

C 数控切割设备 NC Cutting Equipment

合作 创新 效率 责任
Joint Innovation Efficiency Respect



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济南二机床集团有限公司
JIER MACHINE-TOOL GROUP CO.,LTD.

企业简介 Profile

- 国内机床工具行业唯一获得金属切削和金属成型两个“中国名牌”的企业，拥有国家级技术中心，是国家机械工业100强。
 - 配套国际先进等离子电源、光纤激光器及数控系统，生产高精度的火焰、等离子、光纤激光等数控切割设备。
 - 不断创新持续发展，研发了五轴激光切割机、机器人柔性焊接线、专用切割生产线等产品，赢得了用户好评。
 - 一流的机床设计及制造工艺，结合先进的电源及控制技术，能够实现工件的高精度切割。
 - 完善的质量保证及售后服务体系，保证设备的长期稳定运行。
-
- Awarded with two China Top Brands, Metal Cutting & Metal Forming in machine-tool industry, China; possessing a state-level Technical Center; and is Top 100 enterprise in machinery industry.
 - Equipped with advanced international plasma power supply, fiber laser and CNC system for production of CNC cutting equipment such as high precise flame, plasma and fiber laser.
 - Based on continuous innovation & sustained development, 5-axis laser cutting machine, flexible robot welding line, and special cutting line have been researched and developed, so good reputation's been got from customers.
 - Top-rank design and manufacturing processes integrated with advanced power supply and control technology, so high accuracy workpiece cut is available.
 - Perfect quality control and after-sales service system ensures equipment to run properly and stably for a long time.



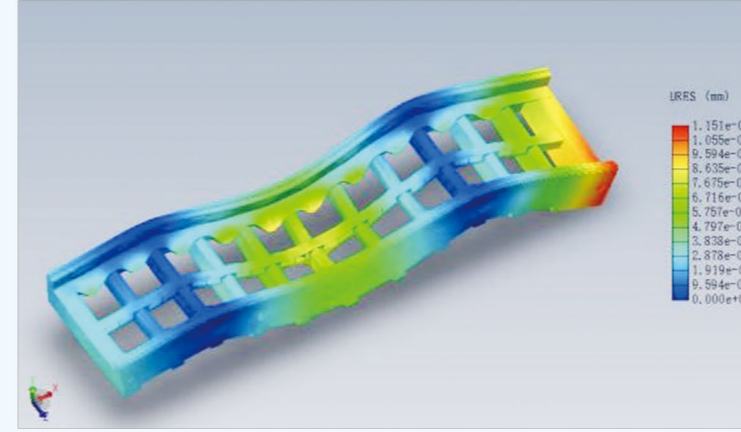
综合制造实力 COMPREHENSIVE MAUFACTURING STRENGTH



重型结构件焊接 Heavy duty welded structure



拥有数十台大、重型数控落地铣镗床
JIER has dozens of heavy-duty and large-scale CNC floor-type milling-boring machine



经过有限元分析 (ANSYS) 和设计, 可以有效消除和优化结构件自重和承载条件下的变形, 为机床稳定运行提供可靠保障。
By means of FEA (ANSYS) and design, deformation caused by structural member dead-weight and bearing conditions can be eliminated and configured for guaranty of stable running of machine tool.



智能车间管理系统
Intelligent management system in shop



热时效工艺处理 Heat age treated



全自动数控淬火机床
CNC automatic quenching machine tool



钢板下料均采用计算机自动优化排料和数控切割机切割
Steel plate blanking by means of computer automatic nesting and CNC cutting machine



Brown & Sharp 三座标测量机
3-D measuring machine



J2GS系列数控等离子火焰切割机

J2GS SERIES CNC PLASMA FLAME CUTTING MACHINE

性能特点

- 龙门切割机，采用单边/双边驱动，双驱同步控制；
- 纵横齿轮齿条传动，采用柔性（弹性）啮合传动方式；
- 横梁、立柱均采用箱式焊接结构，经热时效处理精加工而成；
- 造型美观，性价比高，刚性好，运行平稳；
- 集成火焰或等离子切割系统及工艺，最大切割厚度320mm。



切割试件 Test piece cutting

Features

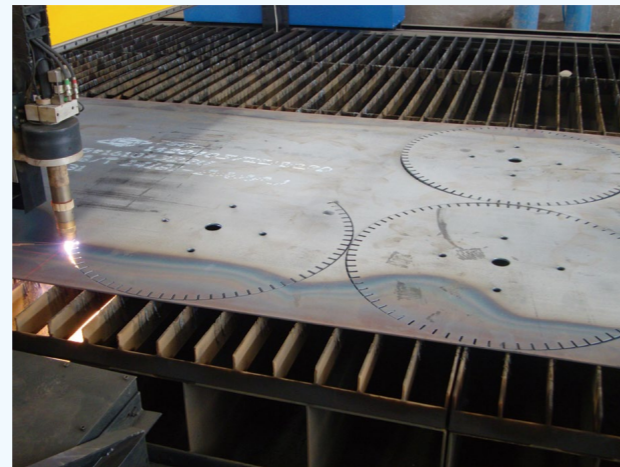
- Gantry cutting machine, single side/double side drive, and double drive synchronous control are available;
- Longitudinal and transversal rack and pinion drive and flexible engaging drive mode are available;
- Crown and upright adopt box-type welding structure and finely machined after heat aging treatment;
- Beautiful appearance, high performance-price ratio, good rigidity, and stable running;
- Integrated with flame or plasma cutting system and process, and the max. cutting thickness is 320mm.

技术参数表 Technical Data

主要技术参数（部分规格）Main Technical Data (some models)								
轨距 Track width (mm)	3100	3600	4000	5000	6000	7000	8000	9000
切割宽度 Cutting width (mm)	2500	3000	3200	4200	5200	6200	7200	8200
导轨长度 Track length (mm)	6000 - 50000 (或根据客户需求 or upon request of customer)							
切割长度 Cutting length (mm)	轨长减2000 (track length - 2000)			轨长减2500 (track length - 2500)				
最多割炬数量 Max. Nos of torch	6 (其中最多可配2个等离子 2 plasmas can be equipped, maximum)							
驱动速度 Drive speed	0 - 12000mm/min或0 ~ 24000mm/min (无级可调continuously variable)							
驱动方式 Drive mode	单边驱动 (轨距4000mm以下) 或双边驱动double-side drive							
切割厚度 Cutting thickness(mm)	火焰6-200 (特种320), 等离子2-80 (具体参照电源能力) Flame 6-200 (special 320), plasma 2-80 (as per power supply capacity)							
升降行程 Lift stroke(mm)	200 (或按需设计 or to be designed as needed)							
工作台除尘方式 Table dust-removal mode	吹吸式或风门式 (可配置滤筒式除尘器) blowing inhaling type or throttle type (can be equipped with cartridge filter dust catcher)							
切割方式及气体 Cutting mode and gases	火焰切割 (氧气+乙炔、丙烷、天然气) 等离子 (空气、氧气、氮气等) flame cutting (oxygen+acetylene, propane, natural gas), plasma (air, oxygen, and nitrogen etc.)							
供电需求 Power supply requirements	380V ± 10%/50HZ							
备注: 1、切割宽度随割炬数量变化, 导轨长度可按每2m加长或缩短, 轨距最大12m。2、所有技术参数以提供的最终技术方案为准								
Remarks: 1. The cutting width depends on the number of torch, the track length can be lengthened or shortened every 2m, and the max. track width is 12m.								



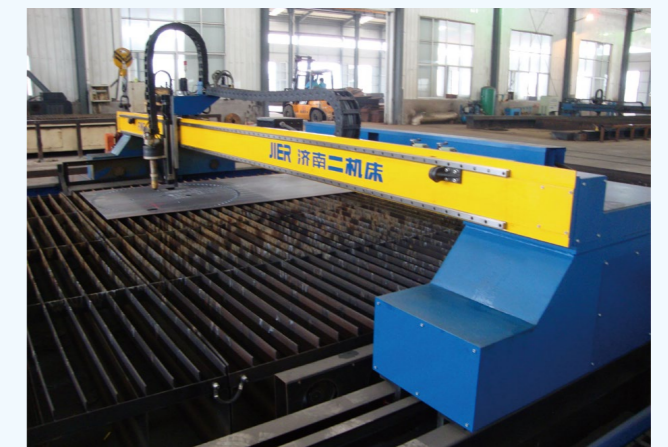
厚板切割生产
Thick plate cutting production



锯片切割生产
Saw bit cutting production



J2GS-3600HD型数控火焰等离子切割机
J2GS-3600HD CNC Flame Plasma Cutting Machine



J2GS-5000XD型数控精细等离子切割机
(纵向直线导轨导向)
J2GS-5000XD CNC Fine Plasma Cutting Machine (guided by a linear track in longitudinal direction)

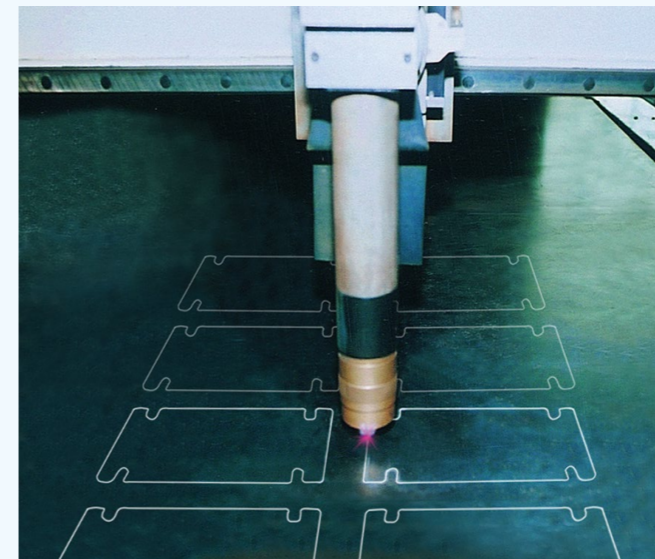
■ 数控切割标准配置 Standard CNC Cutting Configuration

项目 Items	标准配置说明 Remarks for Standard Configuration
龙门床身 (横梁和立柱) Gantry bed (cross beam and column)	焊接、热处理、精加工 Weldment, heat treatment, and fine machining
数控系统 CNC system	美国林肯、美国海宝、德国爱科曼等, 具体按需配置 USA Lincoln and HUPERTHERM, Germany Eckelmann, to be configured as needed
纵横向伺服驱动单元 Servo drive unit in longitudinal and transversal directions	国际一线品牌 Top-rank brands in the world
精密减速机 Precise speed reducer	国际一线品牌 Top-rank brands in the world
齿轮齿条 Rack and pinion	6级精度, JIER Grade 6 accuracy, JIER
升降及移动体 Lifting and moving body	纯等离子 (1组)、纯火焰 (2组)、火焰等离子 (各1组) Pure plasma (1 group), pure flame (2 groups), and flame plasma (1 group each)
纵向导轨齿条附件 Longitudinal track rack accessories	50KG精加工路轨 50KG finely machined track
编程套料软件 Programming nesting software	澳大利亚FASTCAM Australia FASTCAM
切割平台 Cutting platform	JIER提供图纸、用户制作 Drawing to be provided by JIER, and fabricated by customer
调高系统 Height regulating system	等离子弧压调高、火焰电容调高 Plasma arc pressure regulating high, flame capacitance regulating high
激光定位和离子防撞机构 Laser positioning and plasma anti-collision device	等离子标配, 火焰无需配置 Plasma standard configuration, and no configuration needed for flame
烟尘净化系统 Smoke dust cleaning system	根据机型选配 Optional configuration as per machine model
等离子压缩空气源处理系统 Plasma compressed air supply disposal system	根据机型选配 Optional configuration as per machine model
等离子稳压电源 Plasma voltage stabilizer	根据机型选配 Optional configuration as per machine model
服务及培训 Service and training	编程和操作培训 Programming and operation training
设备主机颜色 Main machine color	RAL5005

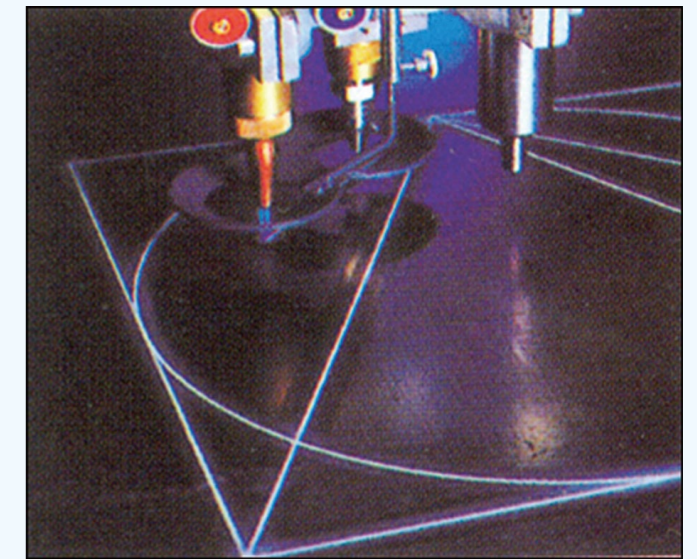


J2GS-6500XD型数控精细等离子切割机
(双等离子系统)
J2GS-6500XD CNC Fine Plasma Cutting Machine (double-plasma system)

■ 数控切割选项功能 CNC Cutting Optional Functions

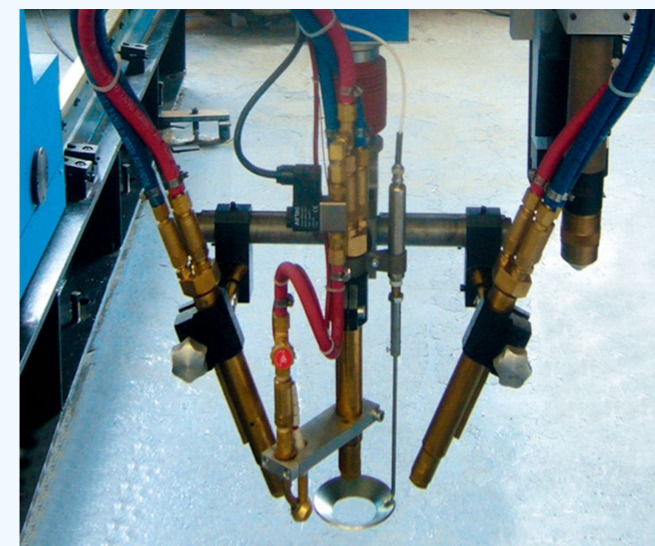


采用spirit II或HiFocus系列, 可以具有等离子划线功能。
Plasma line marking function can be available using spirit II or HiFocus series.



喷粉划线割炬在工件上可画出宽度为0.6-1.5mm的线, 其原理为利用高温火焰将锌粉融化于工件表面, 画线永久保留且可在其工件上直接进行焊接。

0.6-1.5mm width line can be marked on the workpiece using a powder cutting torch. Its principle is to use zinc powder melted on the surface by means of high temperature flame, and the line can be kept permanently and can be welded directly on the workpiece.



S型直线火焰三割炬
用于直线V,X,Y,K型破口切割
角度调整 0°~45°
板条宽度 50~40mm
可选择机械或电容自动调高

S tripe-torch straight cutting head
For v,x,y and k straight cuts
Angle adjustment 0°~45°
Strip width 50~140mm
Capacitive or mechanical height sensing

J2GST系列台式数控等离子切割机

J2GST SERIES DESK-TYPE CNC PLASMA CUTTING MACHINE

性能特点

- 整体式切割机床，双边同步驱动控制；
- 一体式模块化结构，安装、搬迁、运输方便；
- 纵、横向均采用进口精密级直线导轨，运行精度高；
- 整机结构紧凑，外形精致，高速运行平稳；
- 集成抽烟工作台，选配抽烟除尘系统，满足环保要求。

Features

- Integral cutting machine, and controlled by double side synchronous drive;
- One-piece modular structure, easy installation, relocation, and transportation;
- Imported precise linear track are equipped in both longitudinal and transversal directions, and good running accuracy;
- Compact entire machine, perfect appearance, and stable running at high speed;
- Integrated with smoke dust table, optionally configured with smoke dust catcher for meeting environmental protection requirements.

技术参数表 Technical Data

主要技术参数 (部分规格) Main Technical Data (some models)					
型号 Model	1530	2040	2060	2080	2580
有效切割范围 Effective working area (mm)	1500 × 3000	2000 × 4000	2000 × 6000	2000 × 8000	2500 × 8000
最多割炬数量 Max. No. of torch	1	1	1	1	1
驱动方式 Drive mode	双边驱动double-side drive				
直线定位精度 Linear positioning accuracy	± 0.1mm/m				
重复定位精度 Repeatability positioning accuracy	0.05mm				
等离子切割厚度 Plasma cutting thickness (mm)	1 - 45				
升降行程 Lift stroke (mm)	200				
驱动速度 Drive speed	0 ~ 24000mm/min, (无级可调continuously variable)				
除尘方式 Dust removal mode	风门式 (可配置滤筒式除尘器) Throttle type (can be equipped with filter cartridge dust catcher.				
供电需求 Power supply requirement	380V ± 10%/50HZ				
备注：所有技术参数以提供的技术方案为准 Remarks:For all technical data, the Technical Proposal provided shall prevail.					



小件切割：

小孔直径5mm 厚度1.5mm

Small workpiece cutting:

small hole diameter of 5mm and thickness of 1.5mm.

密集型长条孔件：

厚度12mm孔宽10mm，孔间筋厚度2mm；

Concentrated strip workpiece with hole:
thickness 12mm, hole width 10mm, and rib thickness
between holes 2mm.



J2GST - 2580XD型台式高速高精度等离子切割机

J2GST - 2580XD Desk - type High - speed Superfine Plasma Cutting Machine

J2GST系列数控光纤激光切割机

J2GST SERIES CNC FIBRE LASER CUTTING MACHINE

性能特点

- 集成最先进光纤激光发生器和切割头，性能稳定；
- 高精度、高响应伺服驱动、适应快速高精度切割；
- 一体式模块化结构，分区除尘，搬迁运输更加方便；
- 整体U型焊接床身，热时效精加工处理，精度高，稳定性好；
- 铸铝合金横梁，刚性好，动态性能佳；
- 一体式可交换工作台，上下料更便捷、高效。



激光干涉仪检测精度

Check accuracy by laser interferometer

Features

- Integrated with the most advanced fiber laser generator and cutting head, and stable performance;
- High accuracy, high response servo drive, and suitable for speedy high accuracy cutting;
- One-piece modular structure, separate areas of dust removal, easy relocation and transportation;
- Integral U welded bed, heat aging treatment fine machining, high accuracy, and good stability;
- Cast aluminum alloy cross beam, good rigidity, and perfect dynamic performance;
- One-piece interchangeable table, easy and high efficient loading and unloading.

技术参数表 Technical Data

主要技术参数 (部分规格) Main Technical Data (some models)			
型号 Model	J2GST - 1530GH	J2GST - 2040GH	J2GST - 2060GH
加工板材范围 Plate range (mm)	1500 × 3000	2000 × 4000	2000 × 6000
Z轴行程 Z-axis stroke (mm)	120/280	120/280	120/280
驱动方式 Drive mode	双边驱动double-side drive		
定位精度 Positioning accuracy	0.05mm/m	0.05mm/m	0.05mm/m
重复定位精度 Repeatability positioning accuracy	0.01mm	0.01mm	0.01mm
切割厚度 Cutting thickness (mm)	0.5 - 25 (视激光功率而定 depending on laser power)		
驱动速度 Drive speed	0 ~ 120000mm/min		
除尘方式 Dust removal mode	分区除尘 (可配置滤筒式除尘器) Separate areas of dust removal (can be equipped with filter cartridge dust catcher)		
交换工作台 Interchangeable table	标配 (或根据用户需求配置) Standard configuration (or upon request of customer)		
激光器类型 Laser type	进口或国内优质品牌光纤激光器 Imported or top-rank brand fiber laser imported in China		
供电需求 Power supply requirement	380V ± 10%/50HZ		
备注: 所有技术参数以提供的技术方案为准 Remarks: For all technical data, the Technical Proposal provided shall prevail.			



J2GST - 1530GH数控光纤激光切割机
J2GST - 1530G H CNC fiber laser cutting machine



J2GST - 1580G数控光纤激光切割机
J2GST - 1580G CNC fiber laser cutting machine

J2GR系列机器人切割工作站

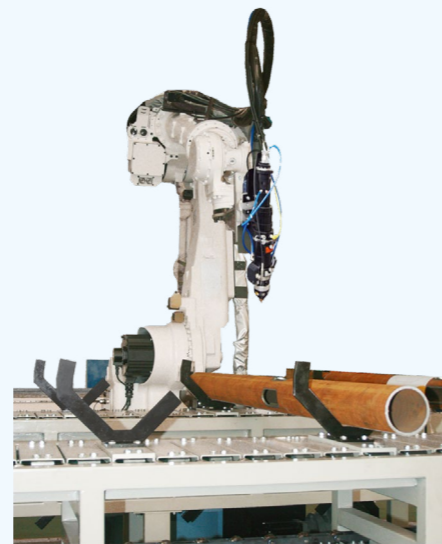
J2GR SERIES ROBOT CUTTING WORKING STATION

■ 性能特点

- 集机器人柔性技术、切割技术、自动化控制技术为一体，实现零件三维自动化切割加工；
- 固定式或可移动式结构、多工位布置满足不同的切割工艺要求；
- 集成火焰、等离子系统，可实现异型零部件的坡口切割；
- 集成激光切割系统，用于三维覆盖件孔及外形高精度切割；
- 配有可靠的寻位功能，最大限度补偿工件误差。

■ Features

- Integrated with robot flexible technology, cutting technology, and automation control technology for achieving 3D automatic cutting of parts;
- Stationary or movable structure and multi-station configuration for meeting different cutting process requirements;
- Integrated with flame and plasma systems for achieving bevel cutting of irregular parts;
- Integrated with laser cutting system for achieving high accuracy cutting of 3D panel hole and profile;
- Equipped with reliable locating function for compensation of workpiece error to a large extent.



机器人激光切割
Robot laser cutting



切割工件
Workpiece cutting



机器人火焰切割
Robot flame cutting



机器人等离子切割
Robot plasma cutting



切割工件
Workpiece cutting



激光寻位系统
laser locating system

J2XGS/J2XGR系列自动化切割生产线 J2XGS/J2XG R SERIES AUTOMATIC CUTTING LINE

性能特点

- 集数控技术、机器人柔性技术、切割技术和自动化控制技术为一体，实现零件批量切割生产；
- 配备自动上下料系统、输送定位系统，实现工件的输送、定位、切割自动化加工；
- 可集成火焰、等离子、激光切割，广泛应用于纵梁、型材等的自动化切割生产。

Features

- Integrated with CNC technology, robot flexible technology, cutting technology and automation control technology for achieving mass cutting production of parts;
- Equipped with automatic loading/unloading system and transmission positioning system for achieving automatic transmission, location, and cutting of parts;
- Integrated with flame, plasma, and laser cutting for extensive use in automatic cutting of longitudinal beam, sectional bar.



平板等离子切割线
Flat plate plasma cutting line



机器人激光纵梁切割
Robot laser longitudinal beam cutting



切割工件
Workpiece cutting



机器人等离子自动切割生产线
Robot plasma automatic cutting line

J2MH/J2DH/J2GH系列机器人自动焊接系统

J2MH/J2D H /J2G H SERIES ROBOT AUTOMATIC WELDING SYSTEM

性能特点

- 集机器人柔性技术、焊接技术和自动化控制技术为一体，实现零件自动化焊接；
- 门架、落地、高架、回转多种结构形式，多轴联动控制，适用性更强、焊接范围更广；
- 选配国内外知名品牌焊接系统，满足用户最佳焊接工艺需求；
- 可集成单双丝焊接、自由互换，超强的焊接效率；
- 可配置切割系统，实现焊割一体化设备集成。

Features

- Integrated with robot flexible technology, welding technology and automation control technology for achieving automatic part welding;
- Multiple structures such as gantry, floor-type, overhead, and rotary, multi-axis interaction control, so better adaptability and extensive welding range are available;
- Equipped with top-rank brands of welding system in the world and in China can meet the best welding process requirements from customers;
- Integrated with single/double wire welding and free interchangeable, so superior welding efficiency is available;
- Equipped with cutting system for achieving integration of welding and cutting.



焊接工件
welded workpiece



双工位泵站壳体机器人自动焊接系统
Double - station pump unit shell robot automatic welding system



龙门式机器人自动焊接系统
Gantry robot automatic welding system



大型门架机器人自动焊接系统
Large - scale gantry robot automatic welding system

数控系统主要功能和结构特点

MAIN FUNCTIONS & FEATURES OF CNC SYSTEM

Dagger NC数控系统 Dagger CNC System

■ 系统核心介绍

- 美国林肯公司开发的BURNY产品中最紧凑的专用系统；
- 继承了基于 PC 的 BURNY 产品传统，直观且易于使用的人机界面，给设备制造和使用带来灵活和方便；
- 具有基于继电器输出的 I/O, 支持等离子高级性能并集成弧压高度控制(SmartHCTM),提升了该系统可靠性和经济性。



■ System Core Introduction

- The most compact special system in BURNY product researched and developed by USA Lincoln Company;
- Inheritance of PC-based BURNY product and direct and easy to use HMI facilitate the manufacture and use of equipment;
- Equipped with relay-based output I/O, supporting plasma high performance and integrated with arc pressure height control (SmartHCTM) improve the reliability and economy of the system.

EDGE Connect数控系统 EDGE Connect CNC System

■ 系统核心介绍

- 美国海宝公司推出的全新数控系统；
- 基于软件通信体系结构的控制台以及软PLC通讯功能，可让切割床实现更多的客户定制化，降低硬件成本；
- 模块化，重量减轻，EtherCAT以太网通讯和自定义软件配置工具让客户定制化性能获得了进一步提高，在线配置工具可实现最高可达12轴的配置。

■ System Core Introduction

- All new CNC system researched and developed by USA Hupertherm Company;
- Software PLC communication function and control table based on software communication system structure can customize cutting machine by more and more customers, and reduce the hardware cost;
- Modular, lightweight, and EtherCAT Ethernet communication and customized software configuration tools make the customized performance further improved, and the online configuration tools can reach up to 12 axes.



爱科曼EXC880数控系统 ECKELMANN EXC 880 CNC System

■ 系统核心介绍

- 德国ECKELMANN集团开发的一款智能化控制系统；
- 集成所有常用输入输出和优秀的NC功能于一体的数控控制平台，预装应用程序用于等离子切割、火焰切割和激光切割技术；
- CANopen 总线数据传输，提高抗干扰性。

■ System Core Introduction

- Intelligent control system researched and developed by Germany ECKELMANN Group;
- CNC control platform is integrated with all of commonly used I/O and excellent CNC functions, and pre-installed application system is used in plasma cutting, flame cutting, and laser cutting technology;
- CANopen Busbar data transmission improves anti-interference.



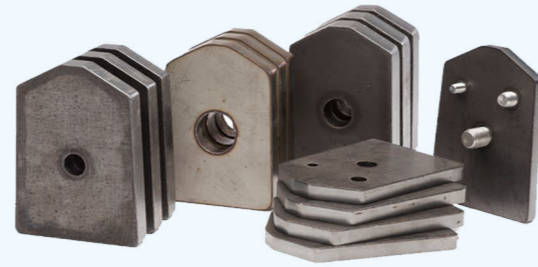
等离子系统 PLASMA SYSTEM

JIER品牌数控等离子切割产品配套的等离子电源主要以美国林肯（凯博）、美国海宝、德国凯尔贝三大品牌为主，具有多年合作基础，具备丰富的切割工艺经验，保证优越的切割性能，可提供优质配置解决方案和技术服务。

JIER CNC plasma cutting products are mainly equipped with plasma power supply from USA Lincoln (Spirit), USA Hupertherm, Germany Kjellbetg. JIER has cooperated with them for years, so rich cutting experience has been accumulated, excellent cutting performance can be ensured. And JIER can provide quality configuration solution and technical service.



切割面垂直度检测
(板厚40mm)
Verticality detection for cutsurface
(thickness:40mm)



UltraSharp™小圆孔切割技术，切割表面粗糙度 Ra12.5 ~ Ra6.3 μm
UltraSharp™ small round hole cutting technology with roughness of Ra12.5 ~ Ra6.3 μm on cut surface



SpiritII系列精细等离子切割系统
SpiritII series plasma cutting system



德国凯尔贝HF系列类激光等离子电源
Kjellbetg HF Series Laser Plasma Power Supply, Germany



美国海宝HPR系列精细等离子电源
Hupertherm HPR Series Fine Plasma Power supply, USA

德国凯尔贝等离子电源主要参数表 Main Data of Plasma Power Supply by Germany Kjellbetg

电源类别 Power supply type	普通等离子电源 Regular plasma power supply		精细等离子电源 Fine plasma power supply	
	型号规格 Model/Spec.	CutFire100i	HiFocus130	Smart_Focus300
穿孔厚度 Punching thickness (mm)	20	25	40	50
质量切割 Quality cutting (mm)	20	32	60	60
最大切割 Max. cutting (mm)	40	40	80	100
气体供应 Air supply	Air	Air/O2/Ar/H2/N2/F5		
输入功率 Input power (kW)	17	32	79	116
切割电流 Cutting current (A)	35 - 100	20 - 130	35 - 300	35 - 400

产品外形 Appearance



美国海宝等离子电源主要参数表 Main Data of Plasma Power Supply by USA Hupertherm

类别 Type	普通等离子电源 Regular plasma power supply		精细等离子电源 Fine plasma power supply	
	型号 Model	PowerMax85/105/MaxPro200	HPR130XD	HPR260XD
穿孔厚度 Punching thickness (mm)	20/22/32	25	32	50
质量切割 Quality cutting (mm)	16/20/20	16	32	38
最大切割 Max. cutting (mm)	38/50/75	38	64	80
气体供应 Air supply	Air/O2/N2	Air/O2/Ar/H2/N2/F5		
输入功率 Input power (kW)	12.2/16.8/33	19.5	45.5	80
切割电流 Cutting current (A)	30 - 200	30 - 130	30 - 260	30 - 400

产品外形 Appearance



美国林肯等离子电源主要参数表 Main Data of Plasma Power Supply by USA Lincoln

类别 Type	普通等离子电源 Regular plasma power supply		精细等离子电源 Fine plasma power supply	
	型号 Model	FLEXCUTTM125	SpiritII150	SpiritII275
穿孔厚度 Punching thickness (mm)	25	25	32	50
质量切割 Quality cutting (mm)	20	20	25	32
最大切割 Max. cutting (mm)	38	38	50	75
气体供应 Air supply	Air	Air/O2/N2/H17		
输入功率 Input power (kW)	17.5	25.5	44	80
切割电流 Cutting current (A)	20 - 125	30 - 150	30 - 275	30 - 400

产品外形 Appearance



名牌产品 优质服务 FAMOUS PRODUCT GOOD SERVICE

- 济南二机床集团有限公司铸造与切割设备公司从设备选型、技能培训、安装调试、技术支持、售后服务到配件供应，实行终身服务，体现了客户至上的服务宗旨。
- 我们愿与国内外朋友进行合作，竭诚为客户提供高质量的产品和优质的服务。
- Foundry & Cutting Equipment Company of JIER Machine-tool Group Co., Ltd. (JIER Group) carries out a life-long service, from model selection, technical training, installation & commissioning, technical support, after-sales service to spare parts supply. JIER cherishes the service concept: Customer is God.
- We're sincerely willing to cooperate with domestic and abroad friends, and supply quality equipment and service for customers.



名牌产品 优质服务 FAMOUS PRODUCT GOOD SERVICE



部分用户 A Portion of Customers

