全球办事处 GLOBAL OFFICE

精益求精 让用户满意

400+
售后技术人员
After Sales Technicians

99%
售后人员到位率
Availability Of After-Sales Personnel（24H）

99.5%
售后人员到位率
Availability Of After-Sales Personnel（48H）

20+
国外办事处
Overseas Offices

55+
国内办事处
Domestic Offices

全E控A-RG气+微

广州、徐州、诸暨、襄阳、沧州、温岭、青岛、南京、江门、常州、嘉兴、郑州、邢台、台州、烟台、东莞、重庆、天津、温州、潍坊、汕头、南通、泉州、成都、滕州、柳州、盐城、上饶、昆明、大连、宁波、济南、上海、苏州、合肥、西安、长沙、余姚、福州、石家庄、无锡、玉环、宝鸡、芜湖、武汉、杭州、任丘、沈阳

广州数控设备有限公司
GSK CNC EQUIPMENT CO., LTD.
400-0512-028
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传真：020-81994083
网址：www.gsk.com.cn

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GSK 广州数控

数控神焊

全数字控制逆变MIG / MAG弧焊电源

FullDigitalControlContravariantMIG/MAGArcWeldingPower

GSK MDC-500P全数字高端焊机

GSKMDC-500PFullDigitalHigh-EndWeldingMachine

成型美观 / 飞溅量低 / 操作方便 / 安全节能 / 与GSK焊接机器人紧密配合

Beautiful shaping / Low splash / Low splash / Safety & energy conservation / Safety & energy conservation / Close cooperation with GSK welding robot

关于我们 ABOUT US

广州数控设备有限公司（简称：广州数控、GSK）成立于1991年，历经艰苦创业、勤奋创新、智能创造再起步，成为国家级高新技术企业，作为国内专业技术成熟的成套智能装备解决方案提供商，被誉为中国南方数控产业基地。

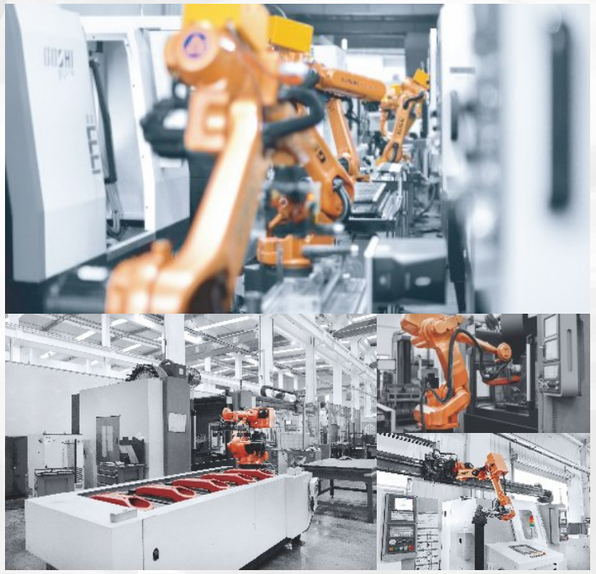
广州数控是中国机床工具工业协会理事长单位、中国机器人产业联盟副理事长单位、中国软件行业协会理事长单位、中国机械联合会理事单位、中国机电装备维修与改造技术协会理事单位。两次荣获国家科学进步奖二等奖，拥有国家级企业技术中心、博士后科研工作站、工程技术研发中心、工程实验室，公司拥有精良的生产设备和工艺流程，科学规范的质量控制体系保证每套产品合格出厂；拥有完善的售后服务网络和专业的技术服务团队，以“精益求精，让用户满意”的服务精神，全方位、多层次、科学高效的服务管理方式和手段，保证用户在短时间内得到快捷、可靠、有效的响应。

GSK CNC Equipment Co., Ltd. (hereinafter referred to as: GSK) was established in 1991, which becomes a National high-tech enterprise after undergoing the hard work, diligent innovation and restarting with intelligent creation. As a provider of complete intelligent equipment solutions with mature professional technologies in China, it is known as the CNC industry basement in Southern China.

GSK is the Company of the Chairman of China Machine Tool Industry Association, the Vice Chairman of China Robotic Industry Alliance, the Chairman of China Software Industry Association, the Director of China Machinery Federation, and the Director of China Mechanical and Electrical Equipment Maintenance and Transformation Technology Association. It won the National Science Progress Award twice. It has a national enterprise technology center, post-doctoral research workstation, engineering technology R&D center, and engineering laboratory. GSK owns has excellent production equipment and technology procedure, and a scientific and standardized quality control system to ensure that each set of products are qualified; We have a perfect after-sales service network and a professional technical service team; the service spirit of "Keeping Improving and Satisfying to User"; the management methods and means of the services with all-round, multi-level and scientific and efficient and ensure that users can get a fast, reliable and effective response in a short time.

数控功能测试实验室 Testing laboratory with CNC function

SMT精密元件贴片车间 Chipping workshop of SMT precision element



从2009年承担数控机床专项至今，广州数控每年近10万套标准型数控系统（部分高档系统）配套，2018年，广州数控实现第100万套数控系统下线交付，百万套数控系统装备上百万台“工业母机”，支撑国内一大批机床制造企业健康运行。

Nearly 100,000 sets of the standard CNC systems (high-level systems including) are configured per each year of GSK, since undertaking the Special CNC machine tool project in 2009. In 2018, GSK achieved the off-line delivery of the one millionth CNC systems and the million sets of CNC systems that equipped with millions of “Industry Main Machines), which supported the health operation of a large number of domestic machine tool manufacturers.

依托30多年积累的数字控制技术，广州数控通过大量的创新研制出掌握核心技术的系列工业机器人及全数字高端焊机产品。同时充分发挥广州数控在高档机床、高端数控系统、五轴加工机床等设备和在机床行业多年加工经验的优势，产品本体零件全部自加工，有力控制成本和保障加工质量 。

GSK studied technology-cored series industry robot and high-end full digital welding products by a large number of innovations based upon the digital control technology accumulated more than 30 years. At the same time, GSK fully plays a role of advantages in high-level machine tool, high-end CNC system and five-axis machining device, etc. in the years of experience in the machine tool industry; as well, the overall main body components are processed by ourselves and properly controlled the cost and guaranteed the machine quality.

荣誉资质 HONORS AND QUALIFICATIONS

国家科学技术进步奖
（二等奖）

National Science and Technology Progress Award(the 2nd Prize)

国家科学技术进步奖
（二等奖）

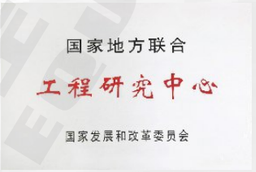
National Science and Technology Progress Award(the 2nd Prize)

制造业单项冠军示范企业
（机床数控系统）

Single Champion Demonstration Enterprise in Manufacturing Industry (Machine CNC System)

中国机床工业协会
第九届理事会轮值理事长单位

Chairman Unit of the 9th Council of China Machine Tool Industry Association

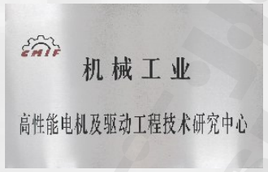


国家地方联合工程研究中心

National and Local Joint Engineering Research Center

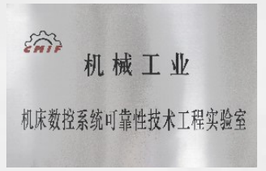
国家认定企业技术中心

Nationally Recognized Enterprise Technology Center



机械工业-高性能电机及驱动
工程技术研究中心

Mechanical Industry - High Performance Motor and Drive Engineering Technology Research Center



机械工业-机床数控系统
可靠性技术工程实验室

Mechanical Industry - Machine Tool CNC System Reliability Technology Engineering Laboratory

博士后科研工作站

Postdoctoral Research Workstation

七轴机器人

与航天器7关节机械臂技术同根同源，
掌握核心算法数字模型，伴舞神焊技术，
推动自动化工业科技快速发展。

With the same root and origin as the spa cecraft 7-joint manipulator technology , Master the core algorithm model , dance divine welding technology , Promote the rapid development of automation indust-ry technology.

GSKRH06B1
Seven-Axis Industrial Robot

GSK MDC-500P
全数字高端焊机
Full Digital High-end Welding Machine

主机特点：
Host Features:

采用碳化硅作为主回路开关器件，输出回路开关频率高达128kHz，具备优秀的动态响应能力。
针对MDC焊接工艺（推拉丝）专门研制了送丝专用的伺服驱动和电机，使得送丝系统能够完成高频的送丝和回抽动作。
采用FPGA+DSP双核控制，能够实现复杂的数字化焊接电流波形控制，配合上述送丝系统实现MDC直流推拉丝、脉冲、双脉冲以及直流和脉冲复合等多种焊接工艺。

It is used the silicon carbide as the main circuit switch components and up to 128kHz of the output circuit switch frequency, and it owns excellent ability of dynamic response as well. It is studied the dedicated servo drives and motors for wiring based upon the MDC welding technology (Wire-pull -ing); so that the wiring system can be performed high frequency wiring and retracting motions. It is adopted with the FPGA+DSP dual-core control, which can be carried out the complicated digitization welding current wave-form control and achieved the welding technologies such as the MDC DC wire-pulling, pulse, dual-pulse and DC and pulse compound etc. based upon the above-mentioned wire-feeding system. It is the Top welding velocity in the word.

世界领先的焊接速度
World-class Welding Speed

世界一流的焊接质量
World -class Welding Quality

个性化智能焊缝管理
Personalized Smart Seam Management

高度集成化的远程管理
Highly integrated remote management

多种微创冷焊节电模式
Multiple Minimally Invasive Cold Welding Power-saving Modes

0.1焊缝轨迹重现精度
0.1 Weld Trajectory Reproduction Accuracy

8寸触摸屏
8 Inch Touch Screen
简单易操作,中英文交互界面

Simple and easy to operate, can be operated with gloves,Chinese and English operation interface.

首创防尘技术
Pioneer Of Dust-Proof Technology
内外隔绝，极致防尘，十年如新

Isolation between internal and external, extreme dustproof, ten years used as a new.

云管理系统
Cloud Management System
联网实现设备管理,数据库库管理与系统维护

Networking for device management,based on the library management and system maintenance.

MDC焊接工艺
MDC Welding Process
0.2mm超薄板低飞溅高速焊

0.2mm ultra-thin plate with low splash and high velocity welding.

焊接系统 WELDING SYSTEM

送丝系统由伺服送丝机、缓冲器与伺服焊枪等部件组成。
适用于微创冷焊、高速焊、间断焊、直流低飞溅、脉冲等多种焊接工艺应用。

伺服送丝机
Wire-Feeding Machine Of Servo

采用定制的伺服驱动与电机，实时调节送丝速度，确保送丝精准稳定。

The customized servo drive and motor are used to adjust the speed of wire feeding in real-time and ensure accurate and stable of wire-feeding.

缓冲器
Buffer

充当伺服送丝机与伺服焊枪连接的桥梁，弹性容纳焊丝，实时反馈焊丝状态，调整送丝速度使送丝过程更加平稳。

The buffer, is acted as the bridge between the servo wire-feeding machine and servo welding machine, which can be held the flexible welding cable, feedback the state of welding in real-time, and adjusted the speed of wire-feeding so that the process of wire-feeding is more stable.

伺服焊枪
Servo Welding Gun

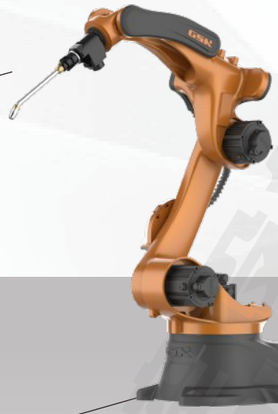
焊丝进动速度与方向随不同工艺需求周期性变化
The wire precession speed and direction change periodically with different technology requirements.

推拉丝焊接过渡频率最高可达200Hz
Push-draw welding transition frequency up to 200Hz

推拉丝加速度最高可达745m/s²
Up to 745m/s² of push-pull acceleration

百兆以太网通信
The 100-megabit Ethernet communication

GSK工业机器人电柜
GSK Industrial Robot Electric Cabinet



GSK工业机器人
GSK Industrial Robot

GSK MDC-500P 全数字高端焊机
GSK MDC-500P
Full digital high-end welding machine

数字焊机水箱
Digital Welding Machine Water Tank

结构造型独特，外观新颖，品牌识别性强。
Unique structural shape, novel appearance and strong brand recognition.

结构紧凑，工艺先进，结实可靠。
Compact structure, advanced technology, strong and reliable.

具备水位高度测量、报警功能。
Water level height measurement and alarm function.

具备水流量检测报警功能。
With water flow detection and alarm function.

具备水温监测功能。
Water temperature monitoring function.

操作面板：与焊机完美结合

OPERATION PANEL: PERFECT COMBINATION WITH WELDING MACHINE

触摸屏

Touch Screen

MDC-500P智能焊机操作面板主要由触摸屏、旋转按钮和功能按键组成。图形界面一目了然，给予用户直观、快捷、简便的操作界面。

The MDC-500P intelligent welder operation panel is mainly composed of touch screen, rotation button and function button. The graphical interface is clear at a glance, giving the user intuitive, quick and simple operation interface.

焊接参数图形

Welding Parameter Graph

图形化参数显示，客户更好理解，设置更快捷。

Graphical parameter display enables customers to better understand and set more quickly.

一元化专家系统

Unified Expert System

系统集成了一元化焊接专家数据库，焊接参数“一元化调节”，操作者无需长时间培训，同时能取得良好的焊接质量。

The system integrates the unified welding expert database, the welding parameters "unified adjustment", the operator does not need long training, and can obtain good welding quality.

示波器功能

Oscilloscope Function

高频采样焊接过程的电流、电压和送丝速度波形，实时监控焊接质量。

Both the current in the process of high frequency sampling and the wave-form of voltage and wire-feeding speed are conveniently analyzed and improved the welding quality.

焊接软件包可配置和拓展

Welding Software Package Can Be Configured And Expanded

焊机可配置和扩展不同的软件包，可不断地提高和扩充焊机的各种功能和技术含量。

The welding machine can configure and expand different software packages, which can continuously improve and expand the various functions and technical content of the welding machine.

- 直流焊
- 脉冲焊
- 低飞溅
- 多脉冲

系统在线升级

System Update Online

通过USB接口直接升级焊机系统，使得对焊机的维护和更新更简便。

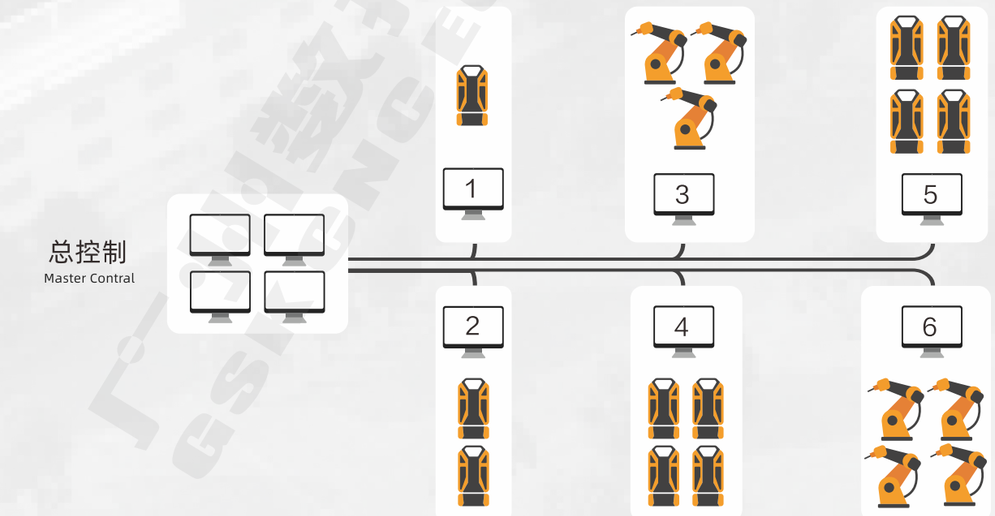
Directly upgrade the welding machine system through USB interface, making the maintenance and updating of the welding machine easier.

车间网络管理系统

Workshop Network Management System

通过远程管理和查看多台焊机的工作状态、运行的程序、加工参数等。使得车间管理更加方便快捷。

Through remote management and view the working state of multiple welding machines, running procedures, processing parameters, etc. Make the workshop management more convenient and fast.



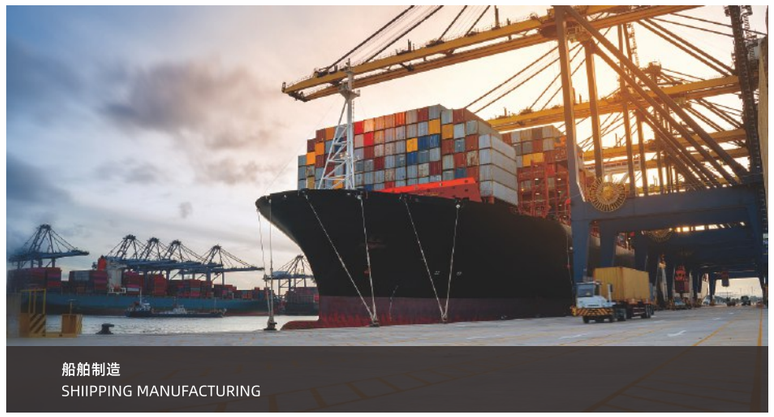

轨道交通行业
RAIL TRANSIT INDUSTRY


新能源汽车制造
NEW ENERGY VEHICLE MANUFACTURING

MDC焊接工艺在行业领域应用

Application Of MDC Welding Process In I ndustry


智能家居行业
INTELLINGENT HOUSE INDUSTRY


船舶制造
SHIIPPING MANUFACTURING


电弧增材制造
ARC ADDITIVE MANUFACTURING

参数规格 Rated Input Voltage and Frequency

型号 Model	额定输入电压、频率 Rated input voltage and frequency
MDC-500P	三相、380V±10%，50/60Hz
额定输入容量 Rated input capacity	**额定输入电流 Rated input current**
23kVA	37A
功率因数 Power factor	**额定空载电压 Rated No-load voltage**
0.95	72V
额定负载持续率 Rated load duration	**输出电压范围 Output voltage range**
60%	12-42V
输出电流范围 Output current range	
30-500A	

保护气体 Shielding gas	适用焊丝种类 Applicable welding wire type
MIG/MAG	实芯焊丝
焊丝直径 Welding wire	**焊接条件存储数 Storage number of Welding conditions**
Φ0.8、Φ1.0、Φ1.2、Φ1.6	1000
绝缘等级 Insulation class	**主机尺寸 Host size**
Transformer F, reactor H	786×366×675（mm）
重量 Weight	**送丝速度 Wire feeding speed**
55 kg	0.4-25m/min

推拉丝频率最大值 Maximum frequency of wire pushing and drawing	推拉丝加速度最大值 Maximum wire pushing and drawing acceleration
200Hz	745m/s²

工艺介绍 TECHNOLOGY INTRODUCTION

微创冷焊

Micro Deformation And Cold Welding

MDC

焊接领域的巨大进步

焊接技术 WELDING TECHNIQUE

MDC微创冷焊

MDC Deformation And Cold Welding

微创冷焊、直流、脉冲、高速焊和间断焊等多种焊接工艺，适用于碳钢、不锈钢、镀锌板、铝合金、铜合金等金属材料焊接，超薄板到厚板的高品质焊接，高速焊接、鱼鳞纹焊接等，都实现焊缝成形均匀一致。微创冷焊（Mirco Deformation And Cold Welding），广州数控创新技术，填补了国内的空白，为用户节省用电30%，焊接过程减少了高温对环境的影响，实现排放减少。专为薄板焊接设计的推拉丝焊接工艺，双伺服电机送丝系统控制焊丝周期送进-回抽，配合微秒级输出波形控制，实现极低热输入的熔滴过渡。可焊接0.2mm不锈钢、碳钢、硅钢、高强钢，且飞溅极低。

Minimally invasive cold welding, DC, pulse, high speed welding and intermittent welding and other welding processes, suitable for carbon steel, stainless steel, galvanized sheet, aluminum alloy, copper alloy and other metal materials welding, super thin plate to thick plate of high quality welding, high speed welding, fish scale welding, etc., all achieve uniform weld formation good. Guangzhou CNC innovative technology, to fill the gap in China, for users to save 30% of electricity, welding process to reduce spatter, to achieve traditional welding emission reduction. The push and draw welding process is specially designed for thin plate welding. The double servo motor wire feeding system controls the wire feeding and pumping cycle, and achieves the droplet transition with very low heat input with microsecond output waveform control. Welding 0.2mm stainless steel, carbon steel, silicon steel, high strength steel, and very low splash.

高速焊

High Speed Welding

以MDC焊接工艺为基础的超高过渡频率焊接工艺过渡频率高达200Hz。在机器人高速移动时保证焊缝的光滑连续，独特的短弧控制工艺以提高熔敷效率，最高4m/min的焊接速度使得生产节拍更加流畅。

The super-high transfer frequency welding is as high as 200Hz based upon the MDC welding technology. It can be guaranteed the smooth and continuous of welding seam when the robot is moved at its high speed. The unique short-arc controllable technology can be improved the deposition efficiency; up to 4m/min welding speed makes the production beat smoother.

间断焊

Indirect Welding

专为鱼鳞纹设计的间断焊，可大幅度减少热输入，且焊缝成型美观。

The High-frequency short-arc pulse welding is specially designed for thick plate welding, which is owned the shorter arc length, the greater penetra - tion depth, and the higher melt efficiency.

脉冲

Pulse

专为厚板焊接设计的高频短弧脉冲焊，拥有更短的弧长、更大的熔深、更高的熔敷效率.

The intermittent welding is specially designed for the ripple welding, which can be greatly reduced the thermal input, and the shaping of welding seam is beautiful.

直流低飞溅

Dc Lowspatter

独特的弧长自调节能力，配合专业的电流波形设计，使直流低飞溅焊接工艺拥有更低的飞溅、更强的电弧挺度、更广的适用范围。

The unique arc length self-adjustment ability is combined with the professional current waveform design, which enables the DC low splash welding technology less splash, stronger arc stiffness, and wider application range.

微创冷焊工艺原理

Principle of minimally invasive cold welding

送丝运动与熔滴过渡过程进行数字化协调，送丝精准，电弧熔滴可控。

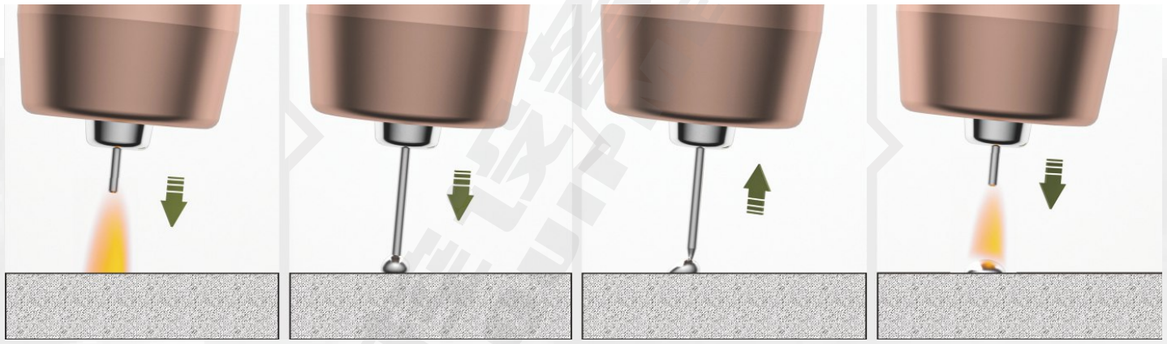
The procedure of wire feeding movement and droplet transfer should be adjusted with digit, the wire feeding is accurate, and the arc droplet can be controlled.

基座轴联动跟踪

Base Axis Linkage Tracking

在焊接短路状态下焊丝回抽运动，焊丝与熔滴实现微电流分离，抑制飞溅产生。

In the state of welding short circuit, the welding wire draws back and moves, and the welding wire and the droplet realize micro-current separation, and the generation of spatter is suppressed.

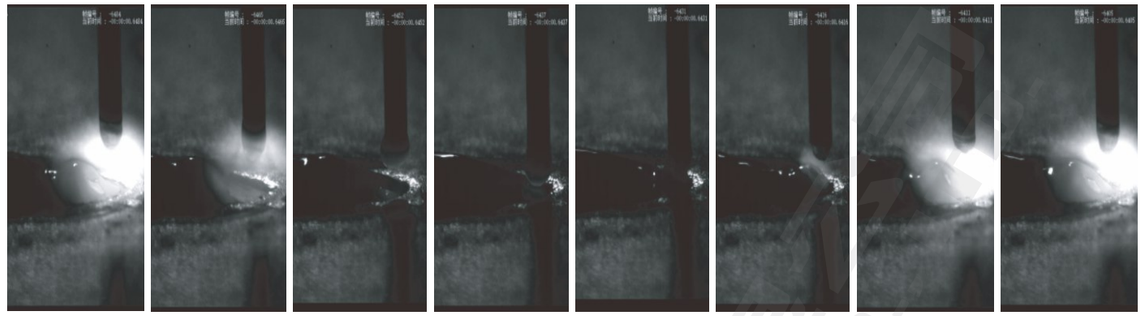


原理流程图

Principle Flow Diagram

MDC微创冷焊控制工艺

MDC MINIMALLY INVASIVE COLD WELDING CONTROL PROCESS



① 焊丝在最高点，燃弧状态
Welding wire is at the highest point, arcing state

② 正向快速送丝，电弧减弱
Fast wire feeding in positive direction arc weakening

③ 正向慢速送丝，电弧减至最弱
Fast wire feeding in positive direction, arc weakening

④ 焊丝接触到熔池，电弧熄灭
Welding cable touches to the molten pool and the arc is extinguished

⑤ 焊丝回抽
Welding cable backward

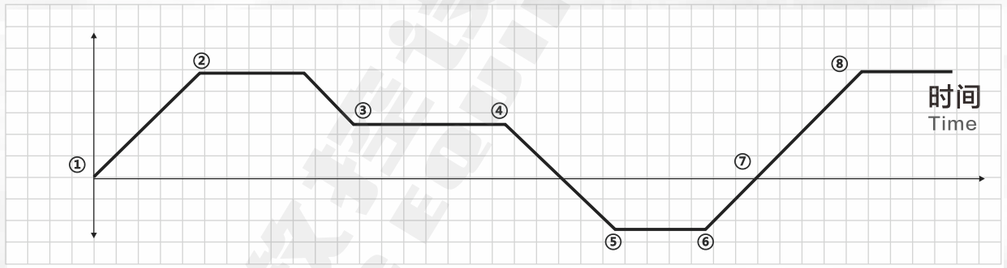
⑥ 焊丝离开熔池,产生电弧
The welding wire leaves the molten pool and an electric arc is generated

⑦ 焊丝在最高点并燃弧
Welding wire is at the highest point, arcing state

⑧ 正向快速送丝
Positively wire feed at its rapid rate

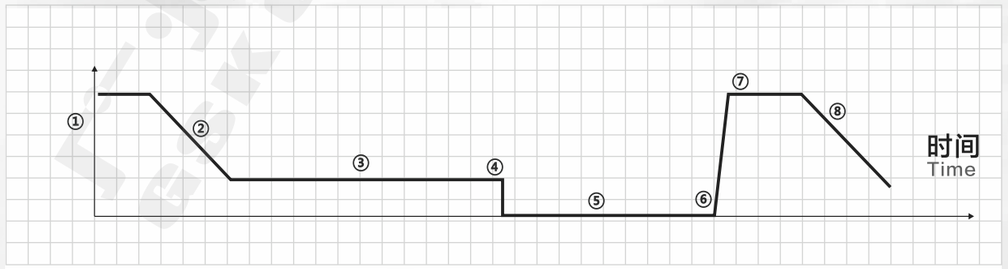
送丝速度

Wire Feeding Speed



焊接电流

Welding Current



工艺特点 TECHNOLOGY CHARACTERISTICS

微创冷焊（Micro Deformation and Cold Welding），广州数控创新技术，填补了国内空白，为用户节省用电30%，焊接过程减少高温对环境的污染，实现排放减少。

微创冷焊技术与传统的MAG/MIG技术相比，金属熔滴过渡热输入量会更低，变形较小，焊接飞溅极小。MDC焊接送丝系统是闭环控制的，将送丝运动与熔滴过渡相结合，焊丝回抽频率可达200Hz以上。当数字化的控制系统监测到短路信号，即刻反馈给推拉丝伺服电机，推拉丝伺服电机作出回应，迅速回抽焊丝，从而使焊丝与熔滴分离。

MDC minimally invasive Cold Deformation Welding (Micro Deformation and Cold Welding), the innovative technology of numerical control in Guangzhou, fills the gap in China, saves 30% electricity for users, reduces the environmental pollution caused by high temperature in the welding process, and reduces emissions.

Compared with traditional MAG/MIG technology, minimally invasive cold welding technology has lower transition heat input of metal droplet, smaller deformation and minimal welding splash. The MDC welding wire feed system is closed-loop controlled, combining wire feed motion with droplet transition, and the wire withdrawal frequency can reach more than 200Hz. When the digital control system detects the short-circuit signal, it immediately feeds back to the push-draw servo motor. The push-draw servo motor responds and quickly draws back the welding wire, so as to separate the welding wire from the dropper.

极小焊接飞溅，不需要焊后清理飞溅

Minimal Welding Splash, Need Not Clean The Splash After Welding

采用CO_2也能实现极致的超低飞溅焊接，最大降低98%飞溅

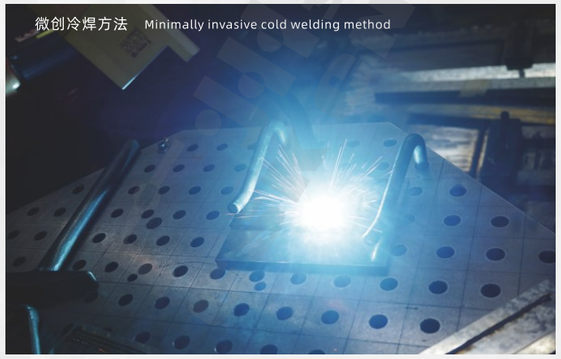
Using CO_2 can also achieve extreme ultra low splash welding, up to 98% splash reduction

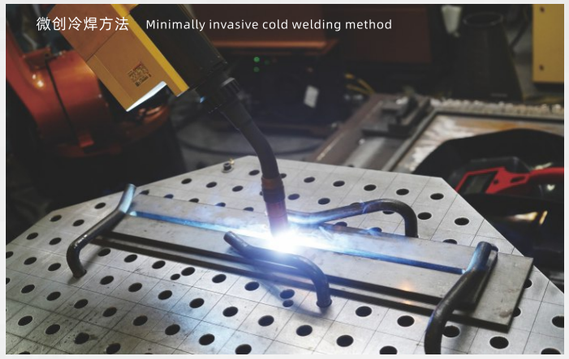
● 不锈钢焊接，飞溅降低98%

Stainless Steel Welding, Splash Reduces 98%

● 镀锌板焊接也能得到超低飞溅

Galvanized Sheet Welding Can Also Get Ultra-low Splash





微创冷焊、直流、脉冲、高速焊和间断焊等多种焊接工艺，适用于碳钢、不锈钢、镀锌板、铝合金、铜合金等金属材料焊接，超薄板到中厚板焊接都可实现均匀一致、成型美观的高品质焊缝效果。

MDC minimally invasive cold welding, DC, pulse, high-speed intermittent welding and other welding processes, suitable for carbon steel, stainless steel, galvanized sheet, copper alloy and other metal materials welding, ultra-thin plate to medium and thick plate welding can achieve uniform, beautiful shape of high-quality weld effect.

极低的热输入量
Extremely low thermal input value

可以焊接0.3mm超薄板
Can be welded the ultra-thin board of 0.3mm

0.3mm不锈钢片微创冷焊
0.3mmStainless steel sheet min imally invasive cold welding

电流35A
Current: 35A

焊接速度：23mm/s
Welding speed: 23mm/s

焊缝成形均匀一致好
The welding seam shape is well uniform

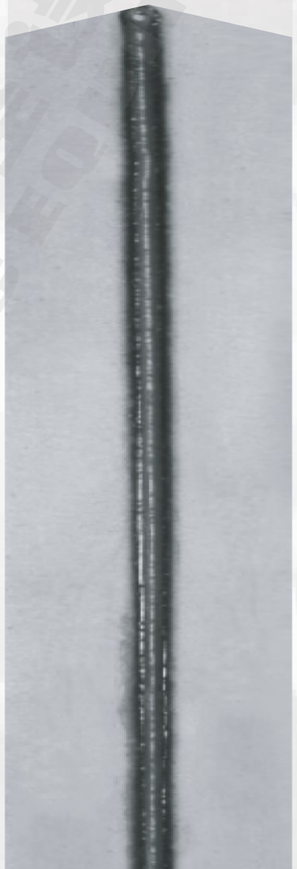
焊接速度快
The welding speed is fast

最高可达400cm/min
Up to 400cm/min

1.0mm碳钢高速焊
High-speed welding of 1.0mm carbon steel

电流180A
Current: 180A

焊接速度：65mm/s
Welding speed: 65mm/s



弧长精准控制
The arc length is precisely controlled

电弧稳定
The electric arc is stable

焊接质量好
The weld quality is good

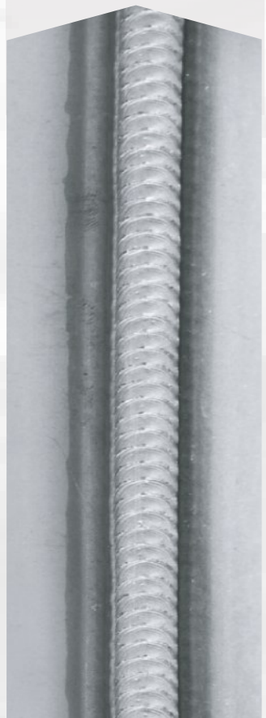
2.0mm高强钢鱼鳞纹角焊
Ripple angle welding of 2.0mm high-strength steel

电流175A
Current: 175A

焊接时间：0.55s
Weld time: 0.55s

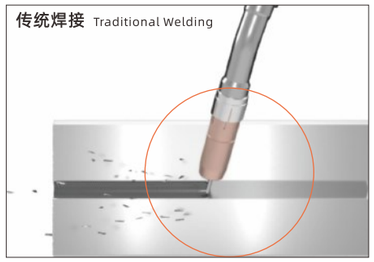
间隔：0.5s
Interval: 0.5s

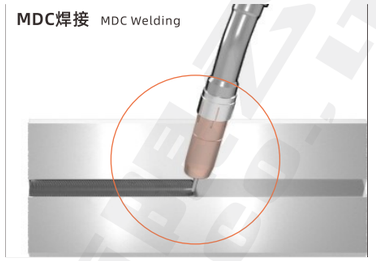
焊接速度：3-4mm/s
Welding speed: 3-4mm/s



超低飞溅
Low Splash

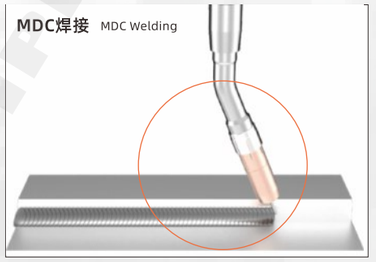
低飞溅功能更好地保护了产品焊接周边，没有烧伤及飞溅铁渣，从而减少一次打磨，为二次处理节省时间。
The low splash function can be better protected that there is no burns and iron ships splashing around the products; reducing primary grinding and saving time for secondary processing accordingly.





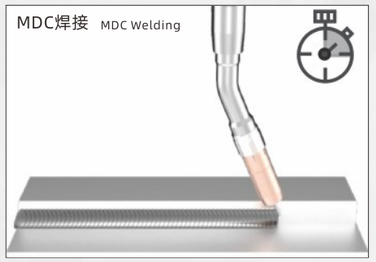
焊接热量小/变形小
Small Welding Heat/Distortion

MDC焊接工艺在高温焊接过程中减少对母材金属的损耗，焊接热量小，变形小，为客户的薄板工件焊接提供技术支撑。
The MDC welding technology reduces the loss of raw-material metal during the high temperature welding; the welding heat value and distortion are less and it is also provided the technical support for the welding of thin-plate workpiece for the customers.



焊接速度快
Fast Welding Speed

MDC高速焊接工艺可以达到世界领先水平实现漂亮的焊缝效果，节省焊接时间，为用户节省用电30%。
The MDC welding technology reduces the loss of raw-material metal during the high temperature welding; the welding heat value and distortion are less and it is also provided the technical support for the welding of thin-plate workpiece for the customers.



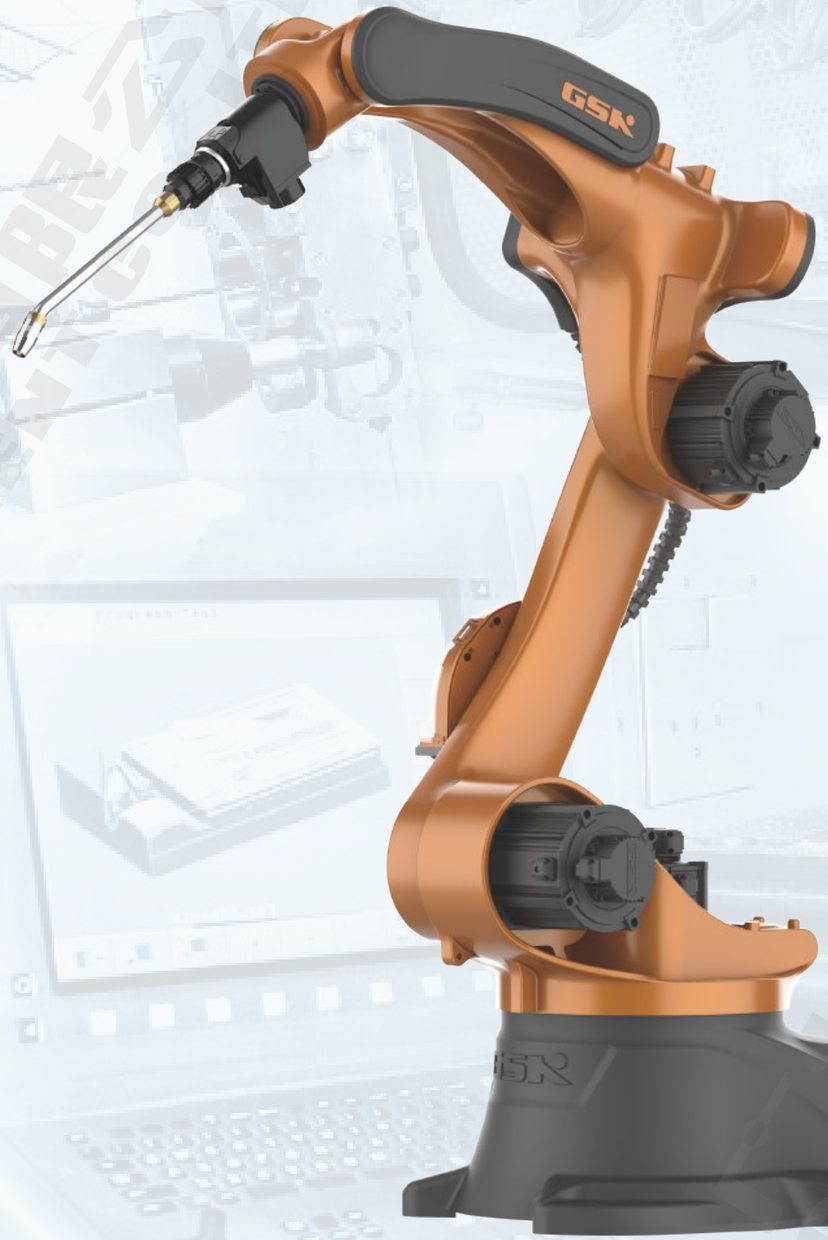
GSK数控神焊单元
GSK MAGIC WELDING UNIT

GSK RH系列中空焊接机器人
GSK RH SERIES HOLLOW WELDING ROBOT

GSK MDC-500P全数字高端焊机
GSK MDC-500P HIGH-END DIGITAL WELDING

数控神焊单元构成：
GSK MDC-500P全数字高端焊机+GSK RH系列高性能中空机器人。
广数自主研发，融合了先进的焊接工艺技术和机器人控制技术，有效解决1.0mm以下的薄板和超薄板MIG/MAG焊接工艺存在热输入量大、变形严重、焊接飞溅等焊接问题，更好实现机器人自动化焊接应用。

CNC god welding unit composition:
GSK MDC-500P digital high-end welder +GSK RH series high performance hollow robot.
Developed independently by Kosu, it integrates advanced welding technology and robot control technology to effectively solve the welding problems of thin and ultra-thin plate MIG/MAG welding process of 1.0mm or less, such as large heat input, serious deformation, welding splash and so on, so as to better realize the application of robot automatic welding.



免费保修
3年
FREE WARRANTY
FOR 3 YEARS

GSK RH06A2
高性能机器人

HIGH PERFORMANCE ROBOT

轨迹重复性 ≤ 0.1mm

Track Repeatability ≤ 0.1mm

采用高精密减速器，高刚度本体结构设计，重复定位精度±0.05mm。整体造型采用了弧形设计，让出更大工作空间，降低了机器人本体与工件和工装的干涉的风险。

It is used the high-precision accelerator and high-rigidity body structure design; it's repeated positioning accuracy is±0.05mm. The overall shape adopts a curved design, which allows a larger working space and reduces the interferences between the robot body and the workpiece.

全新一体化驱动

New Integrated Drive

焊接机器人配置全新一体化驱动，安全可靠、故障较低；一体式伺服配置电柜体积减小约50%，重量降低约30%，使用的现场布局更为灵活；采用共母线整流技术，各轴加减速运行时实现能量互馈补偿，机器人在同一运动状态下耗电量降低约30%，更为低耗环保节能；集成电机抱闸闭环检测及动态制动功能，更为安全。

The welding robot is equipped with a new integrated drive, which is safe and reliable and low failures; the volume of the configured cabinet of integrated servo is reduced by about 50%, and the weight is decreased by about 30%, and the site layout used is more flexible. The common Bus rectification technology is adopted and the energy mutual feedback compensation is carried out when the acceleration or deceleration of each axis is performed. In the same motion state, the power consumption of robot is decreased about 30%, which can be saved the energy for low consumption and environmental protection. The integrated motor brake closed-loop detection and dynamic braking function are safer.

电机运行速度波动降低30%

Fluctuation Of motor's Operation Speed Reduces 30%

采用全新高速电机，机器人运动过程更平稳、更可靠。

With the new high-speed motor, the robot movement process is more stable and reliable.

腕部(J6轴)中空径达50mm

Up to 50mm of wrist (J6 axis) hollow diameter

中空型腕部结构，焊枪线缆内置走线，减少线缆干涉、磨损。

The hollow wrist structure and built-in cable of welding gun can be reduced the cable interference and wear.

机器人具有丰富的焊接工艺包
适用不同焊接工况场景应用

The robot has a rich welding technology package
Applicable to different welding conditions

+ 多场景 + Multiple Scenes

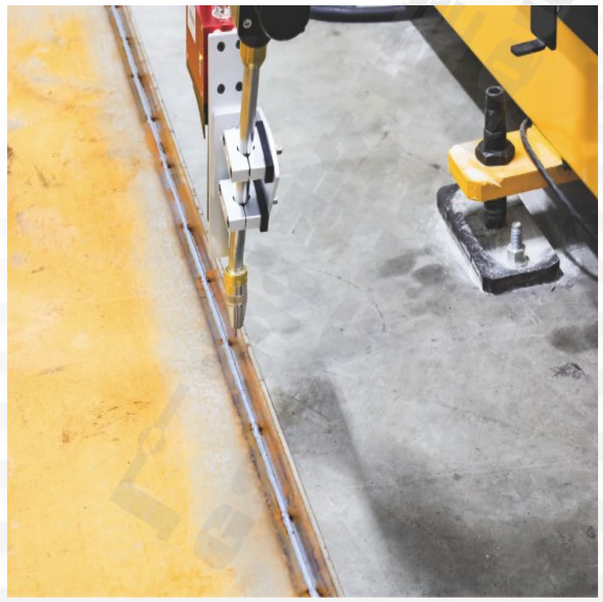
+ 多工艺 + Multiple Technologies

基座轴联动跟踪

Base Shaft linkage Tracking Function

基座轴联动跟踪功能能够实现在搭配外部轴（变位机/基座轴）进行焊接作业时实时纠正联动焊接轨迹偏差，同时可搭配变位机联动摆焊使用，保证焊接质量和提升焊接效率。

The base shaft linkage tracking function can realize real-time correction of linkage welding track deviation when the welding is performed mated with an external axis (positioner/basement axis); simultaneously, it can be used with the positioner linkage swing welding to ensure the welding quality and improve the welding efficiency.



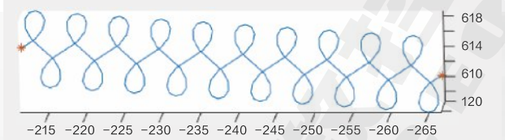
摆焊功能
Swing Welding Function

摆焊功能包括sin摆，三角摆，八字摆，圆弧摆等形式，可支持联动和非联动形式，满足多种焊接工艺需求。

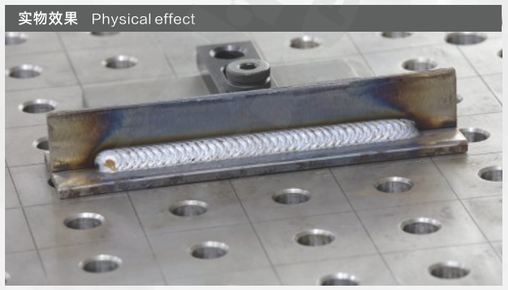
Weaving welding functions are included sinus pendulum, triangular pendulum, figure-of-eight pendulum, arc pendulum and other forms, which can be supported linkage and non-linkage forms to meet the needs of various welding technologies.

8字联动摆焊功能
8-Shape linkage Weaving Welding Function

摆动轨迹 Swing track

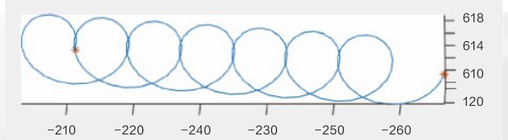


实物效果 Physical effect

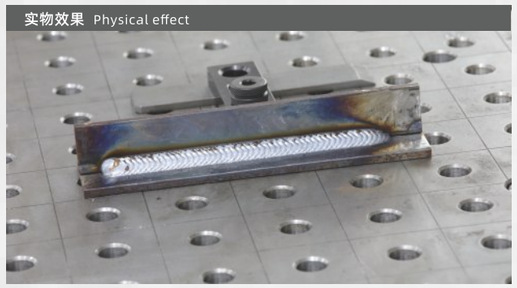


圆弧联动摆焊功能
Arc linkage Swing Welding Function

摆动轨迹 Swing track



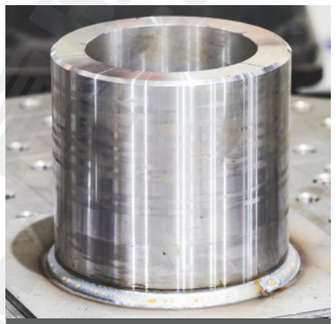
实物效果 Physical effect



激光联动寻位
Laser linkage positioning

激光联动寻位功能能够实现在搭配外部轴（变位机/基座轴）进行焊接作业时预先纠正联动焊接轨迹偏差再进行焊接，同时可搭配变位机联动摆焊使用，保证焊接质量和提升焊接效率。

The laser linkage positioning function can realize the correction of linkage welding track deviation in advance and then perform the welding when the welding is performed mated with an external axis (positioner/basement axis); simultaneously, it can be used with the positioner linkage swing welding to ensure the welding quality and improve the welding efficiency.



实物效果

激光多点变姿态跟踪
Laser multi-point variable attitude tracking

激光多点变姿态跟踪功能能够实现实时纠正多段焊接轨迹偏差同时满足姿态渐变过渡，可支持联动和非联动跟踪形式，保证焊接质量和提升焊接效率。

The laser multi-point variable attitude tracking function can be realized the real-time correction of multi-segment welding path error; simultaneously, it can be met the attitude gradient transition, supported the linkage and non-linkage tracking forms to ensure welding quality and improve welding efficiency.

实物效果

GSKRH06B1
七轴机器人
Seven-Axis Industrial Robot

＋提升市场效益
＋降低焊接成本
Improve Market Efficiency
Reduce Welding Cost

GSKRH06B1
系列亮点
Series Highlights

焊接范围灵活
Flexible connection range

小工件全周焊接
Full welding of small workpieces

使用成本能耗成本更低
Lower cost of use and energy consumption

提升经济效益
Improve economic benefits

设备部署周期短
Short cycle of equipment department

运行调试简单
Simple operation and debugging

集成化作业
Integrated operations

减少工序 提升效率
Reduce the procedures

减少机器人数量
Reduce the number of robots

提高厂房利用率
Improve the utilization of workshop

未来市场增速较高
Higher speed-up in the future market

机器人需求量大
Wider demands of robot

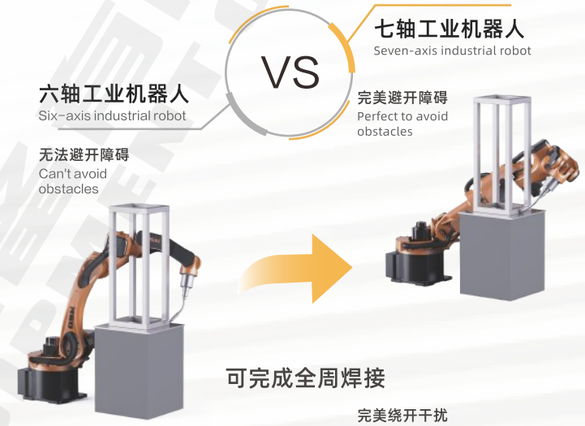
七轴工业机器人
Seven-Axis Industrial Robot

可以躲避某些特定的目标
It can be avoided some certain targets

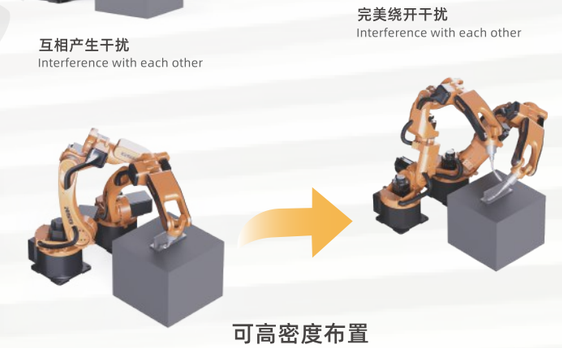
实现对焊接件的多方位焊接
To realize multi-directional welding of welded parts

减少焊接过程的工序
To reduce the processes during the welding

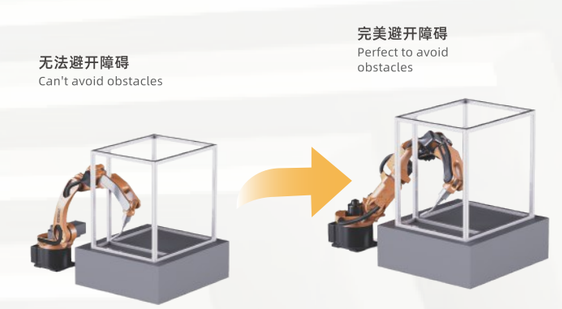
灵活适应某些特殊工作环境
To flexibly adapt some special working environment



可完成全周焊接



可高密度布置



具有避障功能

高运动灵活性
High Mobility And Flexibility

有利于焊接工序集成化，减少焊接工序，进而减少焊接夹具、焊接机械手数量。

It is beneficial to the integration of the welding technologies and reduces the welding technologies, thereby reduces the number of welding fixtures and welding manipulators.

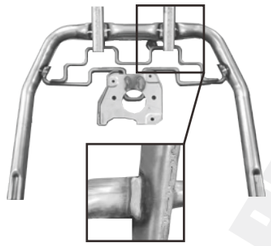
七轴工业机器人在汽车车体内焊接的应用
Application Of Seven-Axis Industrial Robot In Welding Of Car body

MDC微创冷焊
MDC Minimally Invasive Cold Welding

1.2mm不锈钢排气部件
1.2mm stainless steel exhaust parts

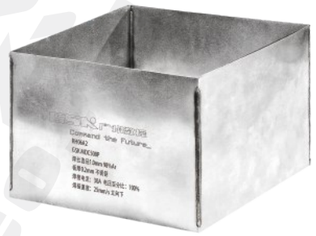
电流:90A Current:90A
焊接速度:15mm/s Welding speed: 15mm/s

1.2mm座椅骨架
1.2mm seat frame



电流:180A Current:180A
焊接速度:15mm/s Welding speed:15mm/s

0.2mm不锈钢片立焊
0.2mmVertical welding of stainless steel sheet



电流:30A Current:30A
焊接速度:25mm/s Welding speed:25mm/s

3.0mm冰箱压缩机
3.0mm refrigerator compressor

电流: 210A Current:210A
焊接速度:25mm/s Welding speed:25mm/s

1.2-3mm锁扣支架
1.2-3mm latch bracket

电流:160A Current:160A
焊接速度:8mm/s Welding speed:8mm/s

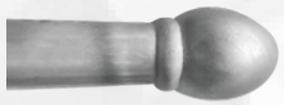
0.3mm不锈钢板
0.3mm stainless steel sheet

电流:35A Current:35A
焊接速度:23mm/s Welding speed:23mm/s

2.0mm不锈钢排气部件
2.0mm stainless steel exhaust parts

电流:160A Current:1690A
焊接速度:12mm/s Welding speed:12mm/s

1.0mm家具支腿
1.0mm furniture leg



电流:80A Current:80A
焊接速度:15mm/s Welding speed:15mm/s

1.0mm碳钢和黄铜
1.0mm carbon steel and brass

电流:85A Current:85A
焊接速度:15mm/s Welding speed:15mm/s

MDC微创冷焊(电弧增材)
MDC Minimally Invasive Cold Welding (Arc Additive)

金属缸体
Metal Cylinder

堆积尺寸:766*758mm Stacking size: 766 · 758mm
厚度:4mm Thickness: 4mm
电流:65A Current: 65A
速度:8mm/s Speed: 8mm/s
焊接时间:43h Welding time: 43h

金属花瓶
Metal Vase

堆积尺寸:185*745mm Stacking size: 185 · 745mm
厚度:4mm Thickness: 4mm
电流:65A Current: 65A
速度:8mm/s Speed: 8mm/s
焊接时间:23h Welding time: 23h

铜笔筒
Copper pen holder

堆积尺寸:112*145mm Stacking size: 122 · 145mm
厚度:4mm Thickness: 4mm
电流:100A Current: 100A
速度:6mm/s Speed: 6mm/s
焊接时间:1.5h Welding time: 1.5h

铜锥体
Copper vertebral body

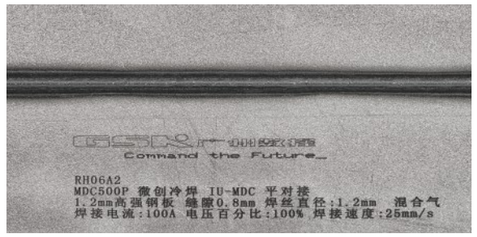
堆积尺寸:142*80mm Stacking size:142 ·80mm
厚度:4mm Thickness: 4mm
电流:80A Current: 80A
速度:6mm/s Speed: 6mm/s
焊接时间:0.83h Welding time:0.83h

金属筒体(焊接质量检测)
Metal cylinder (welding quality inspection)

堆积尺寸:157*200mm Stacking size: 157·200mm
厚度:4mm Thickness: 4mm
电流:65A Current: 65A
速度:8mm/s Speed:8mm/s
焊接时间:1.8h Welding time:1.8h

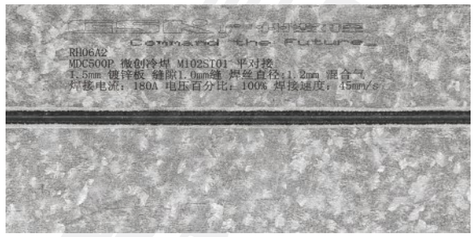
MDC高速焊
MDC high - speed welding

1.2mm高强钢对接焊
1.2mm high strength steel butt welding



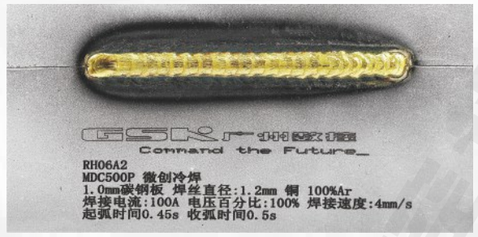
电流:100A Current:100A
焊接速度:25mm/s Welding speed:25mm/s
焊接间隙:0.8mm Welding:0.8mm

1.5mm镀锌钢板对接焊
1.5mm galvanized butt welding



电流:180A Current:180A
焊接速度:45mm/s Welding speed:45mm/s
焊接间隙:1mm Welding:1mm

MDC间断焊（鱼鳞纹）
MDC intermittent welding (fish scale)



1mm碳钢-铜钎焊
1mm carbon steel-carbon steel copper brazing

电流:100A Current:100A
焊接速度 :4mm/s Welding speed:4mm/s
间隔:0.5s Interval:0.5s
焊接时间 :0.45s Welding time:0.45s

2.0mm高强钢角焊
2.0mm high strength steel fillet welding

电流:180A Current:180A
焊接速度:6mm/s Welding speed:6mm/s
间隔:0.25s Interval:0.25S
焊接时间:0.2s Welding time:0.2s

0.8mm不锈钢内胆
0.8mm stainless steel liner

电流:30A Current:30A
焊接速度:4mm/s Welding speed:4mm/s
间隔:0.2s Interval:0.2s
焊接时间:0.15s Welding time:0.15s

广数职业培训学院 VOCATIONAL TRAINING SCHOOL

GSK 广州数控

学院介绍
College Introduction

广州市广数职业培训学院于1999年成立，是广州市人力资源和社会保障局和广州市民政局核定备案培训机构；是国家人力资源和社会保障部核定的国家高技能人才（机电项目）培训基地。广数职业培训学院凭借中国南方数控产业基地——广州数控设备有限公司的技术优势，围绕着以“工业主导、标准引领、产教整合、协同育人”十六字方针开展GSK工厂教学模式培训人才。

凡进入GSK工厂教学模式的学生有1/2以上时间在企业，内容是完全按照企业生产要求进行实际操作技能培训，也是企业实习生进行的生产性劳动。基础培训、专业培训和专长培训始终都是围绕职业实践活动由浅入深而开展。

广数职业培训学院可以给用户提供焊接操作人员培训、维护人才培养。

GSK Vocational Training College was established in 1999, which is a training institution approved by Guangzhou HR and Social Security Bureau and Guangzhou Civil Affairs Bureau; it is a national high-skilled talent (mechanical and electrical project) training basement approved by the Ministry of Human Resources and Social Security. GSK Vocational Training College relies on the technical advantages of CNC industry basement of Southern China - GSK CNC Equipment Company, which revolves “Industry-lead, Standard-led, production-education integration, collaborative education” to develop the GSK factory teaching model training.

Students who enter the GSK factory teaching mode are spending more than 1/2 of their time in the company. The content of the actual operation skill training is both fully performed based upon the production requirements of company and it is also the productive labor for the enterprise’s trainees. The basic training, professional training and specialty training are always carried out around professional practice activities step by step.GSK CNC Training Institute can provide the welding operator training and maintenance personnel training to users.

定位用人市场需求,强化训练操作技巧与技能
Positioning the demand of the employment market and strengthening the training of operating skills and skills

理论 Theory **实操** Practical Operation **鉴定** Appraisal **就业** Obtain Employment