SIASUN 新松

新松中厚板焊接套机系统

SIASUN Medium-Thick Plate Welding System

超凡品质 · 轻松焊接 · 经济实用 · 您最得力的焊接帮手

Precision Engineering · Smart Welding · Cost-effective Design · Your Ultimate Production Partner.

新松焊接机器人系统
SIASUN Welding Engineer System

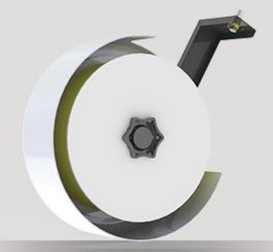
控制器Controller

示教器Teach pendant

焊枪Welding torch
GL500N-500I
TRM602WHD

焊机Welding machine
Dex2 500MPR

送丝机Wire feeder



送丝盒Wire box

以SR系列工业机器人为主体，搭载新型智能焊接控制系统，为您打造专属焊接设备，助您轻松实现焊接自动化。

SIASUN SR-series robot equipped with a new intelligent welding control system,creating exclusive welding equipment for you to easily achieve welding automation

焊机参数
Welding machine parameters

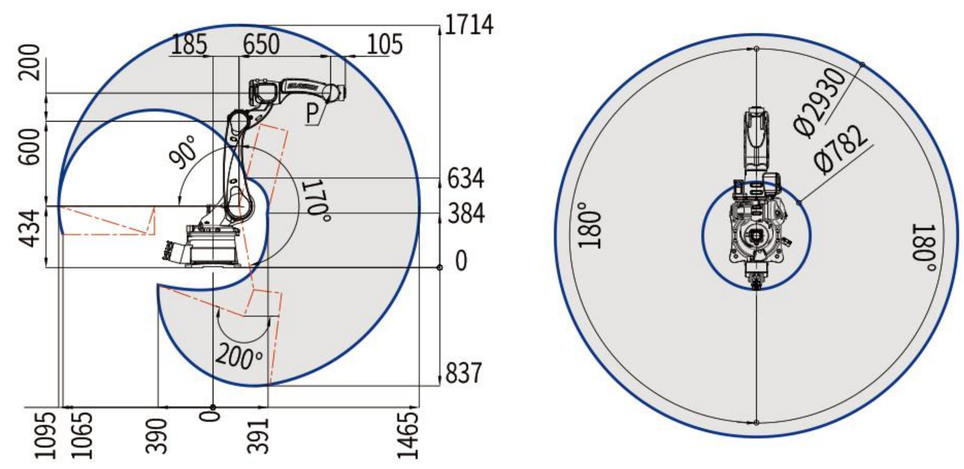
焊机型号Model	Dex2 500MPR		
额定输入容量 Rated input capacity	23.3kVA/21.4KW	参数通道存储 Parameter channel storage	50
额定输出电流 Rated output current	500A	循环式冷却水箱 Recirculating cooling tank	Anycool-66
额定输出电压 Rated output voltage	39V	额定功率Rated power	370W
额定负载持续率 Rated duty cycle	直流DC100%@450A	额定电压Rated voltage	380Vac
	脉冲Pulse100%350A	工作温度Temperature	-10°C~40°C(焊接电源-39°C可启机) Welding power supply can be started at -39°C
空载电压 No-load voltage	77V	外观尺寸Size	L*W*H (mm) 647*291*572
功效Efficiency	91%@500A	重量Weight	40kg
输出特性 Output characteristic	CV	外壳防护等级 Shell protection level	IP23 S
送丝速度 Wire feeding speed	0.5-28m/min	冷却方式Cooling method	气冷/水冷Air cooled/Water cooled.
功率因数Power factor	0.92	冷却水流量 Cooling water flow rate	3.5L/min
绝缘等级 Insulation level	H	冷却水容量 Cooling water capacity	6.8L

工业机器人
Industrial robot

新松“焊接工程师”系列工业机器人，专为焊接领域定制设计！
流线型外观、高刚性轻量化的机身配合强劲的驱动力，实现极致速度精度。高质量硬件配置与超高性价比的完美融合，带给您稳定、高效、可靠的使用体验！
The SIASUN SR series industrial robots are specially designed for the welding field.
Streamlined appearance,high rigidity and lightweight body,combined with strong driving force,achieve ultimate speed and accuracy.

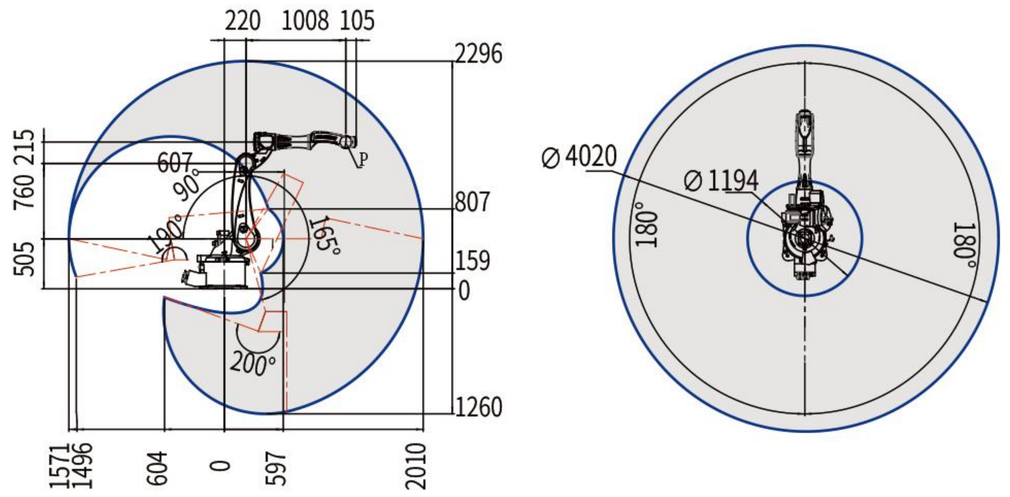
			
型号Type		SR12A-12/1.46	SR25A-12/2.01
负载能力Max payload		12kg	12kg
重复定位精度Repeatability		±0.03mm	±0.07mm
最大工作半径Max.reach		1465mm	2010mm
运动范围 Motion Range	J1	±180° *	±180°
	J2	+90°，-170°	+90°，-165°
	J3	+150°，-90°	+160°，-85°
	J4	±180°	±180°
	J5	+145°，-160°	+145°，-160°
	J6	±360°	±360°
最大运动速度 Maximum Speed	J1	200°/s	200°/s
	J2	200°/s	220°/s
	J3	220°/s	220°/s
	J4	400°/s	400°/s
	J5	430°/s	430°/s
	J6	720°/s	720°/s
手腕允许力矩 Moment	J4	23N·m	23N·m
	J5	20N·m	20N·m
	J6	9N·m	9N·m
手腕允许惯量 Inertia	J4	0.4kg·m²	0.4kg·m²
	J5	0.38kg·m²	0.38kg·m²
	J6	0.1kg·m²	0.1kg·m²
本体重量Weight		130kg	250kg
防护等级(腕部)Protection(wrist)		IP65	IP65
走线方式Wiring method		内置走线built-in wiring	

SR12A-12/1.46



*侧装时J1轴运动范围为±30°

SR25A-12/2.01



焊接应用功能介绍
Welding Fuction

位置点传感检测功能
Position Sensing Detection Function

接触传感检测功能

主要包含三方向传感、起始点检测、终点检测、圆弧传感、接触探测传感等功能。保证焊接过程不受工件的来料加工、组对拼焊和焊接装夹定位带来的焊缝位置有偏差的影响，自动寻找焊缝位置，保证能够顺利准确的焊接。接触传感检测是通过焊丝、喷嘴或探针接触工件，感知工件位置来实现的，使用起来操作简单方便，不需要其他传感装置，从而增加焊枪灵活性。具有精度高、可达性好等优点。

Contact Sensing Detection Function: This primarily encompasses three-directional sensing, start point detection, end point detection, arc sensing, and contact probe sensing functionalities. It ensures that the welding process remains unaffected by deviations in weld seam positioning due to material preparation, assembly and fit-up welding, or clamping during welding setup. By automatically seeking out the weld seam location, it guarantees smooth and accurate welding. Contact sensing detection is achieved by the wire, nozzle, or probe coming into contact with the workpiece to sense its position. It is straightforward to operate and does not require additional sensing devices, thereby enhancing torch flexibility. Boasting high precision and excellent accessibility, this feature offers significant advantages.

三方向传感：

三方向传感功能通常对工件进行 x 、 y 、 z 三个方向的传感，在工件发生偏移时，机器人可以对焊接轨迹进行检测并作出相应的调整。

Three-dimensional Sensing: The three-directional sensing function typically senses the workpiece in three axes: x, y, and z. When the workpiece shifts, the robot can detect the deviation in the welding path and make the necessary adjustments accordingly.


1

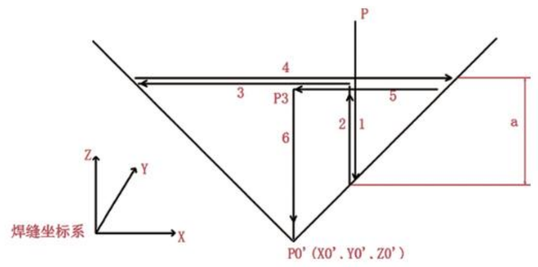

2


3


4

起始点（终点）检测：

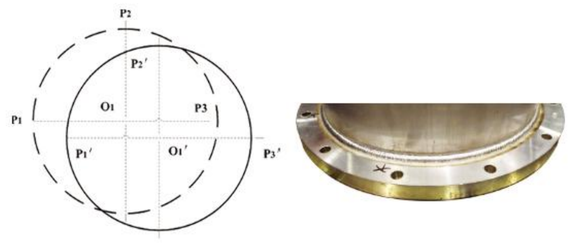
当焊接工件在一定范围内发生偏移时，可以通过起始点（终点）检测功能重新锁定正确的工作起始点（终点）。起始点（终点）检测功能对角焊缝、对接坡口等类型焊缝均试用。



Start (End) Point Detection: When the welding workpiece shifts within a certain range, the start (end) point detection feature can be utilized to re-anchor the correct starting (ending) point for the task. This start (end) point detection function is applicable to various types of weld seams, including fillet welds and butt joint grooves.

圆弧传感：

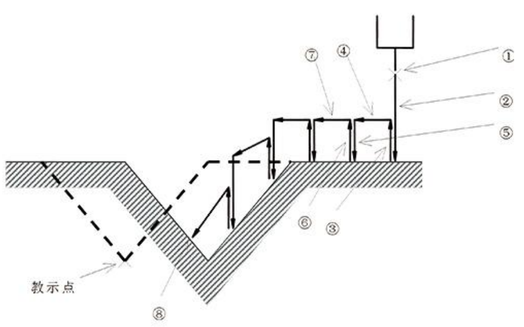
圆弧传感功能适用于圆弧形工件，通过焊丝接触工件检测出工件的实际位置与示教位置偏差量，机器人将数据处理后对原焊接轨迹进行纠正调整。机器人通过2组数据的对比，自动规划生成新的焊接轨迹，完成偏移工件的自动化焊接。



Arc Sensing: The arc sensing function is tailored for workpieces with curved or arc-shaped profiles. It involves using the wire's contact with the workpiece to detect any deviation between the actual position of the workpiece and the taught position. Once this data is processed by the robot, it adjusts the original welding path accordingly. By comparing two sets of data, the robot automatically devises a new welding trajectory, thereby enabling the automated welding of misaligned workpieces.

接触探测传感：

接触探测传感功能可以检测坡口位置。利用接触探测传感，找到焊缝大致位置，根据具体需求，结合其他检测方式进行起点和焊缝位置的准确定位



Contact Probing Sensing: The contact probing sensing function facilitates the detection of groove positions. By employing contact probing sensing, the general location of the weld seam is identified. Subsequently, in accordance with specific requirements, it integrates with other detection methods to precisely locate both the starting point and the weld seam position.

非接触传感检测功能

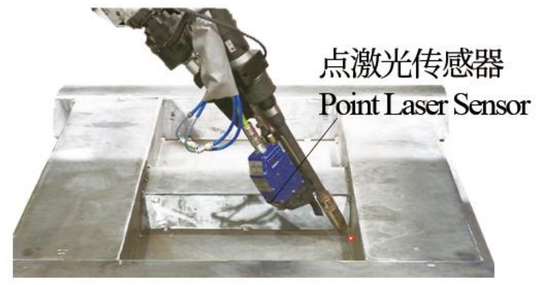
非接触式传感检测通常利用点激光或线激光传感器为工具，机器人通过传感器检测工件在检测坐标系下X、Y、Z的位置数据，再结合工件特点和焊缝类型，确定焊缝的起始点和终点位置。与接触式传感相比，该种检测手段可适用于焊缝位置偏差更大的情况，且检测结果不受焊丝弯曲、伸出长度不一致等因素的影响。

Non-Contact Sensing Detection Function: Non-contact Sensing Detection typically employs point or line laser sensors as tools, where the robot, through these sensors, detects the workpiece's positional data in the X, Y, and Z axes within the inspection coordinate system. This information, combined with an understanding of the workpiece's characteristics and weld seam type, is then used to determine the starting and ending points of the weld seam. In comparison to contact sensing, this method is capable of accommodating greater deviations in weld seam positioning and is not influenced by factors such as wire bending or inconsistent extension length.

点激光传感检测：

在焊枪周围安装点激光传感器，再通过对点激光设备的标定，确定传感器与焊枪TCP点的相对位置关系。机器人可以通过传感器的数据对焊接起点终点进行调整和优化。

Point Laser Sensing Detection: By installing a point laser sensor around the welding torch and calibrating the point laser equipment, the relative positional relationship between the sensor and the welding torch's TCP (Tool Center Point) is established. The robot can then leverage sensor data to adjust and optimize the welding start and endpoints.



线激光传感检测：

在焊枪上安装线激光传感器，在机器人执行焊接程序时，首先利用线激光传感器对起点区域进行扫描，机器人通过线激光传感器获取焊缝起点的位置信息，根据焊缝的类型自动定位焊接起始点的准确位置。

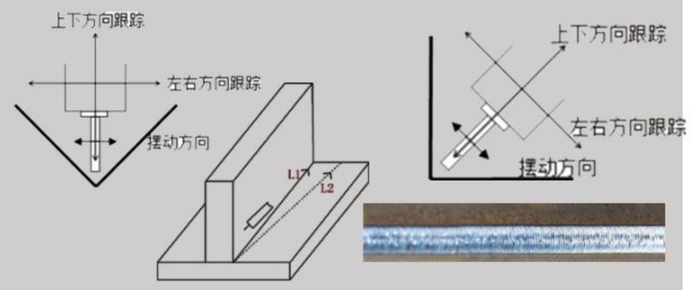
Line Laser Sensing Detection: Equipping the welding torch with a line laser sensor, when the robot executes the welding program, it initially employs the line laser sensor to scan the starting area. The robot acquires the positional information of the weld seam's starting point via the line laser sensor, and based on the weld seam type, it automatically determines the precise location of the welding starting point.

焊缝跟踪功能
Seam Tracking Function

电弧跟踪功能

当实际的焊缝轨迹偏离示教程序轨迹或工件在焊接过程中工件发生热形变时，机器人通过焊接过程的数据搜集处理，实时修正补偿运行轨迹，确保焊枪末端运行轨迹始终在焊缝上。

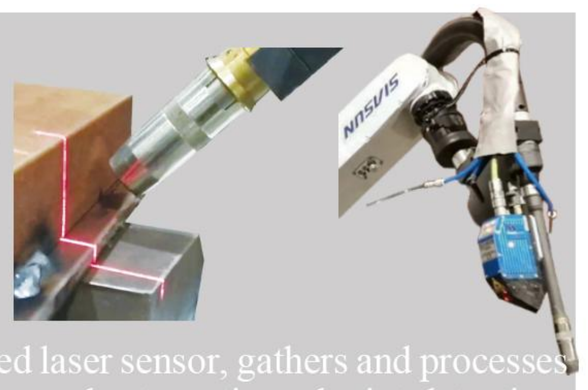
Arc Tracking Function： In instances where the actual weld seam trajectory deviates from the taught program path or the workpiece undergoes thermal deformation during welding, the robot collects and processes data from the welding process in real-time, adjusting and compensating the running path accordingly. This ensures the welding torch's tip consistently follows the weld seam.



激光跟踪功能

当焊缝位置发生偏移时，机器人通过前置激光传感器，对焊缝位置数据进行搜集和处理，实现在焊接过程实时的对运动轨迹进行修正，并且能够自动进行终点检测。线激光可以对角焊缝（含或不含坡口）、对接焊缝（含或不含坡口），搭接焊缝、立焊缝，仰焊位置焊缝进行跟踪和修正，满足全位置焊接的跟踪。

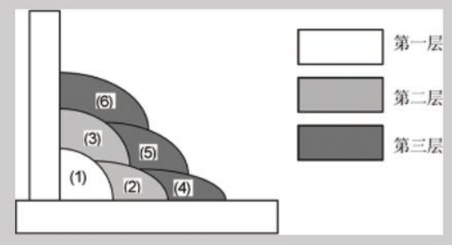
Laser Tracking Function: In the event of weld seam displacement, the robot, utilizing a forward-mounted laser sensor, gathers and processes weld seam position data. This enables real-time correction of the motion path during the welding process and automatic endpoint detection. Line lasers can track and adjust for fillet welds (with or without bevel), butt welds (with or without bevel), lap welds, vertical welds, and overhead weld positions, catering to full-position welding tracking requirements.

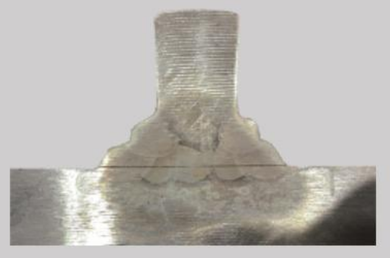


多道焊功能
Multi-Pass Welding Function

多层多道焊功能可以和其他如接触传感检测功能以及焊缝跟踪功能等结合起来使用。通过接触传感检测功能和焊缝跟踪功能，将第一层焊接时获取的工件信息记录下来。经过系统整理计算，将结果直接作用于第二层及以后的焊接中，保证焊接质量。同时焊接工艺的设定，焊枪姿态的调整可以被应用于每一层的焊接中。多重方法来保证焊接质量，为客户带来满意的焊接效果。

This multi-layer and multi-pass welding capability can be integrated with other functions such as contact sensing detection and weld seam tracking. By leveraging contact sensing detection and weld seam tracking, information about the workpiece gathered during the initial layer's welding is recorded. After systematic processing and calculation, this information is directly applied to subsequent layers, ensuring welding quality. Meanwhile, the welding process parameters and torch orientation adjustments can be consistently applied across every layer. Employing multiple strategies to guarantee welding quality, this approach delivers satisfactory welding outcomes to customers.

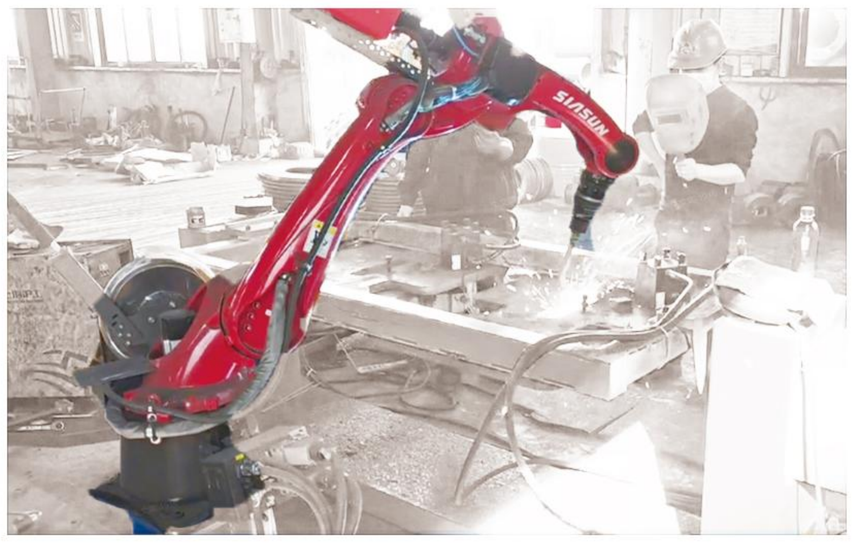


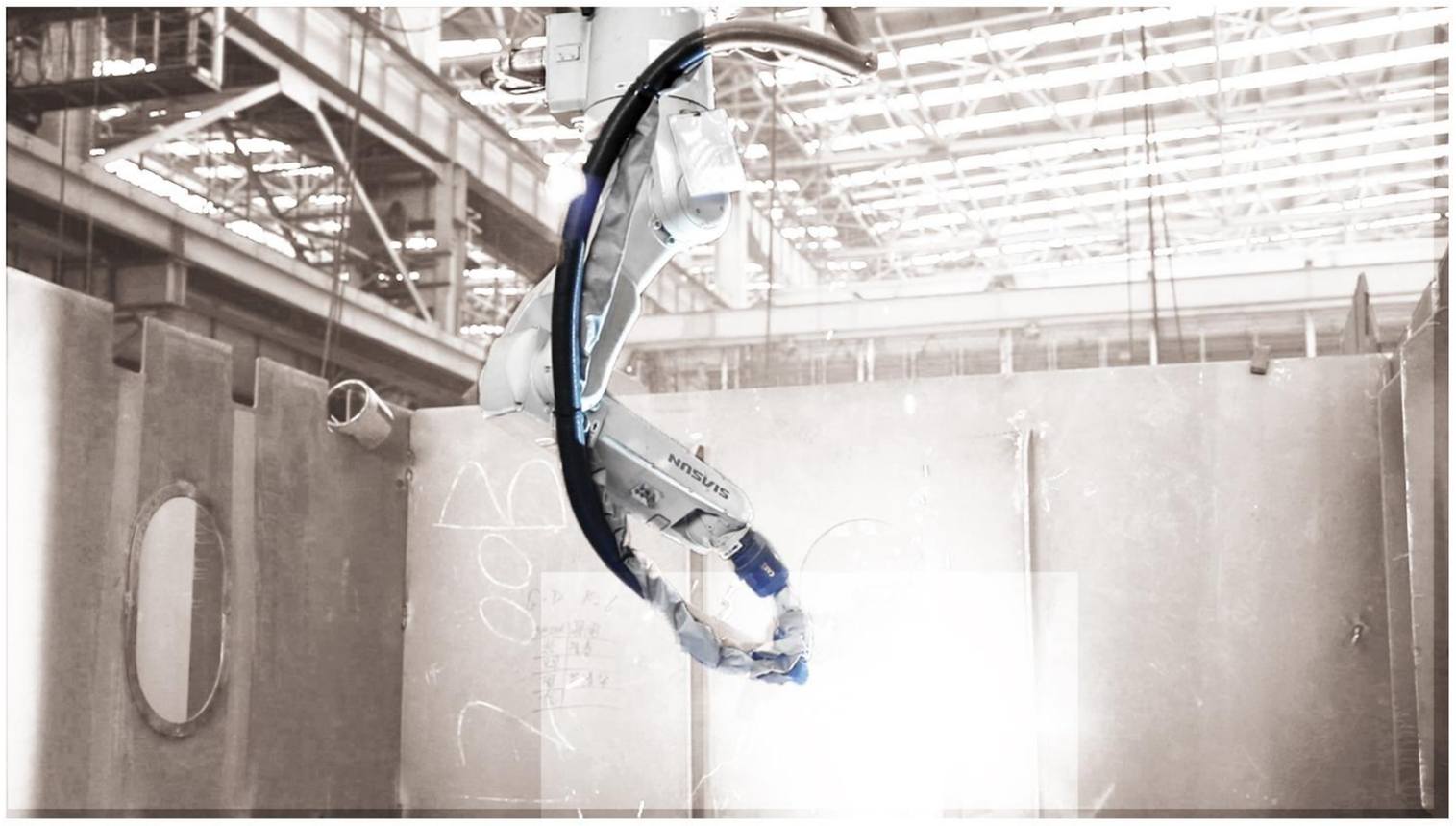


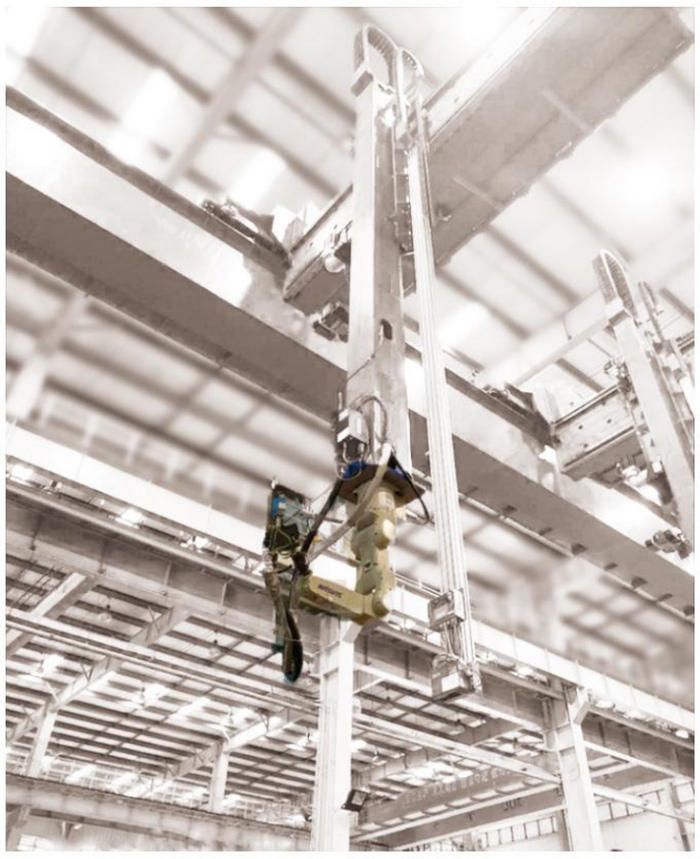
典型案例
Application

新松中厚板焊接机器人已在多个焊接领域取得成功经验。新松智能焊接系统作为一个灵活、独立的焊接加工单元给大批量、高质量进行流水线的设备制造提供了有利保障，让高柔性化的短时弹性生产也成为可能。

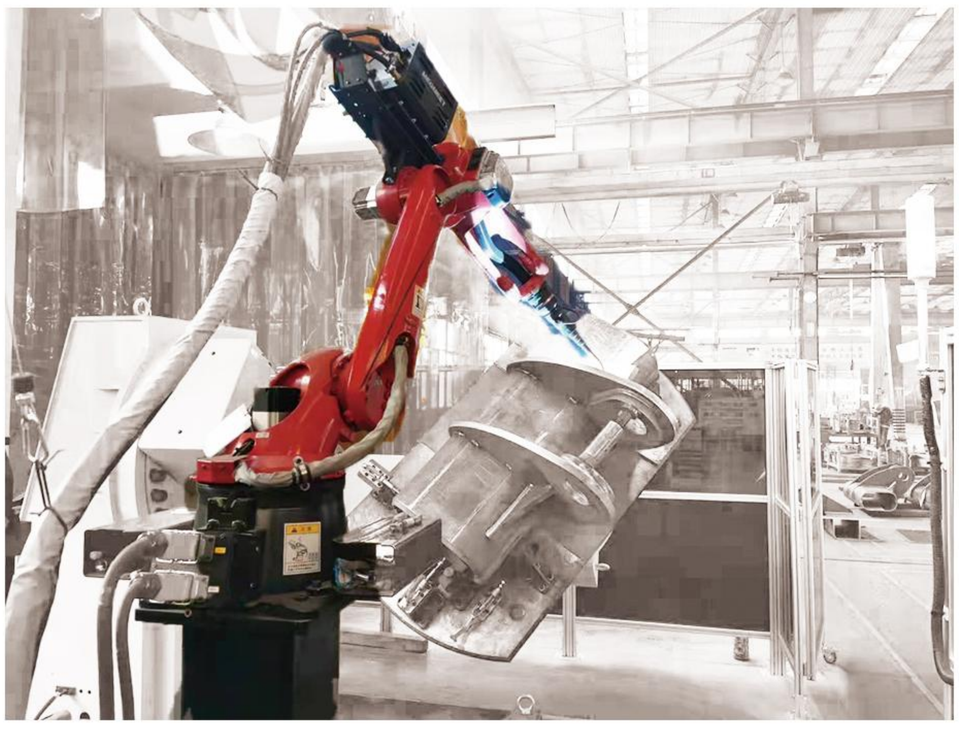
SIASUN Medium-Thick Plate Welding Robots have achieved successful applications across multiple welding fields. As a flexible and standalone welding processing unit, the SIASUN Smart Welding System provides a reliable foundation for high-volume, high-quality assembly-line equipment manufacturing, while also enabling highly flexible short-term elastic production.

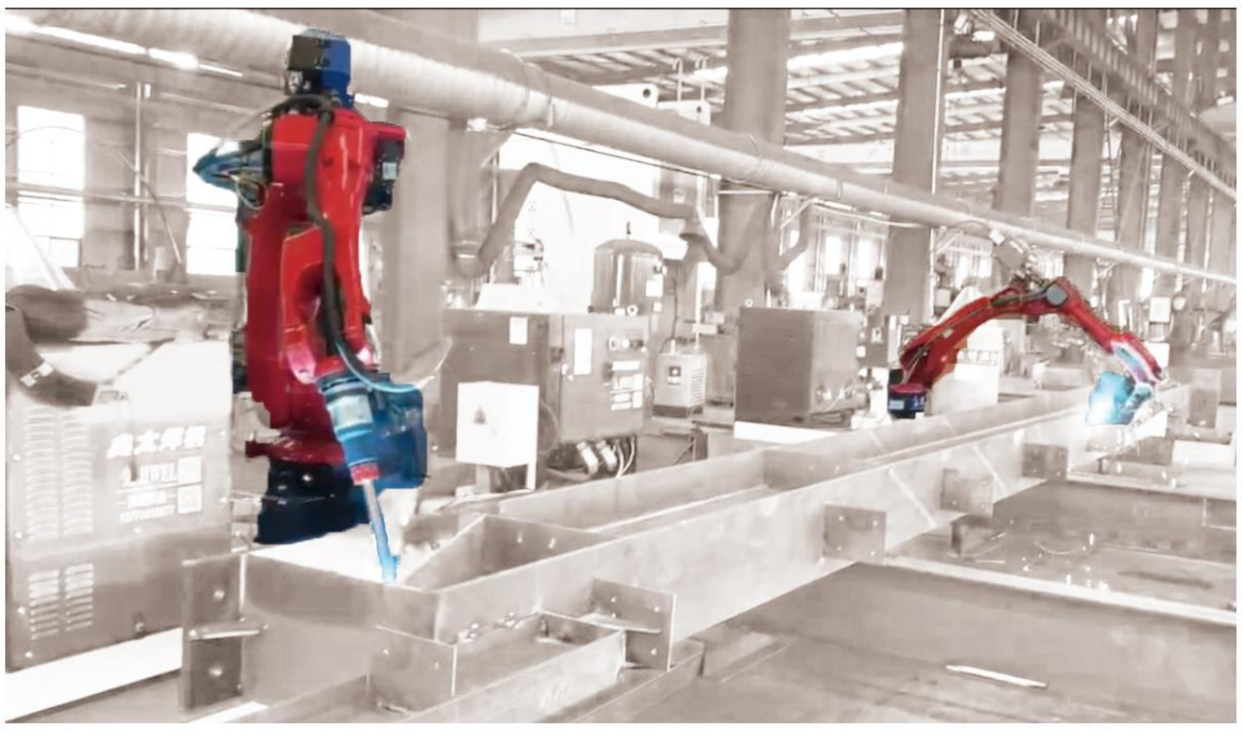


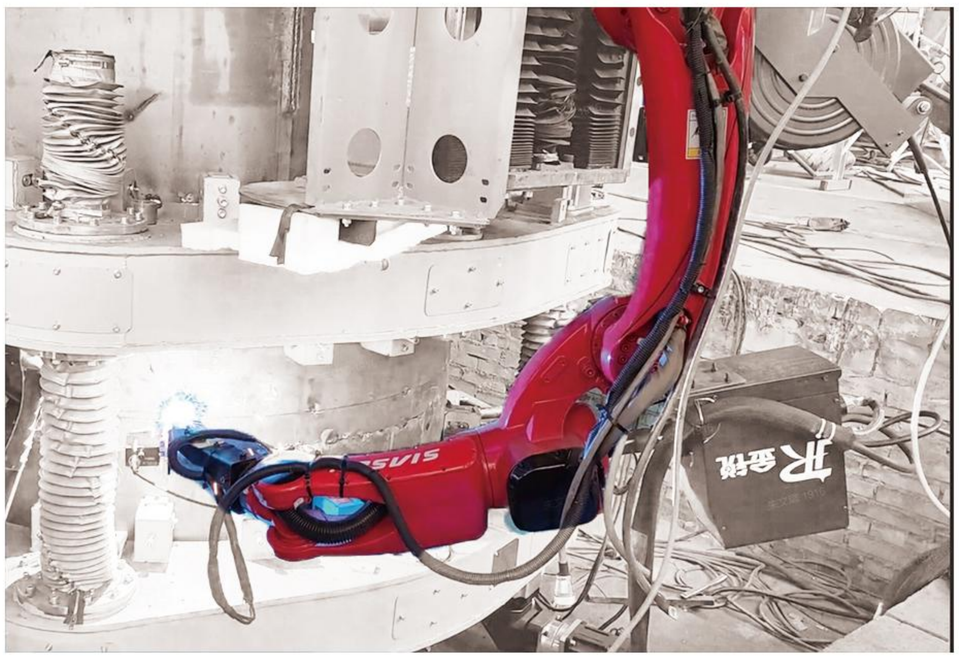


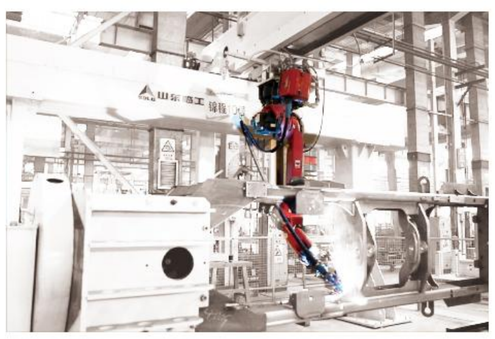


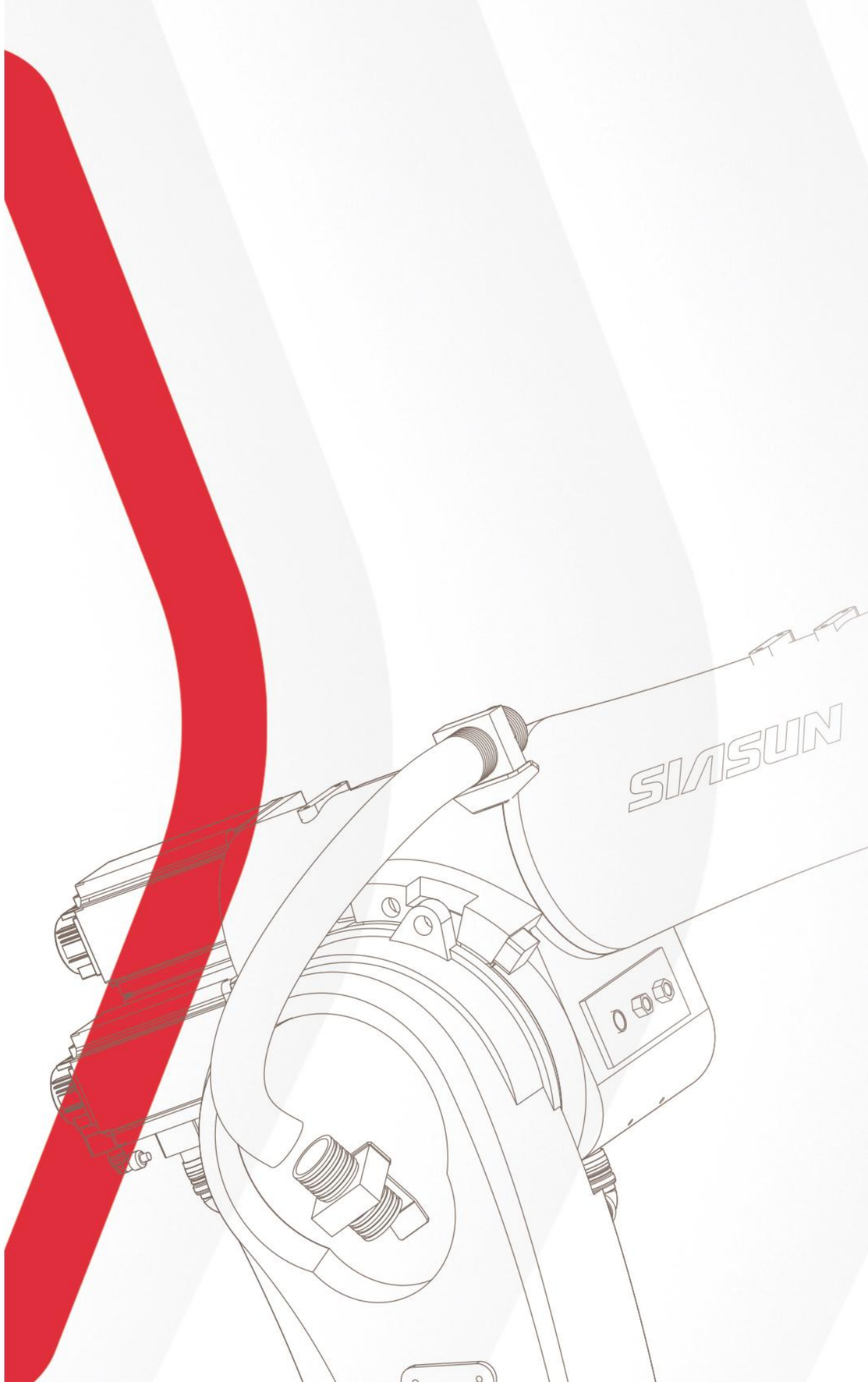
典型案例
Application











SIASUN

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