhouxiang Company has always adhered to the concept of "scientific and technological innovation, high-quality and efficient, customer supremacy, and compliance with the contract". We are enthusiastic about cooperating with global customers and fellow friends to create glory together.



ROBOTIntelligent

制造&装备 Manufacturing equipment

公司拥有高精度、高效能的加工中心，配备精密卧式加工、柔性加工单元、海克特卧式加工等大型专业的加工设备 & 先进的测试中心，贯穿于产品的生产流水线之中，只有优良先进的生产设备才能制造精良的产品。

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.

质量控制 Rigid Quality Control System

完善的“精细化管理”，细致入微的全程质量控制，是“洲翔机器人”成就精品的根本保证，我们以细节上的完美执行力，确保生产管理的程序化、系统化、规范化。

Perfect refined management and exquisite overall-process quality control system is the fundamental guarantee for ZHOUXIANG to be the excellent. Our perfect execution in details can ensure the programming, systematic and regular production management.

荣誉&资质 Honors & Qualifications



单机智能焊接工作站

INTELLIGENT WELDING WORKSTATION (SINGLE ROBOT)

01

地轨式智能焊接工作站

GROUND RAIL ROBOT INTELLIGENT WELDING WORKSTATION

03

悬臂式机器人智能焊接工作站（7轴）

CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (7 AXES)

05

悬臂式机器人智能焊接工作站（8轴）

CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (8 AXES)

07

旋转悬臂式机器人智能焊接工作站（8轴）

CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (8 AXES)

09

升降悬臂式机器人智能焊接工作站（9轴）

CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (9 AXES)

11

悬臂式机器人智能焊接工作站（9轴）

CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (9 AXES)

13

龙门式单/双机器人智能焊接工作站

GANTRY SINGLE / TWIN ROBOT INTELLIGENT WELDING WORKSTATION

15

AGV移动智能焊接机器人

AGV MOVABLE INTELLIGENT WELDING ROBOT

17

洲翔协作焊接机器人

ZHOUXIANG COLLABORATIVE WELDING ROBOT

19

洲翔钢结构智能焊接方案

ZHOUXIANG INTELLIGENT STEEL STRUCTURE WELDING SOLUTION

21

型钢激光二次加工线

LASER SECONDARY BEAM PROCESSING LINE

27

焊接机器人可选配型号

WELDING ROBOT MODELS

29

配套附加设备

AUXILIARY EQUIPMENT

30

单机智能焊接工作站

INTELLIGENT WELDING WORKSTATION (SINGLE ROBOT)

► 设备概述 Overview

独特外观，采用中空型结构手臂、手腕，焊接电缆内置结构紧凑，可在狭窄空间焊接作业，重量轻便防尘和防滴，安全性高，安装机身盖罩，可以放心使用于各种恶劣的环境工作空间大、运行速度快、重复定位精度高，适用于少规格，大批量的产品，可以配套机器人自动上料，减少人工和焊工，焊缝成型美观，一致性好。机器人配套自动清枪装置。

Unique appearance, hollow structure arms and wrists, built-in welding cables, compact structure, can be used for welding operations in narrow spaces, light weight, dust-proof and drip-proof, high safety, equipped with body cover, can be used in various harsh conditions with confidence environment. It has a large working space, fast running speed, and high repeat positioning accuracy. It is suitable for products with small specifications and large quantities. It can be equipped with robots for automatic feeding, reducing labor and welders. The welds are beautifully formed and have good consistency. The robot is equipped with an automatic gun cleaning device.



ROBOT Intelligent



► 设备配置 Configuration

- 机器人: MR10W-1440-D / MR08-1840 / MR12-2010
- 焊接电源: 奥太电源 / 麦格米特电源
- 焊枪: 特尔玛水冷加长焊枪
- 控制系统: 智流行示教焊接系统
- 视觉系统: 线激光扫描跟踪系统
- 可选配置: 机器人CRP2006+知象3D视觉2.0系统
- 可选配变位机: L型变位机 / P型变位机 / 头尾式变位机
- Robot: MR10W-1440-D/MR08-1840/MR12-2010
- Welder: Aotai / Megmeet
- Welding gun: TRM water-cooled extended welding gun
- Control system: iManifold teaching welding system
- Vision system: Line laser scanning tracking system
- Optional configuration: Robot CRP2006 + Revopoint 3D Vision 2.0 system
- Optional positioners: L-type positioner, P-type positioner, head-tail positioner

► 参数性能 Parameter performance

- 适用场景: 适用于节点板、筋托、牛腿等零部件，小型结构件等
- 设备规格: ZX-DW
- 总功率: 机器人5KVA+焊机31KVA
- 最大工作范围: 2 × 1.2 × 0.6m
- 焊接平均效率: 0.3-0.5m/min (焊接工艺不同，速度不同)
- Applicable scenarios: Suitable for gusset plates, ribs, corbels and other parts, small structural parts
- Equipment specifications: ZX-DW
- Total power: robot 5KVA + welder 31KVA
- Maximum working range: 2 × 1.2 × 0.6M
- Average welding efficiency: 0.3-0.5m/min (different welding processes with different speeds)



地轨式智能焊接工作站

GROUND RAIL ROBOT INTELLIGENT WELDING WORKSTATION

► 设备概述

地轨式智能工作站搭配柏楚免示教焊接系统，柏楚大视距寻缝器，直接导入Tekla、SOLIDWORKS或UG的三维模型文件，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。机器人配套自动清枪装置。可单机单轨也可双机共轨。

地轨式行走轴增加了工件长度方向的适应性，机器人可以与地轨进行联动可一次焊接较长焊缝，轨道左右两侧工位都可以工作，地轨带有自动润滑装置。双机器人也大大提高了焊接工作效率。

目前主要用于H型钢普通筋板，横竖筋板，柱底板，檩托板，牛腿等结构的焊接。

► 设备配置 Configuration

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



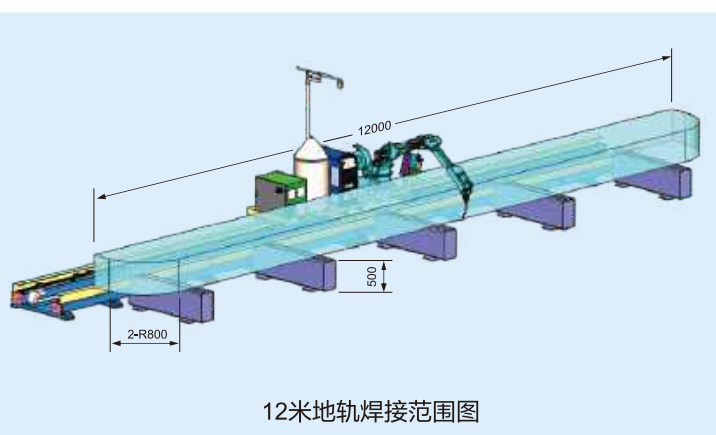
► Overview

Intelligent ground rail robot welding station is equipped with Friendless teaching-free welding system and large visual distance seam finder. It can directly import the 3D model files of Tekla, SOLIDWORKS or UG, directly match the welding process parameters, automatically identify the precise weld position and generate the best optimized welding process for welding. The robot is equipped with an automatic gun cleaning device. The ground rail type walking axis increases the adaptability of length direction. The robot can link with the ground rail to weld longer seam at a time, and the workstation can work on the left and right sides of the rail, can be single robot on rail.

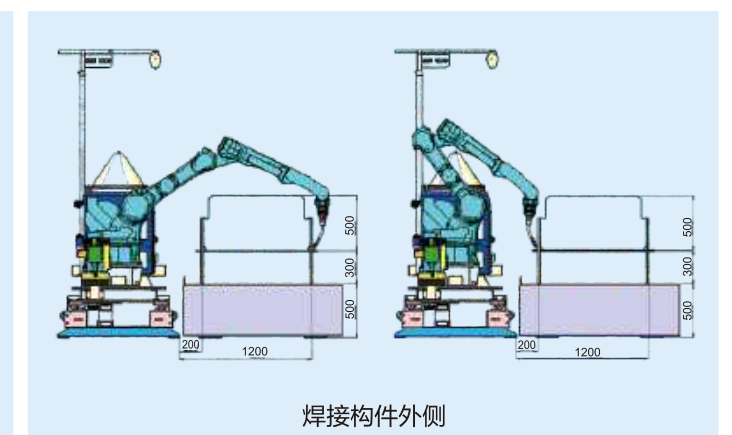
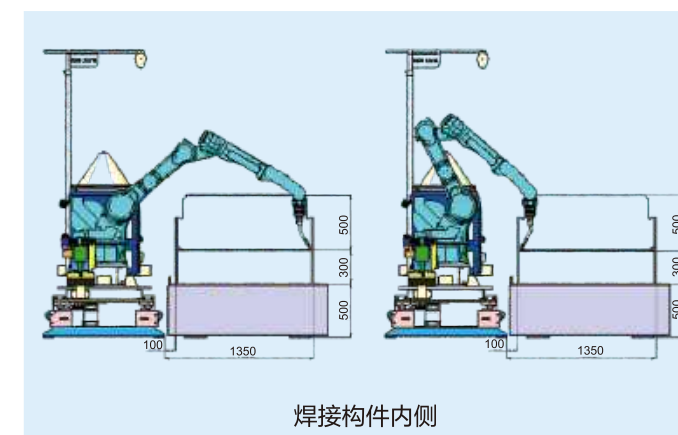
At present, it is mainly used for the welding of H beam rib plates, column base plates, purlin support plates, corbels and other structures.

► 参数性能 Parameter performance

- ◎ 适用场景: 适用于型钢二次加工
 - ◎ 设备规格: ZX-RYDW160.II
 - ◎ 总功率: 机器人14KVA + 焊机62KVA
 - ◎ 最大工件宽度: 1.2m (轨长12m, 可定制)
 - ◎ 焊接平均效率: 0.3-0.5m/min (焊接工艺不同, 速度不同)
-
- ◎ **Applicable scenarios:** secondary processing of section steel
 - ◎ **Equipment specifications:** ZX-RYDW160.II
 - ◎ **Total power:** robot 14KVA + welder 62KVA
 - ◎ **Maximum workpiece width:** 1.2m (rail length 12m, also can customize)
 - ◎ **Average welding efficiency:** 0.3-0.5m/min (different welding processes with different speeds)



ROBOT Intelligent



悬臂式机器人智能焊接工作站（7轴）

CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (7AXES)

ROBOT Intelligent

► 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。

该设备适用于水平板与竖直板拼接而成的工件，支持直线、圆弧、曲线、平焊、立焊加工。对于常见的钢结构方面的H型钢（等截距变截距、牛腿）、板单元、隔板工件有完善的解决方案，还能灵活处理T型台、U型肋、管拼件等复杂构件。可广泛应用于钢结构、桥梁、造船等行业。

► 设备配置 Configuration

- ◎ 机器人：MR12-2010
- ◎ 焊接电源：奥太电源 / 麦格米特电源
- ◎ 焊枪：特尔玛水冷加长焊枪
- ◎ 控制系统：柏楚免示教焊接系统
- ◎ 视觉系统：柏楚大视距寻缝器+新增3800相机逆向建模功能
- ◎ 导轨：12米导轨（长度可定制）
- ◎ Robot: MR12-2010
- ◎ Welder: Aotai / Megmeet
- ◎ Welding gun: TRM water-cooled extended welding gun
- ◎ Control system: Friendless teaching-free welding system
- ◎ Vision system: Friendless large viewing distance seam finder + new 3800 camera reverse modeling function
- ◎ Rail: 12m (length can be customized)

► Overview

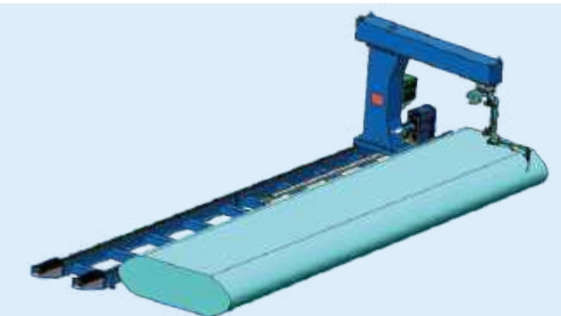
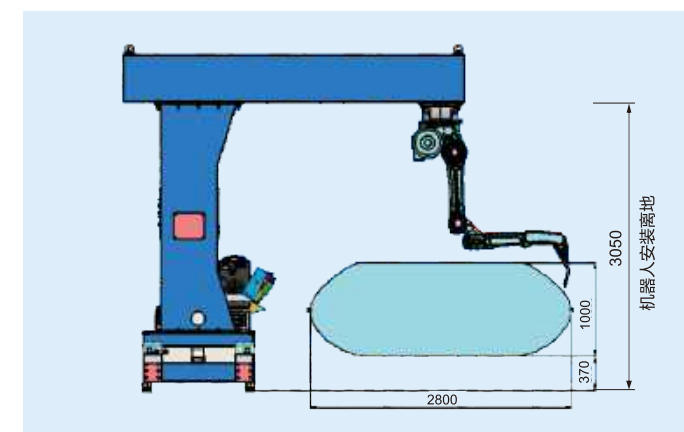
The cantilever robot intelligent welding workstation is equipped with the Bochu intelligent welding system and a large-line scanning stereo camera. It has added special functions such as point cloud reconstruction and large-line scanning initial positioning. It can choose model-driven processing (directly 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.

The equipment is suitable for workpieces formed by horizontal plates and vertical plates, and supports straight line, arc, curve, flat welding and vertical welding. It has perfect solutions for H-shaped steel (equal section, variable section, bracket), plate unit, and partition workpieces in common steel structures, and can flexibly handle complex components such as T-type platforms, U-shaped ribs, and pipe assemblies. It can be widely used in steel structure, bridge, shipbuilding and other industries.



► 参数性能 Parameter performance

- ◎ 适用场景：适用于型钢二次加工
- ◎ 设备规格：ZX-XRYH100（7轴）
- ◎ 总功率：机器人10KVA+焊机31KVA（7轴）
- ◎ 最大工件宽度：2.6m（轨长12米，可定制）
- ◎ 焊接平均效率：0.3-0.5m/min（焊接工艺不同，速度不同）
- ◎ Application scenario: secondary processing for steel structure
- ◎ Machine spec: ZX-XRYH100 (7 axes)
- ◎ Total power: Robot 10KVA + welder 31KVA (7 axes)
- ◎ Maximum workpiece width: 2.6m (rail length 12m, also can customize)
- ◎ Average welding efficiency: 0.3-0.5m/min (different welding process, different speed)



焊接范围	离地高度(mm)	370	570	870	1170	1370
工件宽度MAX(mm)		1600	2500	2800	2400	1700

悬臂式机器人智能焊接工作站（8轴）
CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (8 AXES)

ROBOTIntelligent

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。

该设备适用于水平板与竖直板拼接而成的工件，支持直线、圆弧、曲线、平焊、立焊加工。对于常见的钢结构方面的H型钢（等截面变截面、牛腿）、板单元、隔板工件有完善的解决方案，还能灵活处理T型台、U型肋、管拼件等复杂构件。可广泛应用于钢构、桥梁、造船等行业。

设备配置 Configuration

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

Overview

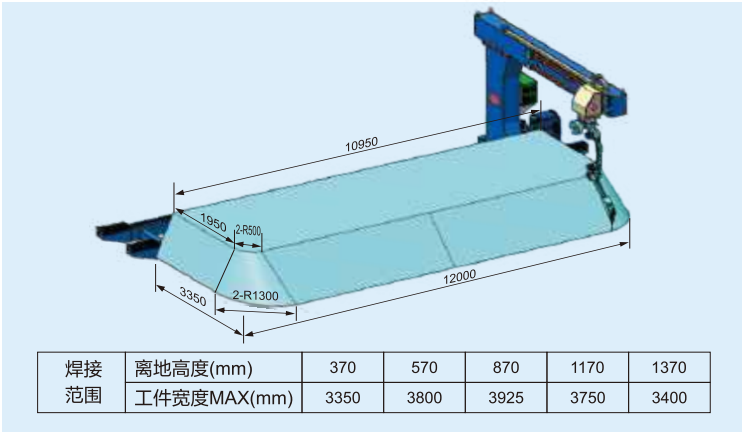
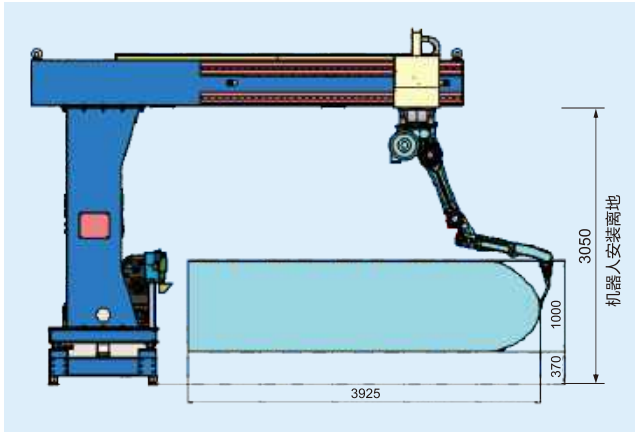
The cantilever robot intelligent welding workstation is equipped with the Bochu intelligent welding system and a large-line scanning stereo camera. It has added special functions such as point cloud reconstruction and large-line scanning initial positioning. It can choose model-driven processing (directly 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.

The equipment is suitable for workpieces formed by horizontal plates and vertical plates, and supports straight line, arc, curve, flat welding and vertical welding. It has perfect solutions for H-shaped steel (equal section, variable section, bracket), plate unit, and partition workpieces in common steel structures, and can flexibly handle complex components such as T-type platforms, U-shaped ribs, and pipe assemblies. It can be widely used in steel structure, bridge, shipbuilding and other industries.



参数性能 Parameter performance

- 适用场景: 适用于型钢二次加工
- 设备规格: ZX-XRYSW100（8轴）
- 总功率: 机器人13KVA+焊机31KVA（8轴）
- 最大工件宽度: 3.3 m（轨长12米，可定制）
- 焊接平均效率: 0.3-0.5m/min（焊接工艺不同，速度不同）
- Application scenario: secondary processing for steel structure
- Machine spec: ZX-XRYHSW100 (8 axes)
- Total power: Robot 13KVA + welder 31KVA (8 axes)
- Maximum workpiece width: 3.3m (rail length 12m, also can customize)
- Average welding efficiency: 0.3-0.5m/min(different welding process, different speed)



旋转悬臂式机器人智能焊接工作站（8轴）

CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (8 AXES)



► 设备概述 Overview

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，逆向建模)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。该机型悬臂可180度旋转，可双工位进行焊接，大大提高了焊接效率。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。

该设备适用于水平板与垂直板拼接而成的工件，支持直线、圆弧、曲线、平焊、立焊加工。可广泛应用于钢构、桥梁、造船等行业。

Intelligent Welding Workstation with Cantilever Robot, equipped with Boxu Smart Welding System and large-line scanning stereo camera, has added special functions such as point cloud reconstruction and initial positioning with large-line scanning. It offers two sets of solutions: model-driven processing (direct import of 3D model files) and non-drawing processing (generating point cloud data through workpiece scanning for reverse modeling). These solutions directly match welding process parameters, automatically identify the precise position of weld seams, and generate optimized welding processes for welding. This not only improves the precision and speed of welding but also greatly enhances processing flexibility and adaptability. The cantilever of this model can rotate 180 degrees and weld at double stations, significantly improving welding efficiency. The robot is equipped with an automatic gun cleaning device. The length of the track can be determined based on the length of the user's workpiece, and the track is equipped with an automatic lubrication device to ensure flexible operation.

This equipment is suitable for workpieces assembled from horizontal and vertical plates and supports processing of straight lines, arcs, curves, flat welding, and vertical welding. It can be widely used in industries such as steel structures, bridges, and shipbuilding.

ROBOT Intelligent

► 设备配置 Configuration

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

► 参数性能 Parameter performance

- ◎ 适用场景: 适用于型钢二次加工
- ◎ 设备规格: ZX-XRYSW100 (8轴)
- ◎ 总功率: 机器人13KVA+焊机31KVA (8轴)
- ◎ 最大工件宽度: 2.6 m (轨长12米, 可定制) (8轴)
- ◎ 焊接平均效率: 0.3-0.5m/min (焊接工艺不同, 速度不同)
- ◎ Application scenario: secondary processing for steel structure
- ◎ Machine spec: ZX-XRYHSW100 (8 axes)
- ◎ Total power: Robot 13KVA + welder 31KVA (8 axes)
- ◎ Maximum workpiece width: 2.6m (rail length 12m, also can customize)
- ◎ Average welding efficiency: 0.3-0.5m/min (different welding process, different speed)



悬臂式机器人智能焊接工作站（9轴）

CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (9 AXES)



ROBOT Intelligent

► 设备概述 Overview

悬臂式9轴机器人智能焊接工作站是一款高精度、高柔性的自动化焊接系统，免编程免示教，可在X、Y、Z三轴上自由移动，能够有效地应用于水平板与垂直板拼接而成的工件，支持直线、圆弧、曲线、平焊、立焊加工。对于常见的钢结构方面的H型钢（等截距变截距、牛腿）、板单元、隔板工件有完善的解决方案，还能灵活处理T型台、U型肋、管拼件等复杂构件。广泛应用于钢构、桥梁、船舶、电力等行业。

The cantilever 9-axis robot intelligent welding workstation is a high-precision and highly flexible automated welding system. It requires no programming or teaching and can move freely on the X, Y, and Z axis. The equipment is suitable for workpieces formed by horizontal plates and vertical plates, and supports straight line, arc, curve, flat welding and vertical welding. It has perfect solutions for H-shaped steel (equal section, variable section, bracket), plate unit, and partition workpieces in common steel structures, and can flexibly handle complex components such as T-type platforms, U-shaped ribs, and pipe assemblies. It can be widely used in steel structure, bridge, shipbuilding and other industries.

► 设备配置 Configuration

- ◎ 机 器 人：MR12-2010
- ◎ 焊接电源：奥太电源 / 麦格米特电源
- ◎ 焊 枪：特尔玛水冷加长焊枪
- ◎ 控制系统：柏楚免示教焊接系统
- ◎ 视觉系统：柏楚大视距寻缝器
- ◎ 导 轨：12米导轨（长度可定制）
- ◎ Robot: MR12-2010
- ◎ Welder: Aotai / Megmeet
- ◎ Welding gun: TRM water-cooled extended welding gun
- ◎ Control system: Friendless teaching-free welding system
- ◎ Vision system: Friendless large viewing distance seam finder
- ◎ Rail: 12m (length can be customized)

► 参数性能 Parameter performance

- ◎ 适用场景：适用于型钢二次加工
- ◎ 设备规格：ZX-XBSJA / ZX-XBSJB
- ◎ 总 功 率：机器人13KVA+焊机31KVA
- ◎ 最大适用工件范围：3.8×2.2 m / 3.8×2.7 m（轨长12米，可定制）
- ◎ 焊接平均效率：0.3-0.5m/min（焊接工艺不同，速度不同）
- ◎ Application scenario: secondary processing for steel structure
- ◎ Machine spec: ZX-XRYHSW100
- ◎ Total power: Robot 13KVA + welder 31KVA
- ◎ Applicable workpiece range: 3.8×2.2 m / 3.8×2.7 m (12m guide rail, customizable)
- ◎ Average welding efficiency: 0.3-0.5m/min (different welding process, different speed)



悬臂式机器人智能焊接工作站（9轴）

CANTILEVER ROBOT INTELLIGENT WELDING WORKSTATION (9 AXES)

ROBOT Intelligent

► 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。

该设备适用于水平板与竖直板拼接而成的工件，支持直线、圆弧、曲线、平焊、立焊加工。对于常见的钢结构方面的H型钢(等截面变截面、牛腿)、板单元、隔板工件有完善的解决方案，还能灵活处理T型台、U型肋、管拼件等复杂构件。可广泛应用于钢构、桥梁、造船等行业。

► 设备配置 Configuration

- ◎ 机 器 人: MR10W-1440-D
- ◎ 焊接电源: 奥太电源 / 麦格米特电源
- ◎ 焊 枪: 特玛玛水冷加长焊枪
- ◎ 控制系统: 柏楚免示教焊接系统
- ◎ 视觉系统: 柏楚大视距寻缝器
- ◎ 导 轨: 12米导轨 (长度可定制)
- ◎ Robot: MR10W-1440-D
- ◎ Welder: Aotai / Megmeet
- ◎ Welding gun: TRM water-cooled extended welding gun
- ◎ Control system: Friendless teaching-free welding system
- ◎ Vision system: Friendless large viewing distance seam finder
- ◎ Rail: 12m (length can be customized)

► 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.

The equipment is suitable for workpieces formed by horizontal plates and vertical plates, and supports straight line, arc, curve, flat welding and vertical welding. It has perfect solutions for H-shaped steel (equal section, variable section, bracket), plate unit, and partition workpieces in common steel structures, and can flexibly handle complex components such as T-type platforms, U-shaped ribs, and pipe assemblies. It can be widely used in steel structure, bridge, shipbuilding and other industries.



► 参数性能 Parameter performance

- ◎ 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 (9轴)
- ◎ 适用工件范围: 2.3×1.5 m (12m导轨, 可定制) (9轴)
- ◎ 焊接平均效率: 0.3~0.5m/min (焊接工艺不同, 速度不同)
- ◎ Application scenario: secondary processing for steel structure
- ◎ Machine spec: ZX-XRYSW150
- ◎ Total power: Robot 15KVA + welder 31KVA (9 axes)
- ◎ 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)

► 变位机适应工件规格 Workpiece Specifications

- ◎ 工件 (主体) 截面尺寸:
高度 / 150~600 × 宽度 / 150~300 × 长度 / 3000~12000mm
- ◎ 工件重量: ≤3000Kg
- ◎ Workpiece (Main Body) Cross-sectional Dimensions:
Height / 150~600 × Width / 150~300 × Length / 3000~12000mm
- ◎ Workpiece Weight: ≤3000Kg



龙门式单/双机器人智能焊接工作站

GANTRY SINGLE / TWIN ROBOT INTELLIGENT WELDING WORKSTATION



► 设备概述

龙门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，逆向建模)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。

该设备适用于水平板与垂直板拼接而成的工件，支持直线、圆弧、曲线、平焊、立焊加工。大跨距的门式结构保证了焊接宽度可达5米，更适用于钢构、桥梁、造船等行业。

ROBOT Intelligent

► Overview

The gantry-type robotic intelligent welding workstation, equipped with Boxu Smart Welding System and a large-line scanning stereo camera, has added special functions such as point cloud reconstruction and initial positioning with large-line scanning. It offers two sets of solutions: model-driven processing (direct import of 3D model files) and non-drawing processing (generating point cloud data through workpiece scanning for reverse modeling). These solutions directly match welding process parameters, automatically identify the precise position of weld seams, and generate optimized welding processes for welding. This not only improves the precision and speed of welding but also greatly enhances

processing flexibility and adaptability. The robot is equipped with an automatic gun cleaning device. The length of the track can be determined based on the length of the user's workpiece, and the track is equipped with an automatic lubrication device to ensure flexible operation.

This equipment is suitable for workpieces assembled from horizontal and vertical plates and supports processing of straight lines, arcs, curves, flat welding, and vertical welding. The large-span gantry structure ensures a welding width of up to 5 meters, making it more suitable for industries such as steel structures, bridges, and shipbuilding.

► 设备配置

- ◎ 机器人: MR12-2010 (单/双机)
- ◎ 焊接电源: 奥太电源 / 麦格米特电源
- ◎ 焊枪: 特尔玛水冷加长焊枪
- ◎ 控制系统: 柏楚免示教焊接系统
- ◎ 视觉系统: 柏楚大视距寻缝器
- ◎ 导轨: 长度可定制

► Configuration

- ◎ Robot: MR12-2010 (1/2 sets)
- ◎ Welder: Aotai / Megmeet
- ◎ Welding gun: TRM water-cooled extended welding gun
- ◎ Control system: Friendless teaching-free welding system
- ◎ Vision system: Friendless large viewing distance seam finder
- ◎ Rail: length can be customized

► 参数性能

- ◎ 适用场景: 适用于型钢二次加工
- ◎ 设备规格: (单机) ZX-LRYW50 / (双机) ZX-LRYW50. II
- ◎ 总功率: 机器人10 KVA + 焊机31KVA (单机)
机器人18 KVA + 焊机62 KVA (双机)
- ◎ 焊接平均效率: 0.3-0.5m/min (焊接工艺不同, 速度不同)

► Parameter performance

- ◎ Application scenario: secondary processing for steel structure
- ◎ Machine spec.: (1set)ZX-LRYW50 / (2sets) ZX-LRYW50. II
- ◎ Total power: (1set)Robot 10KVA + welder 31KVA
(2sets)Robot 18KVA + welder 62KVA
- ◎ Average welding efficiency: 0.3-0.5m/min (different welding process, different speed)



AGV移动智能焊接机器人
AGV MOVABLE INTELLIGENT WELDING ROBOT

ROBOTIntelligent



性能特点 Performance characteristics

- ◎ **结构**: 履带式 AGV 小车通常采用链条或履带作为传动装置，而轮子式 AGV 小车则使用轮子作为移动部件。
- ◎ **适用环境**: 履带式 AGV 小车适用于各种地面条件，包括不平整的地面、泥泞的地面等。它们可以在恶劣的环境中工作，如工厂车间、仓库等。轮子式 AGV 小车则更适合在平整的地面上行驶，如办公室、医院等。
- ◎ **灵活性**: 履带式 AGV 小车的灵活性较差，转弯半径较大，不适合在狭窄的空间内工作。轮子式 AGV 小车则更加灵活，可以在狭窄的通道和空间内自由行驶。
- ◎ **速度和效率**: 一般来说，轮子式 AGV 小车的速度较快，运输效率较高。履带式 AGV 小车的速度较慢，但可以承载更重的货物。
- ◎ **Structure**: Tracked AGV carts usually use chains or tracks as transmission devices, while wheeled AGV carts use wheels as moving parts.
- ◎ **Applicable environment**: Tracked AGV carts are suitable for various ground conditions, including uneven ground, muddy ground, etc. They can work in harsh environments such as factory workshops, warehouses, etc. Wheeled AGV carts are more suitable for driving on flat ground, such as offices, hospitals, etc.
- ◎ **Flexibility**: Tracked AGVs have less flexibility and a larger turning radius, making them unsuitable for working in narrow spaces. Wheeled AGVs are more flexible and can move freely in narrow passages and spaces.
- ◎ **Speed and efficiency**: Generally speaking, wheeled AGVs are faster and more efficient. Tracked AGVs speed are slower but can carry heavier cargo.

技术参数表 Technical parameter

总功率	Total power	50KVA
工作供电电源	Working power supply	三相五线制3X380V 50Hz 3-phase 5-wire system 3P, 380V, 50Hz
工作供电方式	Working power supply mode	卷缆供电 Coil cable power supply
设备重量	Machine weight	2500Kg
外形尺寸	Dimension	3000mmX1500mmX2400mm (待定)
机器人型号	Robot model	CRP2010A
焊接电源	Welding power source	奥太NBC500RP Plus Aotai NBC500RP Plus
视觉点云精度	Visual point cloud accuracy	0.1mm
视觉软件	Vision software	TracerStudio
行走驱动	Moving drive	舵轮式 Steering wheel type
操控方式	Operation type	遥控操控 Remote control
行走速度	Moving speed	2.2km/h
环境温度	Environment temperature	0℃~+45℃
相对湿度	Relative humidity	≤90%RH(无冷凝 non-condensing)

洲翔协作焊接机器人

ZHOUXIANG COLLABORATIVE WELDING ROBOT



更高效的自动化焊接解决方案 High efficiency automatic welding solutions

协作机器人倡导人机共融，相互支持。洲翔机器人为焊接应用赋能，凭借轻松示教、柔性化部署和高安全性等优势，有效地解决传统焊接熟练焊工匮乏、人力成本高的挑战，通过自动化焊接，为客户降本增效。

Cobot advocate human-machine integration and mutual support. Zhouxiang Robot empowers welding applications. With advantages of easy teaching, flexible deployment and high safety, it effectively solves problems of skilled welders shortage and high labor costs in traditional welding, reduces costs and increases efficiency by automatic welding.

设备概述 Overview

洲翔机器人自动化焊接工作站(气保焊)由Elfin系列协作机器人本体、焊枪、焊接系统等部件组成。其中，Elfin系列协作机器人本体具备一体化末端力控、一体化AI视觉、重复定位精度高等优势，配合激光视觉焊缝跟踪系统等，实现灵活拖拽、自动跟踪、自动纠偏等功能，支持长时间、不间断、高质量、高稳定性地进行焊接工作，主要为汽车零部件、工程机械、航空航天、船舶制造、金属加工等领域的自动化生产降本增效。

Zhouxiang Automatic Robot welding station (gas shielded welding) consists of Elfin series collaborative robot body, welding torch, welding system, etc. Among them, the Elfin series collaborative robot bodies have the advantages of integrated terminal force control, integrated AI vision, high repeat positioning accuracy, etc., with the laser vision tracking system, it can achieve flexible dragging, automatic tracking, automatic deviation correction, also support long-term, uninterrupted, high-quality and high-stability welding work, reduce costs and increase efficiency for automation production of automotive parts, engineering machinery, aerospace, shipbuilding, metal processing and other fields too.



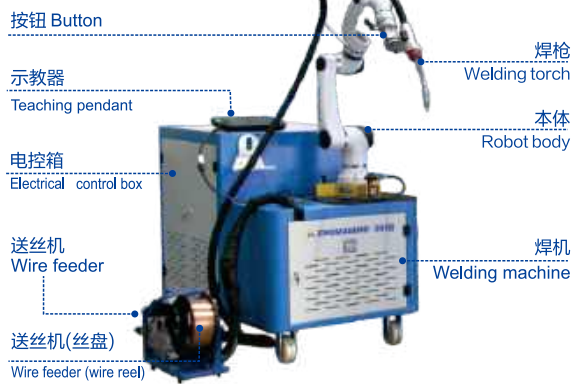
ROBOT Intelligent

特色应用 Featured Applications

- 1、拖拽示教: Elfin 支持一体化末端力控，用户能够轻松、快速地将焊枪拖拽到指定的目标焊点，并通过末端按钮快速建立焊接任务，完成圆形/线性路径选择及起弧/收弧设置，一次拖拽，可重复使用。
- 2、激光视觉焊缝跟踪: 通过激光视觉焊缝跟踪系统，实时纠正焊接偏差，让焊枪在运动过程中一直位于焊缝中心的位置，实现自动跟踪焊缝，提高焊接质量。
- 3、电弧跟踪: 电弧跟踪器可以与机器人配合，通过采集和处理电弧信号获得焊枪与坡口的相对位置，对机器人的规划路径偏差进行纠正。
- 4、易用好用的焊接插件: 洲翔机器人提供易于安装、易于使用的焊接插件，人性化操作界面，满足可视化、图形化操作需求，实现人机良性互动，提供生产效率。
- 5、满足多种焊接场景: 工作站支持任意焊接轨迹、拼接轨迹，满足马鞍形、圆形、墙角形、V形等多种焊接模式，能够覆盖绝大部分焊接应用场景。



设备配置 Configuration



- 1. Drag-and-Drop Teaching: Elfin supports integrated end force control. Users can easily and quickly drag the welding gun to the specified target welding point, and quickly establish welding tasks through the button at the end, complete circular/linear path selection and arc start/end setting, one drag, can be reused.
- 2. Laser visual weld tracking: Through the laser visual weld tracking system, the welding deviation is corrected in real time, so that the welding gun is always located at the center of the weld during the movement, automatic tracking of the weld is achieved, and the welding quality is improved.
- 3. Arc tracking: The arc tracker can cooperate with the robot to obtain the relative position of the welding gun and the groove by collecting and processing the arc signal, and correct the deviation of the robot's planned path.
- 4. Easy-to-use welding plug-in: Zhouxiang Robot provides easy-to-install and easy-to-use welding plug-in, humanized operation interface, meeting the needs of visualization and graphical operation, realizing benign human-machine interaction, and improving production efficiency.
- 5. Satisfy various welding scenarios: The workstation supports any welding trajectory and splicing trajectory, and satisfies various welding modes such as saddle, circle, corner, V-shaped, etc., which can cover most welding application scenarios.

技术参数表 Technical parameter

型号	E03	E05	E05-L	E10	E10-L	E12	E15
重量	18kg	25kg	26kg	43kg	45kg	70kg	60kg
有效负载	3kg	5kg	3.5kg	10kg	8kg	12kg	15kg
工作范围	590mm	800mm	950mm	1000mm	1300mm	1800mm	1300mm
功耗	100W典型应用	180W典型应用	180W典型应用	350W典型应用	350W典型应用	600W典型应用	600W典型应用
关节活动范围	J1、J4、J6: ±360°	J1、J4、J6: ±360°	J1、J4、J6: ±360°	J1、J4、J6: ±360°	J1、J4、J6: ±360°	J1、J4、J6: ±360°	J1、J4、J6: ±360°
	J2: ±135°	J2: ±135°	J2: ±135°	J2: ±135°	J2: ±135°	J2: ±135°	J2: ±135°
	J3: ±150°	J3: ±153°	J3: ±153°	J3: ±153°	J3: ±153°	J3: ±155°	J3: ±153°
	J5: ±147°	J5: ±180°	J5: ±180°	J5: ±180°	J5: ±180°	J5: ±180°	J5: ±180°
关节最大速度	J1-J4:180° /s	J1-J4:180° /s	J1-J4:180° /s	J1-J2:100° /s	J1-J2:100° /s	J1-J2:80° /s	J1-J2:80° /s
	J5-J6:200° /s	J5-J6:200° /s	J5-J6:200° /s	J3-J4:150° /s	J3-J4:150° /s	J3-J4:120° /s	J3-J4:120° /s
				J5-J6:180° /s	J5-J6:180° /s	J5-J6:150° /s	J5-J6:150° /s
工具最大速度(有效负载状态下)	2m/s	3m/s	3m/s	2m/s	2.5m/s	2.5m/s	2m/s
重复定位精度(有效负载、额定速度状态下)	±0.02mm	±0.02mm	±0.02mm	±0.03mm	±0.03mm	±0.05mm	±0.05mm

洲翔钢结构智能焊接方案

ZHOUXIANG INTELLIGENT STEEL STRUCTURE WELDING SOLUTION

该方案打通了钢结构从设计到自动化焊接生产的数据链，实现了小批量多品种的钢结构的全自动焊接。支持Tekla、Solidworks等主流三维设计软件的无缝衔接，利用工件模型自动计算焊缝信息；使用先进的三维视觉技术，自动识别、定位焊缝起点终点位置和包角位置，自动完成机器人的轨迹规划和编程，自动纠错、纠偏，整个过程无需过多的人工干预，免示教编程，实现钢结构生产焊接的自动化和智能化。

This solution connects the data chain from steel structure design to automatic welding production, realizes fully automatic welding of small batches and multi-type steel structures. It supports mainstream 3D design software such as Tekla and Solidworks, automatically calculates welding seam information by workpiece models; it uses advanced 3D vision technology to automatically identify and locate the start and end positions of seam and cover-angle positions, automatically complete trajectory planning and programming, automatically correct errors and deviations. The whole process does not require teaching programming, or excessive manual intervention, realizing automation and intelligence of steel structure welding.

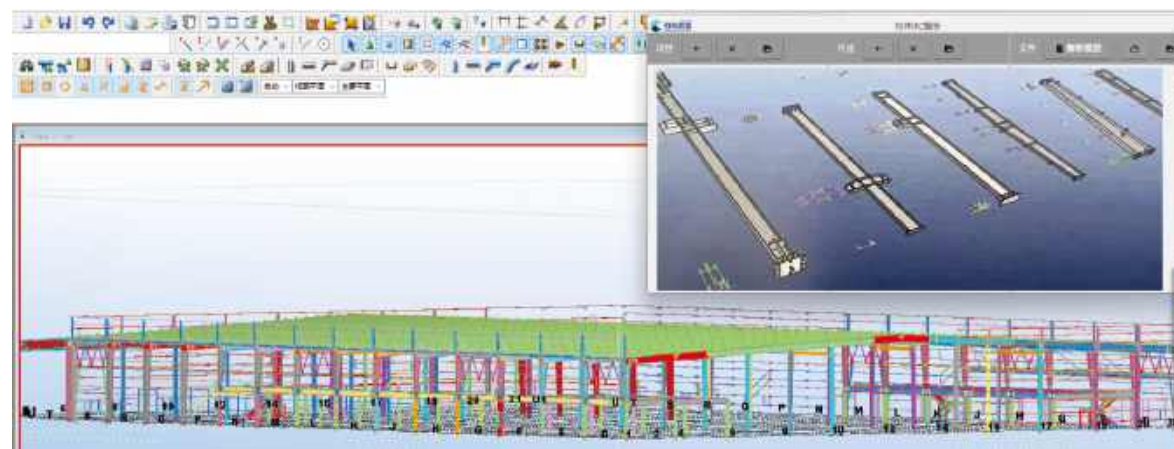
洲翔钢结构智能焊接解决方案主要特点

Main features of Zhouxiang Intelligent Steel Structure Welding Solution

► 01 一键拆图 One-click to disassemble drawing

支持行车梁、夹筋板、檩托板、牛腿、桥梁横隔板、船舶小组立等多种钢结构类产品的免示教焊接，同时具有TEKLA钢构厂房的一键拆图，方便单个构件导入机器人系统，方便快捷。

1. It supports teaching-free welding of various steel structures like crane beam, rib plate, purlin support plate, corbel, bridge diaphragm, ship-building parts, etc. It also has one-key disassembly of TEKLA steel structure workshop, easy to import single components into the robot system, which is convenient and fast.



ROBOT Intelligent

► 02 一键生成模型（免模型）

One-click to generate model (no model required)

大相机自动扫描，逆向建模，自动生成三维模型
3D camera automatically scans, reverse modeling, automatically generates 3D models

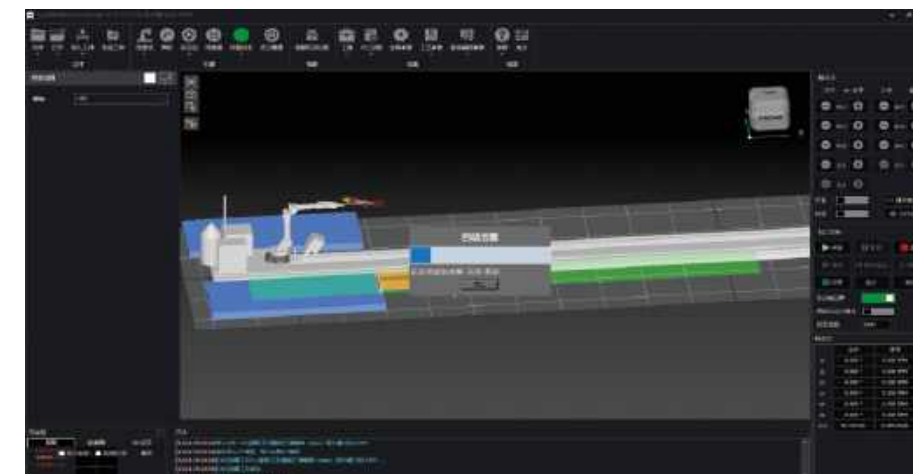


► 03-1

一键生成焊缝

One - click welding seam generation

具有丰富的焊接工艺数据库
Have rich welding process database



► 03-2

一键匹配工艺

One - click matching welding procedure

根据板厚自动匹配焊接工艺参数
Automatically match welding parameters and process according to plate thickness



洲翔钢结构智能焊接方案

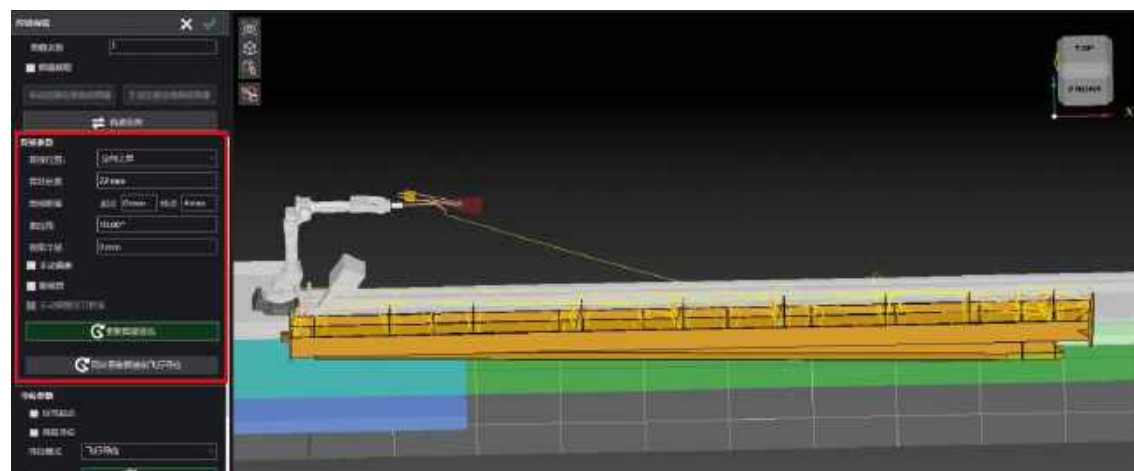
ZHOUXIANG INTELLIGENT STEEL STRUCTURE WELDING SOLUTION

► 04 自动规划 自动避障

Automatic path planning, automatic obstacle avoidance

不需要人工参与，自动排序（以机器人最短空移距离），支持自动规划路径，兼具碰撞检测和奇异点规避，自动生成焊枪焊接姿态。

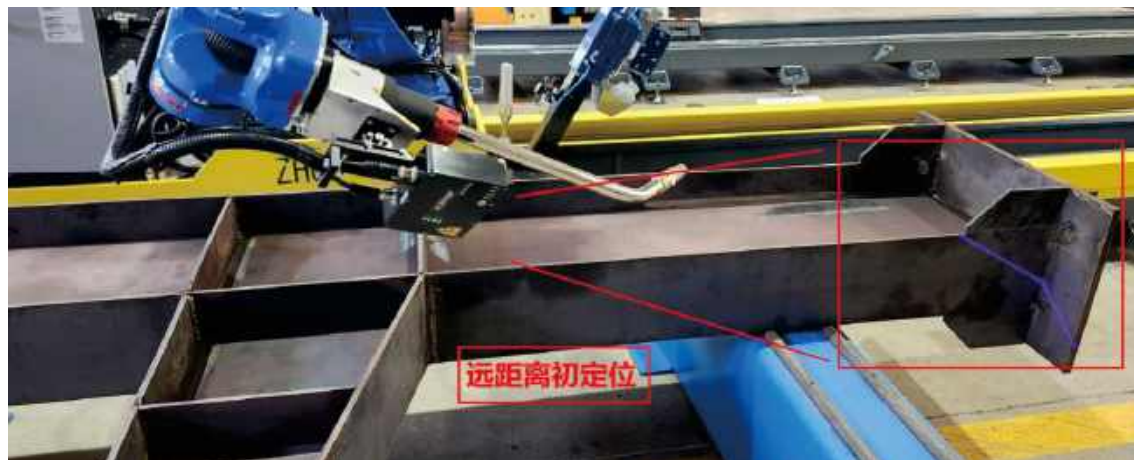
No need manual intervention, automatic sorting (based on the shortest robot moving distance), support automatic path planning, collision detection and singular point avoidance, automatic generating welding gun posture.



► 05 一键定位 One-click positioning

远距离（高视距）高速扫描初定位，可实现模型自动匹配工件，自动识别工件A、B面和工件首尾。

Long-distance (high viewing distance) can fast scanning of initial positioning, can realize automatic matching the model to the workpiece, automatically identify face A and B, heas and tail of workpiece.

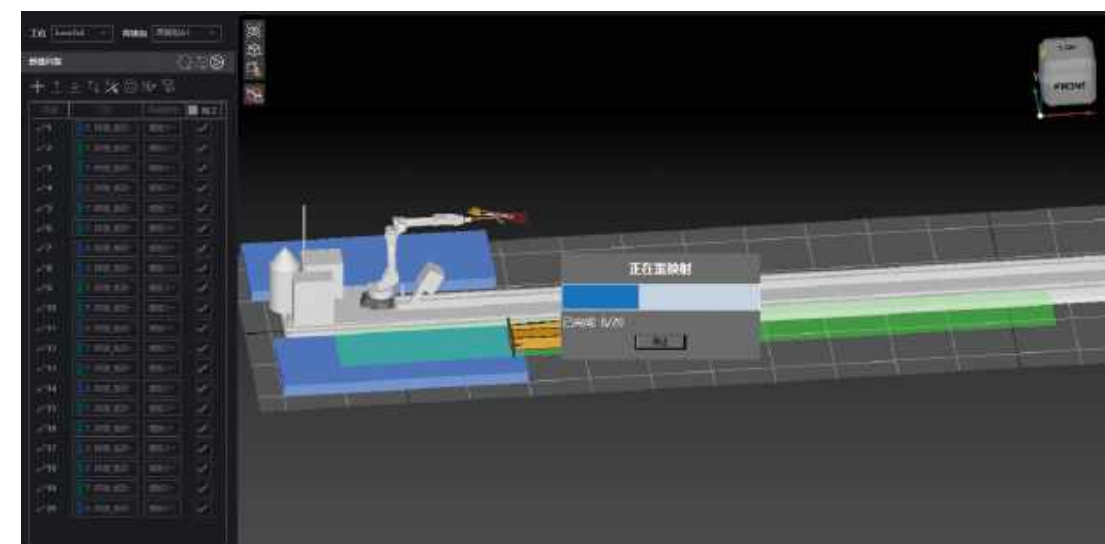


ROBOT Intelligent

► 06 一键焊接 One-click welding

初定位结束之后，重映射所有的焊缝和路径，然后开始焊接。

After initial positioning finished, remap all welding seams and paths, then start welding.



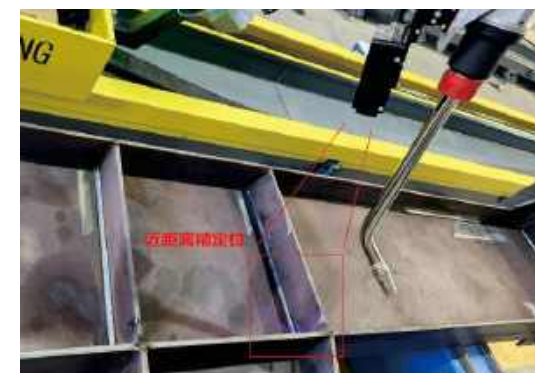
► 06-1

精定位

Precise positioning

近距离（低视距）精准定位纠正实际焊缝位置，保证焊道位置准确。

Close distance (low viewing distance) can accurate position and correct the actual welding position, ensure the weld position is accurate.



► 06-2

自动清枪

Automatic torch cleaning

支持自动清枪功能：设定焊接时长系统将自动进行清枪。

Support automatic torch cleaning function: set the welding time and the system will automatically clean the torch.



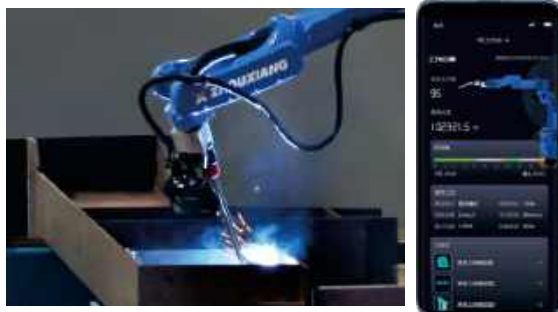
洲翔钢结构智能焊接方案

ZHOUXIANG INTELLIGENT STEEL STRUCTURE WELDING SOLUTION

06-3 智慧互联 Smart Connectivity

生产数据统计功能，支持手机小程序远程查看及远程MSE系统智慧互联。

Production data statistics function, support remote viewing via mobile app and remote MSE system smart interconnection.



07 数字孪生 Digital Twin

数字孪生技术，可以实时显示现场机器人轨迹、工作状态、焊接电流电压、速度等生产信息。

Digital twin technology, which can display on-site robot trajectory, working status, welding current, voltage, speed and other production information in real time.



特色功能 Features

自动标定 Automatic calibration

支持机器人TCP和相机手眼自动标定功能

Support robot TCP and camera hand-eye automatic calibration function.



ROBOT Intelligent

数字化工厂解决方案 Digital Factory Solutions

支持由MES下发焊接任务单，图纸和计划数直接发送至焊接工作站。焊接完成后MES同步获取生产进度。

Support welding tasks ordered by MES, drawings and plan numbers are directly sent to the welding station. After welding is completed, MES will synchronously obtain the production progress.



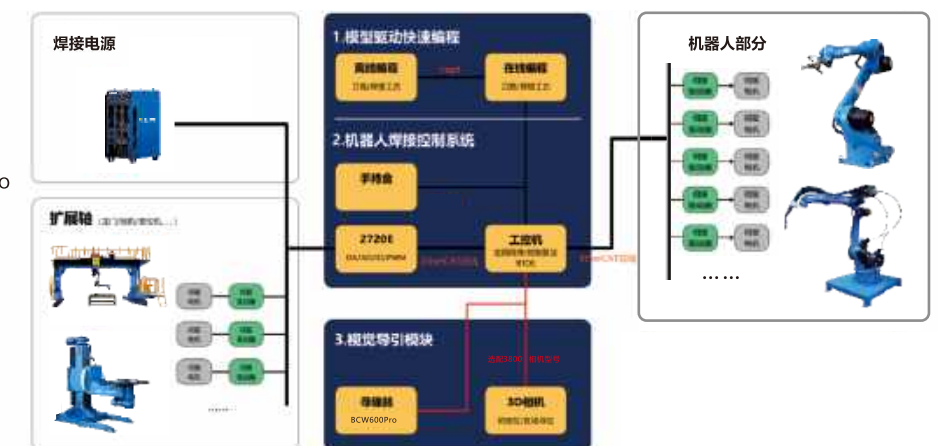
工具处理，
图纸直接导入
Tool processing, import of
drawings directly



MES

获取
生产进度
Get production
progress

推送任务到
工作站
Send tasks to
workstation



龙门式型钢激光二次加工线

GANTRY TYPE LASER SECONDARY BEAM PROCESSING LINE

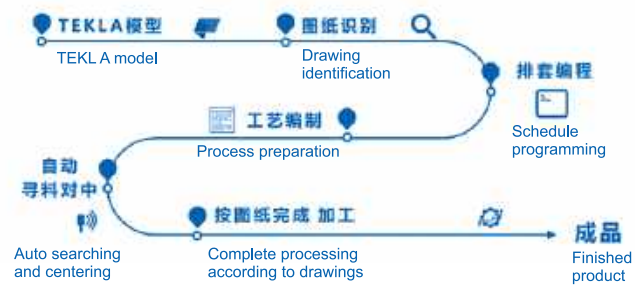
► 设备性能优势 Equipment performance advantage

- ◎ 型钢切断、切孔、刻字、开坡口、锁口、刻字、打标、划线一机搞定;
- ◎ 选用先进的柏楚FSCUT9200三维六轴五联动控制系统, 型钢自动寻边, 自动识别构件左右前后倾斜。
- ◎ 运用激光测量传感器精确测量, 具备精细孔切割工艺;
- ◎ 支持各种搭接形式坡口切割工艺;
- ◎ 支持TEKLA钢结构三维建模数据文件切割。
- ◎ 此产品的切割头为柏楚黑金刚切割头, 具有自动调焦、APP实时监控、同轴喷出辅助气体切割, 确保最佳切割质量。
- ◎ Section steel cutting, cutting holes, engraving, bevelling, locking, engraving, marking, scribing all in one machine.
- ◎ The advanced FSCUT9200 three-dimensional six-axis and five-linkage control system is selected, with automatic edge searching for steel profiles and automatic identification of left-right and front-back tilting of the components.
- ◎ Using laser measurement sensor to measure accurately, with fine hole cutting process.
- ◎ Supports various kinds of lap form bevel cutting process.
- ◎ Support TEKLA steel structure 3D modelling data file cutting.
- ◎ The cutting head of this product is the BOCHU black diamond cutting head, with automatic focusing, APP real-time monitoring, coaxial spraying of auxiliary gas cutting to ensure the best cutting quality.

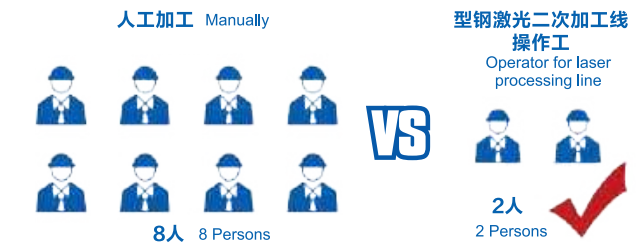


ROBOT Intelligent

► 作业流程图 Work flow chart



► 与传统人工加工对比 Compared with traditional manual processing



► 技术参数表 Technical parameter

项目 / 型号 Item / Model	ZX-FCM35240-20000W
有效切割幅面 Effective cutting range	3500 × 24000mm
X轴行程 X axis stroke	3500mm
Y轴行程 Y axis stroke	24000mm
Z轴行程 Z axis stroke	1000mm
H型钢最大切割宽度 H beam max cutting width	1200mm
H型钢最大切割高度 H beam max cutting height	500mm
H型钢最大切割长度 H beam max cutting length	24000mm
X/Y轴定位精度 X axis positioning accuracy	± 0.2mm
X/Y轴重复定位精度 X/Y axis positioning accuracy	± 0.05mm
X/Y/Z 最大速度 X/Y/Z max speed	50m/min
A轴摆动角度 A axis swing angle	± 90°
B轴摆动角度 B axis swing angle	± 90°
最大加速度 Maximum acceleration	0.5G
相数 Phase	3
电源规格 Power Specifications	380V/50HZ
总电源防护等级 Total power protection level	IP54
激光器功率 Laser power	20000W

► 龙门式优点 Gantry type advantage

- ◎ 机床双边齿轮传动动力更大、切割更平稳、精度更高;
- ◎ 双边齿轮传动条延长性更高, 切割幅面可以更大, 从而满足客户大幅面的个性化需求;
- ◎ Machine bilateral gear rack transmission is larger, cut stable, and higher accuracy;
- ◎ The bilateral gear rack is more extended, and the cutting surface can be larger, thereby meeting the personalized needs of customers' large type work-piece;

► 设备配置 Parameter Performance

- ◎ 激光发生器: 锐科
- ◎ 切割头: 波次BLT462P
- ◎ 切割软件及套料软件: 柏楚FSCUT9200
- ◎ 冷却系统: 汉立
- ◎ 机床主机: 洲翔
- ◎ Laser power: Raycus
- ◎ Cutting torch: Boci BLT462P
- ◎ Cutting software and nesting software: BOCHU FSCUT9200
- ◎ Cooling system: Hanli
- ◎ Main machine: Zhouxiang

► 参数性能 Parameter performance

- ◎ 适用场景: 型钢切断、切孔、开坡口、刻字、打标、划线
- ◎ 设备规格: ZX-FCM35240-20000W
- ◎ 工作平均效率: 12米H型钢 (600x200mm) 每小时可加工6+件
- ◎ Applicable scenarios: beam cutting, cutting holes, opening slopes, engraving, marking, scribing
- ◎ Equipment specifications: ZX-FCM35240-20000W
- ◎ Work average efficiency: 12 meter H beam (600x200mm) 6+ pieces can be processed per hour





焊接机器人可选配型号

Welding Robots Models

型 号 Model		MR10W-1440-D		MR08-1840		MR12-2010	
							
轴 数	No. of axes	6轴(axis)		6轴(axis)		6轴(axis)	
运动半径	Motion radius	1440mm		1840mm		2010mm	
有效载荷	Payload	10 KG		8KG		12KG	
防护等级	Protection level	J1、J2轴(axis)IP56 (J3、J4、J5、J6轴(axis)IP67)					
安装方式	Installation method	落地式 / 支架式 / 倒挂式 Floor standing / bracket standing / inverted hanging					
电源容量	Power capacity	4.5KVA					
输入/输出信号	Input/output signals	标配16进 /16出24VDC Standard 16 in /16 out 24VDC					
机器人重量	Robot weight	210KG		284 KG		313KG	
重复定位精度	Repeat positioning accuracy	± 0.05		± 0.05		± 0.05	
应用领域	Application area	焊接专用(气保、氩弧、激光、铝、不锈钢、碳钢) Welding exclusive (gas protection, argon arc, laser, aluminum, stainless steel, carbon steel)					
4轴 R(N.m)	4 axis R(N.m)	103.5		51.84		88.5	
5轴S(N.m)	5 axis S(N.m)	51.84		51.84		45.52	
6轴T(N.m)	6 axis T(N.m)	32.64		32.64		32.64	
内置气管	Built in hose	Φ10		Φ10		Φ10	
使用环境	Operating environment	温度0-45° C，湿度20-80% H(无结露)，振动加速度4.9m/S2(0.5G)以下，海拔1000m 以下 Temperature 0-45 ° C, humidity 20-80% H (without condensation), vibration acceleration below 4.9m/s2 (0.5G), altitude below 1000m.					
安装环境	Installation environment	其它，无引火性、腐蚀性气体、液体、无溅水，少油，粉尘，远离电碰源，远离磁场 No flammable or corrosive gases, liquids, no splashing water, less oil, dust, away from electrical sources, away from magnetic fields.					
运动参数	Motion parameters	运动范围(Motion range)	运动速度(Motion speed)	运动范围(Motion range)	运动速度(Motion speed)	运动范围(Motion range)	运动速度(Motion speed)
1轴	1 axis	± 167°	285° /s	± 160°	149° /s	± 165°	203° /s
2轴	2 axis	+80° ~ -145°	247° /s	+80° ~ -145°	125° /s	+80° ~ -145°	203° /s
3轴	3 axis	+145° ~ -75°	285° /s	+145° ~ -75°	149° /s	+145° ~ -75°	214° /s
4轴	4 axis	± 190°	392° /s	± 190°	314° /s	± 190°	392° /s
5轴	5 axis	+50° ~ -210°	272° /s	+50° ~ -210°	245° /s	+50° ~ -210°	276° /s
6轴	6 axis	± 220°	1353° /s	± 220°	1216° /s	± 220°	1356° /s

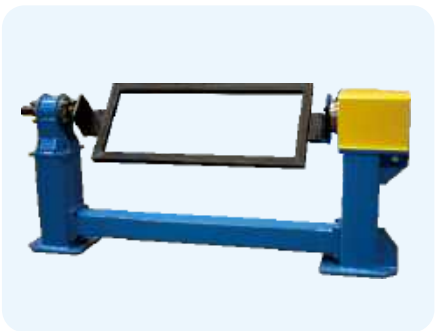


可兼容不同结构外部轴

Match Different Structures External Axis



P型双回转变位机
P-type double side rotate positioner



头尾式变位机
Head and tail welding positioner



L型变位机
L-type positioner



重型头尾式变位机
Heavy-duty head-tail positioner



升降式L型变位机
Lift type L-shaped positioner



水平回转台
Horizontal rotary table



重载头尾式变位机
Heavy load head and tail positioner



U型双回转变位机
U-type double side rotate positioner



重载L型变位机
Heavy load L-type positioner

配套附加设备

AUXILIARY EQUIPMENT

柏楚免示教视觉系统 Friendess Teaching Free Visual System

- ◎ CYPWELD-柏楚智能焊接系统 CYPWELD Friendess Intelligent Welding System
- ◎ FSWELD-智能焊接控制系统 FSWELD - Intelligent Welding Control System

控制系统构成

Control system composition

根据客户需求，快速响应，量身定制眼脑合一的智能焊接方案
Based on customer needs, respond quickly and tailor an intelligent welding solution that combines eyes and brain.



控制主机 Control host



CypWeld



转接板 Adapter board



无线手持盒
Wireless handheld box

寻缝器

Seam finder

眼-大小视野2合1相机，实现粗精定位一体
Eye-2-in-1 camera of larger and smaller views, achieving integrated coarse and fine positioning



电弧跟踪



眼脑合一的智能焊接方案

Intelligent welding scheme for eye & brain integration

脑：焊接控制系统
Brain: Welding Control System



眼：视觉引导
Eye: visual guidance



ROBOT Intelligent

柏楚免示教视觉系统 Friendess Teaching Free Visual System

离线编程优势 Offline programming advantages

传统离线编程 Traditional offline programming

将示教过程转移到离线软件中，不能解决示教上手难度大，调试时间长的的问题。

Transferring the teaching process to offline software cannot solve the problems of difficulty in getting started with teaching and long debugging time.



柏楚智能编程 Friendess Intelligent Programming

基于工件和 workstation 场景模型，内置焊接工艺包快速设置焊缝，配合自动避障算法快速生成焊接路径。

Based on the workpiece and workstation scene model, the built-in welding process package quickly sets the welding seam, and cooperates with the automatic obstacle avoidance algorithm to quickly generate the welding path.



- ◎ 变位机与机器人协同：设置焊缝焊接位置，算法计算最适合机器人焊接的变位机角度；Positioner and robot cooperate: set the welding position of the weld, and the algorithm calculates the positioner angle that is most suitable for robot welding;
- ◎ 焊枪姿态调整：根据焊接专家库，设置焊缝推拉角范围，遇到拐角位置自动规避；Welding torch posture adjustment: Set the push-pull angle range of the weld seam according to the welding expert database, and automatically avoid corners when encountering them;
- ◎ 空移路径规划：软件自动生成避障空移路径；Air shift path planning: The software automatically generates obstacle avoidance air movement paths;
- ◎ 现场程序修改：自研机器人控制系统，内含路径规划包，现场可二次规划。On-site program modification: Self-developed robot control system, including path planning package, can be re-planned on-site.

特色功能 Special feature

数字孪生 Digital twin

- ◎ 利用数字孪生技术，在计算机中构建孪生焊接工作站；Use digital twin technology to build a twin welding workstation in the computer;
- ◎ 3D模型数据解析，焊缝自动提取；3D model data analysis and automatic extraction of welds;
- ◎ 工件模型焊接工艺调整；Workpiece model welding process adjustment;
- ◎ 路径避障。Path avoidance.



参数化建模 Parametric modeling

- ◎ 针对常用牛腿；For commonly used steel corbels;
- ◎ 软件自带参数化模型功能；The software comes with parametric model function;
- ◎ 不依赖 Tekla 模型；Not dependent on TEKLA model;
- ◎ 复杂牛腿依然可以从 Tekla 模型导入。Complex corbels can still be imported from TEKLA models.



全自动标定保证机器人的精度

Fully calibrate to ensure the accuracy of the robot



包角工艺

Corner wrapping process



智慧互联

Wisdom interconnection



适合构件

Suitable component



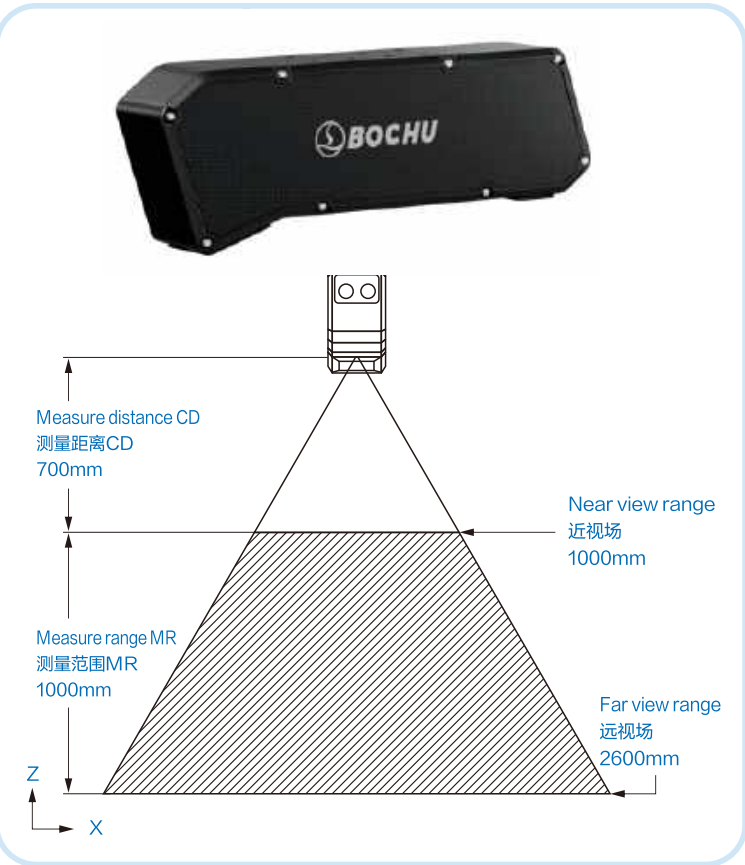
屋面梁，吊车梁，箱型柱，牛腿，铁塔角
Roof beam, crane beam, box column, corbel, iron tower corner

配套附加设备
AUXILIARY EQUIPMENT

▶▶ 3800大线扫立体相机 3800 large line scan stereo camera

▶ 无图纸加工优势 Advantages of processing without drawings

- 无需编程无需示教，无需图纸，真正意义上的从点云到三维模型的逆向建模，根据生成模型可以自动避障、自动寻位。自动生成焊缝焊接。实现针对无图纸的工件进行批量加工，同批工件只需建模一次。
- 支持直线、圆弧、曲线；平焊、立焊加工；对于常见的钢结构方面的H型钢(等截面变截面、牛腿)、板单元、隔板工件有完善的解决方案，T型台、U型肋、管拼件也可应对；自动根据重建板厚匹配焊接工艺。
- No programming, no teaching, no need drawings, true reverse modeling from point cloud to 3D model, automatic obstacle avoidance and automatic positioning according to the generated model. Automatically generate weld seam. Batch processing of workpieces without drawings is realized, and the same batch of workpieces only needs to be modeled once.
- Support straight lines, arcs, curves; flat welding and vertical welding; there are complete solutions for H-shaped steel (equal section, variable section, corbel), plate units, and partition workpieces in common steel structures, and T-type steel, U-shaped ribs, and pipe assemblies can also be handled; the welding process is automatically matched according to the plate thickness.



▶ 技术参数表 Technical parameter

检测速度	Detection speed	3m/s
检测精度	Detection precision	± 5mm
近视场	Near view range	1000mm
远视场	Far view range	2600mm
测量范围 (MR)	Measuring range (MR)	1000mm
扫描帧率	Scanning frame rate	400fps
激光安全等级	Laser safety class	Class 3B
重量	Weight	1.6kg
工作温度	Working temperature	0~45°
工作湿度	Working humidity	20%~85%RH 无凝结 (non-condensing)
扫描速度	Scanning speed	200mm/s

ROBOT Intelligent

▶▶ 纳博特焊接跟踪系统 INEXBOT welding tracking system

▶ 设备性能优势 Equipment performance advantages

纳博特 C1201 控制器内置多网口、数字输入/输出端口、RS485/232 COM 接口以及 CAN 接口，方便用户与设备连接。C1201增加超级电容+管理IC，当外部掉电后可提供10s供电时间。

纳博特自主研发的控制算法，可以支持串联多关节、并联多关节、SCARA、直角坐标、连杆结构等标准构型机器人，还可定制开发特种结构多关节机器人。

目前纳博特已经具备弧焊、氩弧焊、激光焊等多种通用工艺，并可根据用户需求进行定制工艺开发。纳博特运控平台集逻辑控制、运动控制、视觉系统和深度学习于一体。

INEXBOT C1201 controller has built-in multiple network ports, digital input/output ports, RS485/232 COM interface and CAN interface, which is convenient for users to connect to the equipment. C1201 adds super capacitor + management IC, which can provide 10s power supply time when the external power is off.

The control algorithm independently developed by INEXBOT can support standard configuration robots such as serial multi-joints, parallel multi-joints, SCARA, rectangular coordinates, and connecting rod structures, and can also customize and develop special structure multi-joint robots.

Currently, INEXBOT has many common processes such as arc welding, argon arc welding, laser welding, etc., and can develop customized processes according to user needs. INEXBOT's operation and control platform integrates logic control, motion control, visual system and deep learning.



▶ 特色功能 Special feature

- 开放通讯协议多品牌焊机适配：奥太、麦格米特等；
- 支持多组焊接工艺参数，现场灵活调用；
- 断弧/灭弧回抽防粘丝；
- 断弧再启动，断点执行；
- 模拟焊机多段匹配；
- 飞行起弧；
- 摆焊：正弦摆、Z字摆、L形摆、8字摆、圆形摆、外部轴定点摆；
- 鱼鳞焊、相贯线工艺；
- 多层多道焊接工艺；
- 起弧、收弧渐变，焊接途中实时更改电流电压；
- 根据选中板材智能推荐合适电流电压。
- Open communication protocol, compatible with welding machines of multiple brands: Aotai, Megmeet, etc.
- Support multiple sets of welding process parameters, flexible on-site call;
- Arc breaking/arc extinguishing, anti-sticking wire withdrawal;
- Arc breaking and restarting, breakpoint execution;
- Simulation welding machine multi-segment matching;
- Flying arc starting;
- Pendulum welding: sine pendulum, Z-shaped pendulum, L-shaped pendulum, 8-shaped pendulum, circular pendulum, external axis fixed-point pendulum;
- Fish scale welding, intersecting line process;
- Multi-layer and multi-pass welding process;
- Arc starting and arc ending gradient, real-time change of current and voltage during welding;
- Intelligent recommendation of appropriate current and voltage according to the selected plate.