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大德激光 *DADE LASER*

dade laser

全球领先的激光精密加工解决方案供应商

A leading global supplier of laser precision machining solutions

Shuiyin

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LASER

激光器

COMPANY PROFILE

公司简介

深圳市大德激光技术有限公司
Shenzhen Dade Laser Technology Co., Ltd

大德激光成立于2013年，是国家级高新技术企业、专精特新企业。公司以激光焊接、激光精雕、激光标刻、激光清洗和激光切割的应用为技术主体，致力于激光设备、自动化设备和自动化生产线的研发、生产、销售和技术服务。

公司于2014年开始聚焦于电池制造领域，在电池制造领域提供激光设备和自动化设备。涉及了顶盖、电芯、电池模组和电池PACK等全产业链的激光设备的供应。

公司自设立以来，秉承“成为全球领先的激光精密加工解决方案提供商”的发展愿景，致力于为电池、消费电子、新材料等领域的客户提供全方位个性化、专业化的精密激光加工应用解决方案。

DaDe Laser was founded in 2013 and is a national high-tech enterprise and specialized new enterprise. The company's main focus is on the application of laser welding, laser engraving, laser marking, laser cleaning, and laser cutting, and is committed to the research and development, production, sales, and technical service of laser equipment, automation equipment, and automated production lines.

In 2014, the company began to focus on the field of battery manufacturing, providing laser equipment and automation equipment for battery manufacturing, including the supply of laser equipment for the entire industry chain of cover, battery core, battery module, and battery pack.

Since its establishment, the company has adhered to the development vision of "becoming a global leading provider of precision laser processing solutions", and is committed to providing personalized and professional precision laser processing application solutions for customers in the fields of batteries, consumer electronics, new materials, and other areas.

国家级高新技术企业 National level high-tech enterprise

省激光工程技术研究中心 Provincial Laser Engineering Technology Research Center

国家标准起草单位 National standard drafting unit

深圳大学产学研合作基地 Shenzhen University Industry University Research Cooperation Base



68

发明专利68项
68 invention patents
已授权数量39项
39 authorized items

15

实用新型专利
Utility model patent
已授权数量15个
Authorized quantity 15

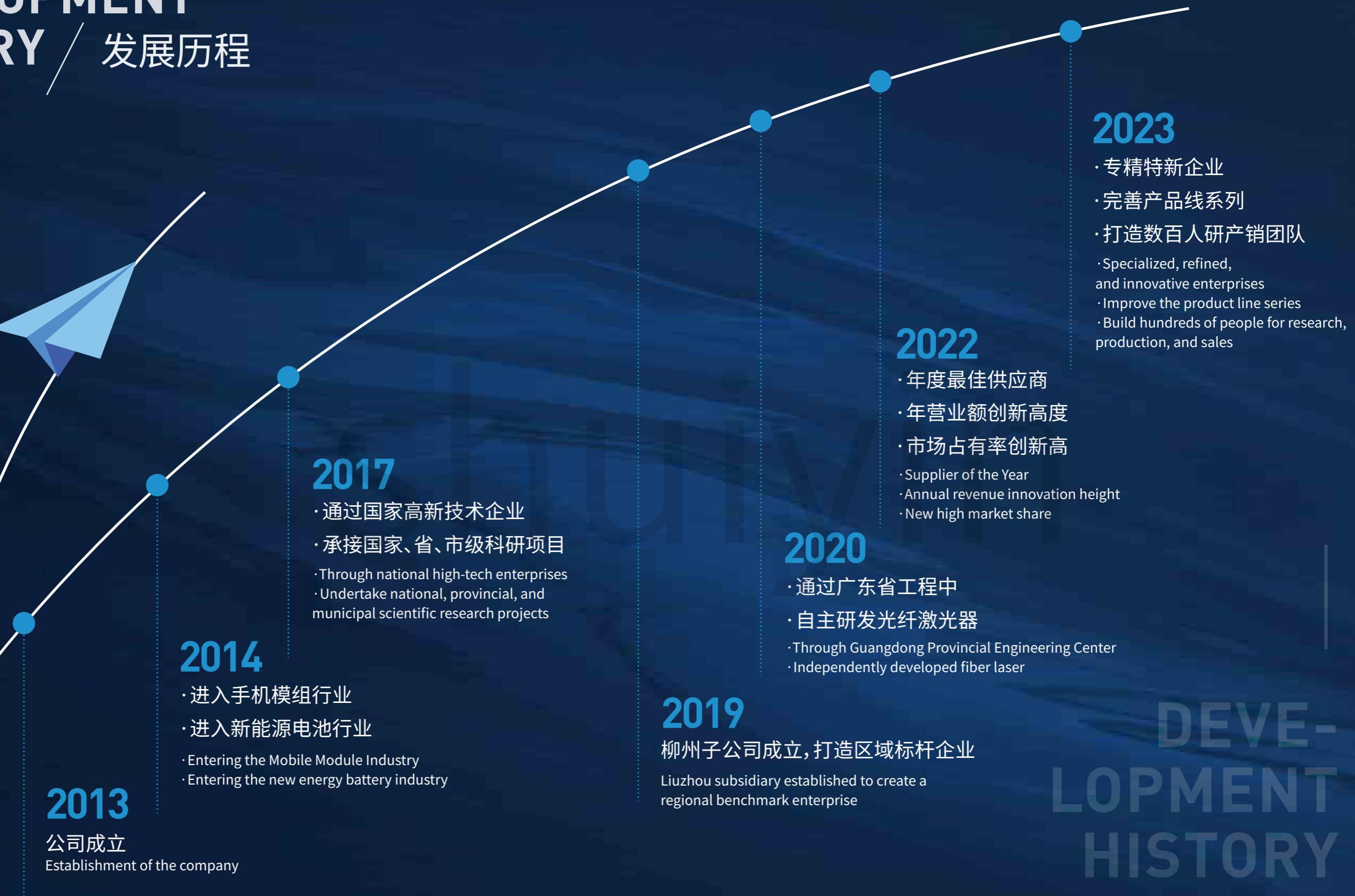
28

软件著作权
Software copyright
已授权数量28个
Authorized quantity 28

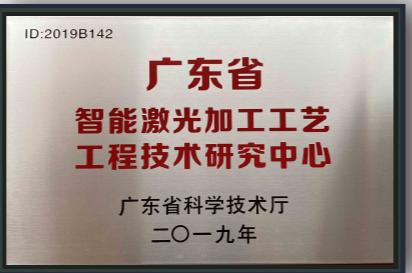
07

外观专利
Appearance patent
已授权数量7个
Authorized quantity 7

DEVELOPMENT HISTORY / 发展历程



CERTIFICATE OF HONOR / 荣誉证书



01 WELDING SYSTEM 产品介绍 焊接系统

THREE-DIMENSIONAL FIBER LASER WELDING SYSTEM

三维光纤激光焊接系统



参数介绍

激光功率: 1000W-3000W
激光器类型: 连续光纤激光器(芯径可定制)
出射头规格: 榨直焊接头
焊接综合速度: 60mm/s-100mm/s
运动控制: XYZ三轴控制

功能介绍

主要功能: 用于防爆片、极柱等顶盖结构件焊接、铝铜铁等金属的焊接；
使用场景: 可以配合自动线设备、单工作站使用，安装简便，结构稳定；

Parameter Introduction

Laser power: 1000W-3000W
Laser type: Continuous fiber laser (core diameter can be customized)
Exit head specification: Collimating welding head
Welding comprehensive speed: 60mm/s-100mm/s
Motion control: XYZ three-axis control

Function Introduction

Main function: This galvanometer system is mainly used for welding explosion-proof pieces, polar columns, pins, wings and other top cover structural components, as well as welding other non-standard metal structural components;
Usage scenario: It can be used with automatic line equipment or single workstation, easy to install, and structurally stable.

GALVANOMETER LASER WELDING SYSTEM

振镜激光焊接系统

参数介绍

激光功率: 500W-6000W
激光器类型: 单模光纤激光器、多模光纤激光器、复合激光器、环形光斑激光器、QCW光纤激光器等
振镜焦距: 255、330、400、460等
焊接综合速度: 60mm/s-120mm/s
运动控制: 电动Z轴或手摇Z轴(可选)



功能介绍

主要功能: 用于防爆片、极柱、引脚、羽翼等顶盖结构件的焊接；
使用场景: 可以配合自动线设备、单工作站使用，安装简便，结构稳定；

Parameter Introduction

Laser power: 500W-6000W
Laser types: Single-mode fiber laser, multi-mode fiber laser, hybrid laser, annular beam laser, QCW fiber laser, etc.
Galvanometer focal length: 255, 330, 400, 460, etc.
Welding comprehensive speed: 60mm/s-120mm/s
Motion control: Electric Z-axis or hand-cranked Z-axis (optional)

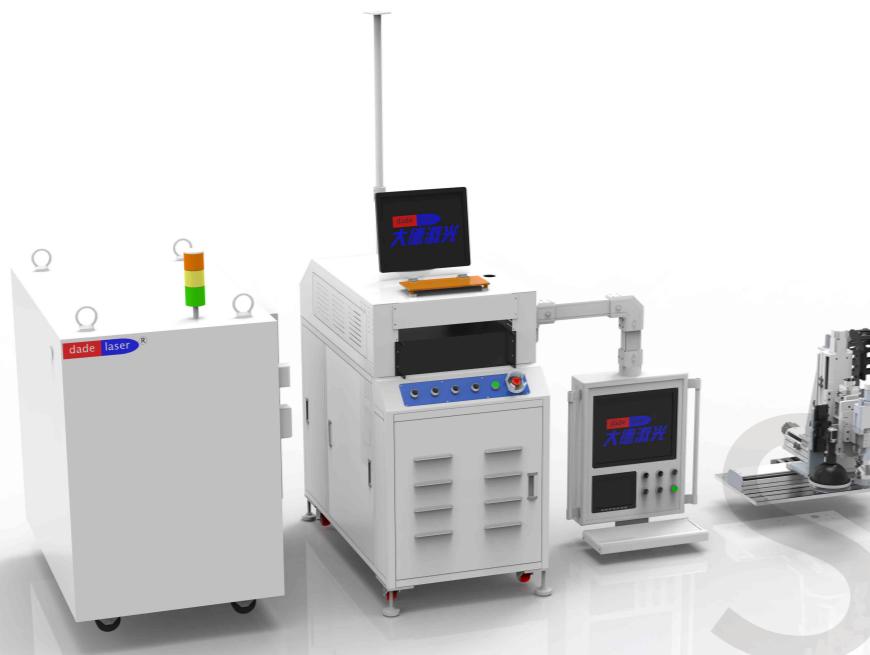


Function Introduction

Main function: used for welding explosion-proof films, pole pieces, pins, wings, and other cover structural parts, as well as other non-standard metal structural parts welding;
Usage scenario: can be used with automatic line equipment, single workstation, easy to install, and stable structure.

ANNULAR BEAM LASER WELDING SYSTEM

环形光斑激光焊接系统



参数介绍

激光功率: 3000W-6000W (1000+2000, 1500+1500, 2000+2000, 2000+4000, 3000+3000等)
激光器类型: 环形光斑激光器 (芯径可定制)
出射头规格: 准直焊接头或振镜
焊接综合速度: 60mm/s-120mm/s
运动控制: XYZ三轴控制或Z轴振镜系统 (可选)

功能介绍

主要功能: 用于防爆片、极柱、引脚、羽翼等顶盖结构件的焊接, 顶盖封口满焊、Busbar焊接等;
使用场景: 可以配合自动线设备、单工作站使用, 安装简便, 结构稳定;

Parameter Introduction

Laser power: 3000W-6000W (1000+2000, 1500+1500, 2000+2000, 2000+4000, 3000+3000, etc.);
Laser types: annular beam laser (core diameter can be customized);
Exit head specification: collimator welding head or mirror;
Welding speed: 60mm/s-120mm/s;
Motion control: XYZ three-axis control or Z-axis mirror system (optional).

Function Introduction

Main functions: used for welding explosion-proof films, pole pieces, pins, wings, and other cover structural parts, cover sealing full welding, Busbar welding, etc.;
Usage scenarios: can be used with automatic line equipment, single workstation, easy to install, and stable structure.

HYBRID LASER WELDING SYSTEM

复合激光焊接系统



参数介绍

Laser power: 2000W-4000W;
Laser types: continuous fiber laser + semiconductor laser (core diameter can be customized);
Exit head specification: composite welding head;
Welding speed: 60mm/s-100mm/s;
Motion control: XYZ three-axis control.

功能介绍

主要功能: 用于防爆片、极柱等顶盖结构件焊接, 顶盖封口满焊等;
使用场景: 可以配合自动线设备、单工作站使用, 安装简便, 结构稳定;

Function Introduction

Main functions: used for welding explosion-proof films, pole pieces, and other cover structural parts, cover sealing full welding, etc.;
Usage scenarios: can be used with automatic line equipment, single workstation, easy to install, and stable structure.

02

WELDING MACHINE

产品介绍 焊接单机

STANDARD WELDING MACHINE

标准焊接单机

参数介绍

激光功率: 500W-6000W
激光器类型: 单模光纤激光器、多模光纤激光器、复合激光器、环形光斑激光器、QCW光纤激光器等
出射头规格: 复合焊、准直头、振镜等(可选配)
焊接综合速度: 60mm/s-120mm/s
运动控制: XYZ三轴控制



主要功能

主要用于防爆片、极柱、引脚、羽翼等顶盖结构件焊接；
顶盖封口满焊等；其他非标金属件的焊接。



Parameter Introduction

Laser power: 500W-6000W;
Laser types: single-mode fiber laser, multimode fiber laser, composite laser, annular beam laser, QCW fiber laser, etc.;
Exit head specification: composite welding, collimator head, mirror, etc. (optional);
Welding speed: 60mm/s-120mm/s;
Motion control: XYZ three-axis control.

Main Functions

It is mainly used for welding explosion-proof pieces, polar columns, pins, wings and other top cover structural components, sealing welding of top cover and welding other non-standard metal components.

ROTATING DUAL-WORKSTATION WELDING MACHINE

旋转双工位焊接机

参数介绍

激光功率: 500W-6000W
激光器类型: 单模光纤激光器、多模光纤激光器、复合激光器、环形光斑激光器、QCW光纤激光器等
出射头规格: 复合焊、准直头、振镜等(可选配)
焊接综合速度: 60mm/s-120mm/s
运动控制: XYZ三轴控制, 旋转双工位工作台



主要功能

主要用于防爆片、极柱、引脚、羽翼等顶盖结构件焊接；
顶盖封口满焊等；其他非标金属件的焊接。

Parameter Introduction

Laser power: 500W-6000W;
Laser types: single-mode fiber laser, multimode fiber laser, composite laser, annular beam laser, QCW fiber laser, etc.;
Exit head specification: composite welding head, mirror, etc. (optional);
Welding speed: 60mm/s-120mm/s;
Motion control: XYZ three-axis control, rotating dual-station worktable.



Main Functions

It is mainly used for welding explosion-proof pieces, polar columns, pins, wings and other top cover structural components, sealing welding of top cover and welding other non-standard metal components.

FOUR-STATION GALVANOMETER WELDING MACHINE

四工位振镜焊接机

参数介绍

激光功率: 500W-6000W
激光器类型: 单模光纤激光器、环形光斑激光器、复合激光器
出射头规格: 复合焊接头、振镜等(可选配)
焊接综合速度: 60mm/s-120mm/s
运动控制: XYZ三轴控制, 旋转四工位工作台

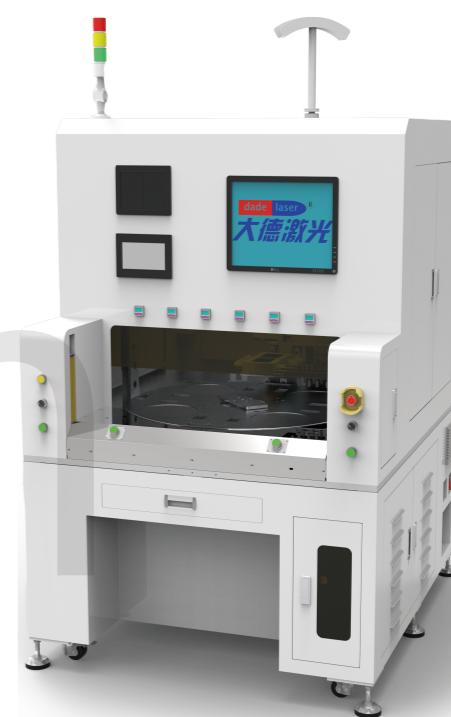


主要功能

专用于防爆片焊接；可实现防爆片正反检测、盖板防呆检测、焊接定位、焊接吹氮除尘、盖板整平、激光刻码、在线读码、数据同步绑定等。

Parameter Introduction

Laser power: 500W-6000W;
Laser types: single-mode fiber laser, annular beam laser, composite laser;
Exit head specification: composite welding head, mirror, etc. (optional);
Welding speed: 60mm/s-120mm/s;
Motion control: XYZ three-axis control, rotating four-station worktable.



Main Functions

Specialized for explosion-proof piece welding; it can realize explosion-proof piece positive and reverse detection, cover plate anti-misoperation detection, welding positioning, welding nitrogen blowing and dust removal, cover plate leveling, laser marking, online code reading, data synchronous binding, etc.

FOUR-STATION ROTATING PRESSURE WELDING MACHINE

四工位旋转压焊单机

参数介绍

激光功率: 3000W-4000W
激光器类型: 环形光斑激光器、复合激光器
出射头规格: 复合焊接头、准直焊接头等(可选配)
焊接综合速度: 60mm/s-120mm/s
运动控制: XYZ三轴控制, 旋转四工位工作台



主要功能

专用于极柱焊接; 可实现极柱正反检测、防呆检测、焊接定位、焊接除尘、盖板整平、在线读码、数据同步绑定等。

Parameter Introduction

Laser power: 3000W-4000W;
Laser types: annular beam laser, composite laser;
Exit head specification: composite welding head, collimator welding head, etc. (optional);
Welding speed: 60mm/s-120mm/s;
Motion control: XYZ three-axis control, rotating four-station worktable.



Main Functions

专用于极柱焊接; 它可以实现极柱正反检测、防呆检测、焊接定位、焊接除尘、盖板整平、在线读码、数据同步绑定等功能。

DOUBLE SLIDE THREE-AXIS WELDING MACHINE

双滑台三轴焊接机

参数介绍

激光功率: 3000W-4000W
激光器类型: 环形光斑激光器、复合激光器
出射头规格: 复合焊接头、准直焊接头等(可选配)
焊接综合速度: 60mm/s-120mm/s
运动控制: XYZ三轴控制, 双滑台双工位工作台



主要功能

专用于极柱焊接; 可实现极柱正反检测、防呆检测、焊接定位、焊接除尘、盖板整平、在线读码、数据同步绑定等。

Parameter Introduction

Laser power: 3000W-4000W;
Laser types: annular beam laser, composite laser;
Exit head specification: composite welding head, collimator welding head, etc. (optional);
Welding speed: 60mm/s-120mm/s;
Motion control: XYZ three-axis control, dual-slide dual-station worktable.



Main Functions

专用于极柱焊接; 它可以实现极柱正反检测、防呆检测、焊接定位、焊接除尘、盖板整平、在线读码、数据同步绑定等功能。

03

WELDING WORKSTATION

产品介绍 焊接工作站

EXPLOSION-PROOF FILM WELDING WORKSTATION

防爆片焊接工作站

参数介绍

打标激光功率: 20W-50W
焊接激光功率: 1000W-3000W
激光器类型: 单模光纤激光器、复合激光器
出射头规格: 振镜、复合焊接头、准直焊接头等(可选配)
焊接综合速度: 60mm/s-120mm/s
产出效率: 15PPM-30PPM (根据具体产品型号确定)
运动控制: 多轴控制, 旋转四工位主体结构

主要功能

主要用于防爆片、极柱、引脚、羽翼等顶盖结构件焊接;
顶盖封口满焊等;其他非标金属件的焊接。

Parameter Introduction

Marking laser power: 20W-50W;
Welding laser power: 1000W-3000W;
Laser types: single-mode fiber laser, composite laser;
Exit head specification: mirror, composite welding head, collimator welding head, etc. (optional);
Welding speed: 60mm/s-120mm/s;
Output efficiency: 15PPM-30PPM (depending on the specific product model);
Motion control: multi-axis control, linear main structure.



Main Functions

Specialized for explosion-proof piece assembly welding; it includes automatic loading and unloading of light aluminum plates, automatic loading and unloading of explosion-proof pieces, anti-misoperation detection, laser marking, laser welding, shaping, online code reading, post-welding detection, data synchronous binding, etc.

工艺流程



盖板上料 → 来料检测 → 自动刻码 → 读码检测 → 防爆片上料 → 激光焊接 → 焊后检测 → 自动下料
 Cover plate feeding → Incoming material inspection → Automatic coding → Code reading and inspection → Explosion-proof piece feeding → Laser welding → Post-welding inspection → Automatic unloading.

POLE CAP WELDING WORKSTATION

极柱焊接工作站

参数介绍

激光功率: 1500W-4000W
激光器类型: 单模光纤激光器、环形光斑激光器、复合激光器
出射头规格: 振镜、复合焊接头、准直焊接头等(可选配)
焊接综合速度: 60mm/s-120mm/s
产出效率: 15PPM-30PPM (根据具体产品型号确定)
运动控制: XYZ三轴控制, 旋转四工位主体结构、传送带实现上下游对接

主要功能

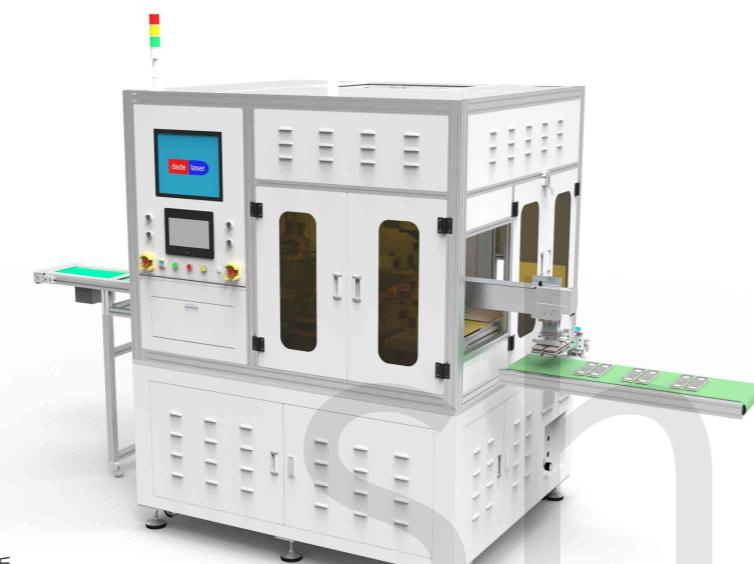
专用于铆接极柱焊接;包括防呆检测、焊接定位、焊接除尘、盖板整平、在线读码、焊后检测、数据同步绑定等。

Parameter Introduction

Laser power: 1500W-4000W;
Laser types: single-mode fiber laser, annular beam laser, composite laser;
Exit head specification: mirror, composite welding head, collimator welding head, etc. (optional);
Welding speed: 60mm/s-120mm/s;
Output efficiency: 15PPM-25PPM (depending on the specific product model);
Motion control: XYZ three-axis control, rotating four-station main structure, conveyor belt for upstream and downstream docking.

Main Functions

专制化极柱铆接;包括防呆检测、焊接定位、焊接除尘、盖板整平、在线读码、焊后检测、数据同步绑定等。



工艺流程



上游设备来料 来料检测 自动上料 产品定位 焊接 焊后检测 自动下料到下游设备

Incoming equipment → Incoming material inspection → Automatic feeding → Product positioning → Welding → Post-welding inspection → Automatic unloading to downstream equipment.

SIMPLIFIED POLE CAP WELDING WORKSTATION

极简极柱焊接工作站

参数介绍

焊接激光功率: 3000W
激光器类型: 环形光斑激光器、复合激光器
出射头规格: 复合焊接头、定制焊接头等(可选配)
焊接综合速度: 60mm/s-120mm/s
产出效率: 20PPM-32PPM (根据具体产品型号确定)
运动控制: 多轴控制, 直线型主体结构

主要功能

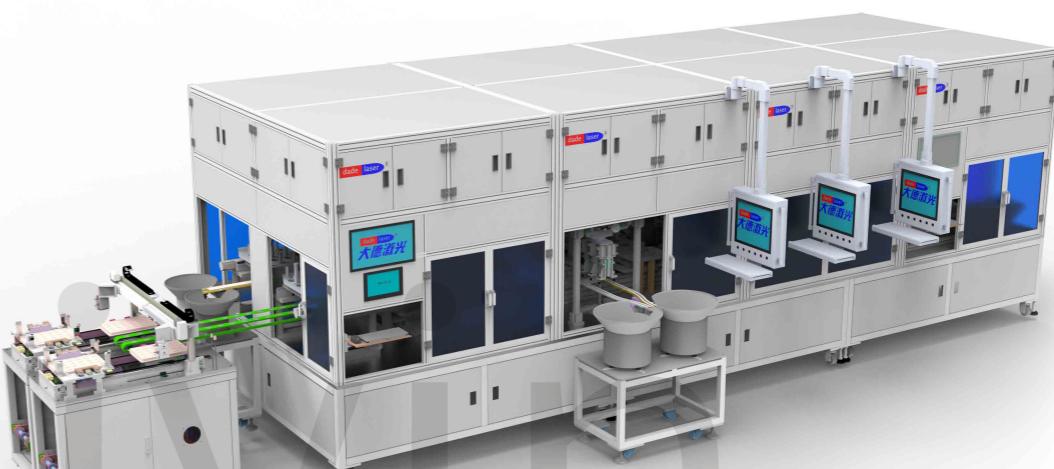
专制化极柱铆接和焊接;包括光铝板自动上料、极柱上料、配件上料、自动组装、防呆检测、激光焊接、整形、在线读码、焊后检测、数据对接MES等。

工艺流程



上料组装 来料检测 在线读码 激光焊接 焊后检测 自动下料

Feeding and assembly → Incoming material inspection → Online code reading → Laser welding → Post-welding inspection → Automatic unloading.



Parameter Introduction

Welding laser power: 3000W;
Laser types: annular beam laser, composite laser;
Exit head specification: composite welding head, customized welding head, etc. (optional);
Welding speed: 60mm/s-120mm/s;
Output efficiency: 20PPM-32PPM (depending on the specific product model);
Motion control: multi-axis control, linear main structure.

Main Functions

专制化极柱铆接和焊接;包括光铝板自动上料、极柱上料、配件上料、自动组装、防呆检测、激光焊接、整形、在线读码、焊后检测、数据对接MES等。

INSPECTION WORKSTATION

检测工作站



参数介绍

设备尺寸: 4000mm×2000mm

产出效率: 20-32PPM

运动控制: 多轴控制, 直线型主体结构

主要功能

主要用于防爆片、极柱、引脚、羽翼等顶盖结构件焊接；
顶盖封口满焊等；其他非标金属件的焊接。

Parameter Introduction

Equipment size: 4000mm×2000mm;

Output efficiency: 20-32PPM;

Motion control: multi-axis control, linear main structure.

Main Functions

Specialized in electrical function testing and size detection of cover plate; at the same time, customized airtightness detection function can be provided. It includes automatic loading and unloading, automatic detection, and other functions.

BUSBAR WELDING WORKSTATION

Busbar焊接工作站



Parameter Introduction

Welding laser power: 6000W

Laser type: annular beam laser, fiber laser

Emission head specifications: galvanometer (optional)

Welding comprehensive speed: 60mm/s-120mm/s

Motion control: multi-axis control, linear main structure, track transportation.

参数介绍

焊接激光功率: 6000W

激光器类型: 环形光斑激光器、光纤激光器

出射头规格: 振镜(可选配)

焊接综合速度: 60mm/s-120mm/s

运动控制: 多轴控制, 直线型主体结构、轨道运输

主要功能

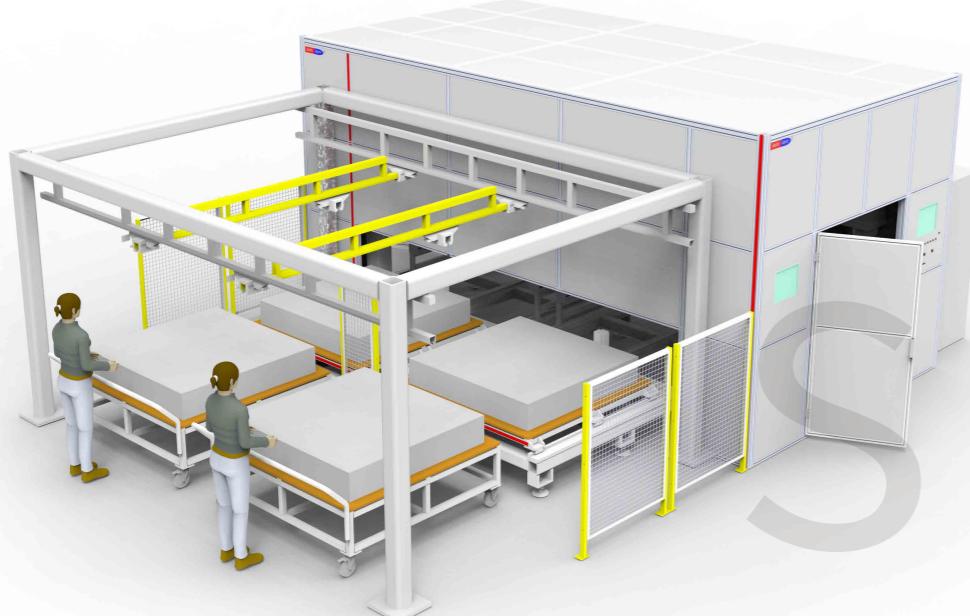
主要用于防爆片、极柱、引脚、羽翼等顶盖结构件焊接；
顶盖封口满焊等；其他非标金属件的焊接。

Main Functions

Specialized in Busbar welding; it includes manual loading and unloading, or docking with automatic assembly line equipment, automatic addressing, automatic alignment, automatic distance measurement, automatic welding, etc.

BATTERY PACK WELDING WORKSTATION

电池包焊接工作站



Parameter Introduction

参数介绍

焊接激光功率: 4000W-6000W
适用物料尺寸范围: ≤1.5m*1.3m*0.5m
激光器类型: 环形光斑光纤激光器、光纤激光器
出射头规格: 振镜(可选配)
焊接综合速度: 60mm/s-120mm/s
运动控制: 龙门式四轴控制, 双滑台进出

主要功能

专用于电池包Busbar的焊接;人工推车至设备滑台, 自动寻址、自动对位、自动测距、自动焊接等。

04 AUTOMATION SYSTEM

产品介绍

自动化整线

Main Functions

Specialized in Busbar welding of battery pack; manually push the trolley to the equipment slide, automatic addressing, automatic alignment, automatic distance measurement, automatic welding, etc.

SHELL WELDING AUTOMATIC LINE

壳体焊接自动线



工艺流程

- 1 壳体刻码 2 防爆片焊接 3 气密性检测 4 外观尺寸检测 5 贴膜 6 除尘

Housing coding → Explosion-proof piece welding → Air tightness testing → Appearance size inspection
→ Film pasting → Dust removal.

参数介绍

产出效率: 15PPM-30PPM (根据具体产品型号确定)
激光功率: 1000W-3000W
激光器类型: 单模光纤激光器、复合激光器
出射头规格: 振镜、复合焊接头、准直焊接头等 (可选配)
焊接综合速度: 60mm/s-120mm/s
运动控制: 多轴控制

Parameter Introduction

Output efficiency: 15PPM-25PPM (depending on the specific product model);
Laser power: 1000W-3000W;
Laser types: single-mode fiber laser, composite laser;
Exit head specification: mirror, composite welding head, collimator welding head, etc. (optional);
Welding speed: 60mm/s-120mm/s;
Motion control: multi-axis control.

主要功能

专用于壳体防爆片组装焊接;包括自动上下料、防呆检测、激光刻码、激光焊接、整形、在线读码、焊后检测、气密性检测、外观尺寸检测、贴膜、除尘、数据同步绑定等。

Main Functions

Specialized in assembly and welding of explosion-proof pieces for the housing; it includes automatic loading and unloading, anti-misoperation detection, laser marking, laser welding, shaping, online code reading, post-welding detection, airtightness detection, appearance size detection, film sticking, dust removal, data synchronous binding, etc.

SQUARE TOP COVER PLATE AUTOMATIC PRODUCTION LINE

方形顶盖板自动生产线



工艺流程



Automatic loading and unloading → Assembly → Coding → Explosion-proof piece welding → Pole welding → Air tightness testing → Electrical measurement → Film pasting → Automatic unloading.

参数介绍

产出效率: 20PPM-30PPM (根据具体产品型号确定)
激光器类型: 单模光纤激光器、复合激光器、环形光斑激光器
焊接综合速度: 60mm/s-120mm/s
整线良率: >98% (来料不良除外)
运动控制: 多轴控制

主要功能

专用于电芯顶盖的全线生产;包括自动上下料、防呆检测、激光刻码、铆接、激光焊接、整形定位、在线读码、焊后检测、气密性测试、电测、数据同步绑定等。

Parameter Introduction

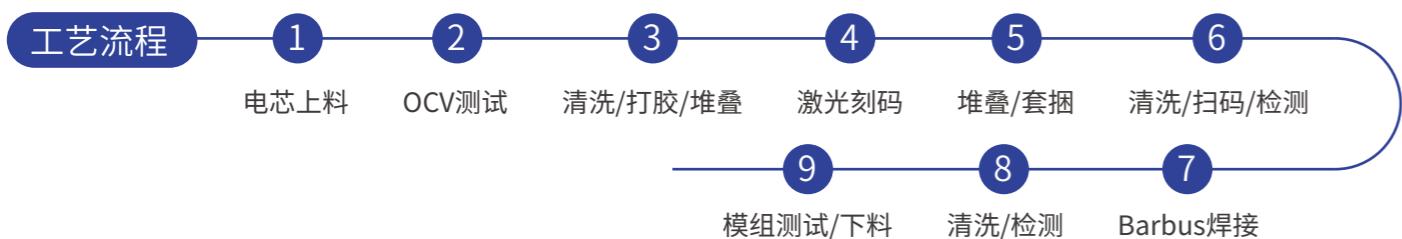
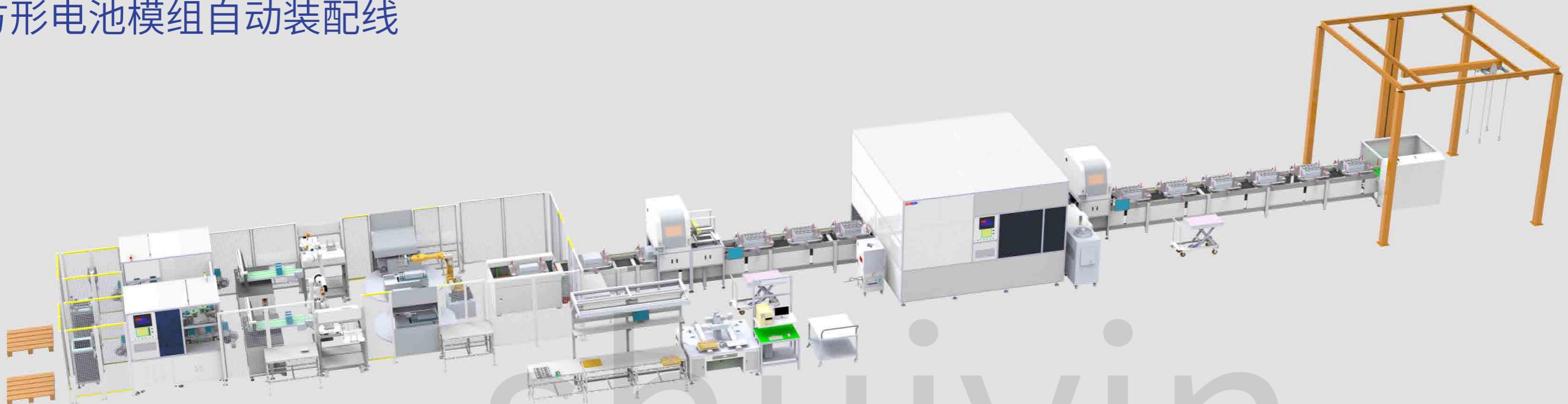
Output efficiency: 20PPM-30PPM (depending on the specific product model);
Laser types: single-mode fiber laser, composite laser, annular beam fiber laser;
Welding speed: 60mm/s-120mm/s;
Overall yield: >98% (excluding poor quality materials);
Motion control: multi-axis control.

Main Functions

Specialized in full-line production of top cover for battery cells; it includes automatic loading and unloading, anti-misoperation detection, laser marking, riveting, laser welding, shaping and positioning, online code reading, post-welding detection, airtightness testing, electrical measurement, data synchronous binding, etc.

SQUARE BATTERY MODULE AUTOMATIC ASSEMBLY LINE

方形电池模组自动装配线



Battery cell feeding → OCV testing → Cleaning/gluing/stacking → Laser coding → Stacking/bundling → Cleaning/scanning/testing → Barbus welding → Cleaning/testing → Module testing/unloading.

参数介绍

整线外观尺寸: 26000*7400*2300mm

产出效率: ≥12PPM (根据具体产品型号确定)

适配产品: 方形电芯模组

运动控制: 多轴控制、可实现整线自动化

Parameter Introduction

Overall dimensions: 26000*7400*2300mm;

Output efficiency: ≥12PPM (depending on the specific product model);

Applicable product: square battery module;

Motion control: multi-axis control, capable of achieving full line automation.

主要功能

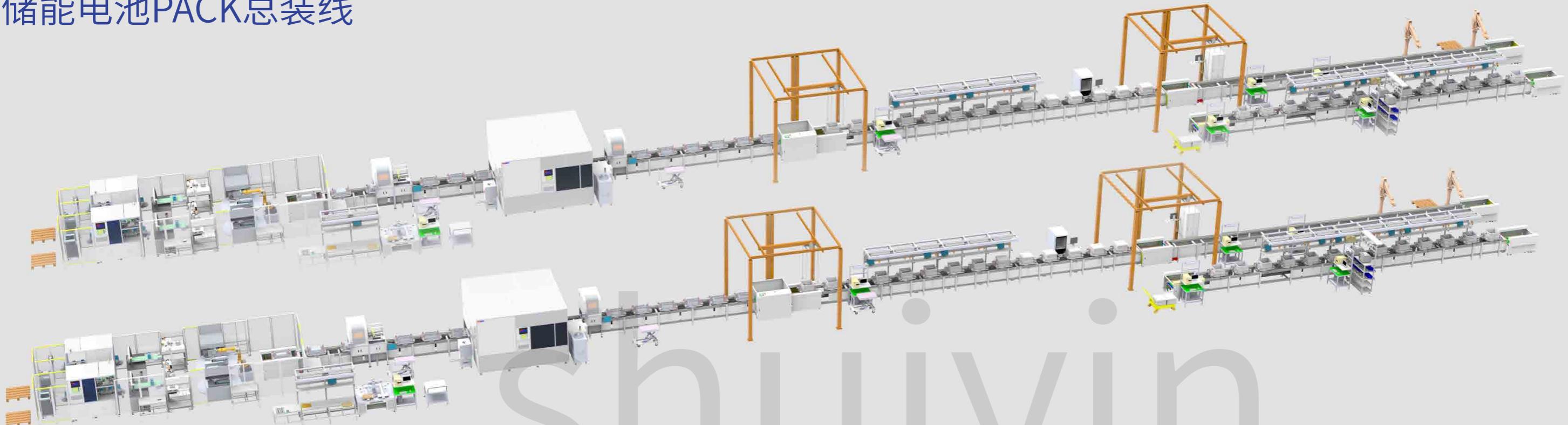
专用于方形电池模组装配，整线实现自动化生产。包括自动上下料、电测、防呆检测、组装、激光刻码、激光焊接、焊后清洗、焊后检测、模组功能测试等。

Main Functions

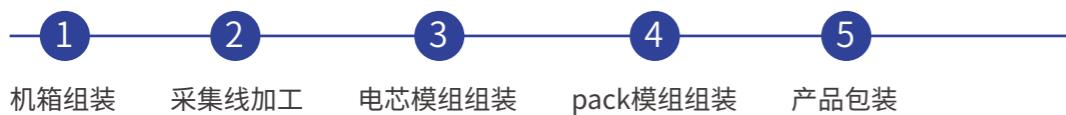
Specialized in assembly and production of square battery modules, achieving full-line automation; it includes automatic loading and unloading, electrical measurement, anti-misoperation detection, assembly, laser marking, laser welding, post-welding cleaning, post-welding detection, module function testing, etc.

ENERGY STORAGE BATTERY PACK ASSEMBLY LINE

储能电池PACK总装线



工艺流程



Chassis assembly → Acquisition line processing → Battery module assembly → Pack module assembly → Product packaging.

参数介绍

整线外观尺寸: 68000*9000*2300mm
产出效率: 35UPH-50UPH (根据具体产品型号确定)
适配产品: 方形电芯模组
运动控制: 多轴控制、可实现整线自动化

主要功能

储能PACK组装方案, 包含了完整的整线整工序的组装工艺, 机箱组装工艺、采集线加工段、电芯模组组装段、pack模组组装段、产品包装段等。

Parameter Introduction

Overall dimensions: 68000*9000*2300mm
Output efficiency: 35UPH-50UPH (depending on the specific product model);
Applicable product: square battery module;
Motion control: multi-axis control, capable of achieving full line automation.

Main Functions

Energy storage PACK assembly scheme, including complete assembly process of the entire production line, such as chassis assembly process, acquisition line processing section, battery cell module assembly section, pack module assembly section, and product packaging section.

05

PRECISION MACHINING

产品介绍
精密加工



SHELL CARVING MACHINE

壳体精雕机

参数介绍

产出效率: 15PPM-20PPM(根据具体产品型号确定)
激光配置: 50W皮秒激光器
运行方式: 可实现全自动化运行
加工精度: 深度控制 $\pm 5\mu\text{m}$, 宽度控制 $\pm 5\mu\text{m}$
合格率: $\geq 99.5\%$
故障率: $\leq 2\%$

功能介绍

全自动壳体精雕机主要应用于3C类电池的不锈钢壳体防爆泄压槽的精密加工、壳盖的防爆泄压槽的精密加工、方形电芯壳体的防爆泄压槽的精密加工。
 设备采用光纤皮秒激光器作为激光光源，通过高精度数字振镜控制光束的轨迹运动。光束直接作用于材料表面，完成不同深度及结构微槽的加工，具有加工高精度、灵活性强等优点。

Parameter Introduction

Output efficiency: 15PPM-20PPM (depending on the specific product model);
Laser configuration: 50W picosecond laser;
Operation mode: capable of achieving full automation;
Processing accuracy: depth control $\pm 5\mu\text{m}$, width control $\pm 5\mu\text{m}$;
Qualification rate: $\geq 99.5\%$;
Failure rate: $\leq 2\%$.

Function Introduction

The fully automatic steel coil laser engraving machine is mainly used for precision machining of explosion-proof pressure relief grooves in stainless steel casings of 3C type batteries, precision machining of explosion-proof pressure relief grooves in shell covers, and precision machining of explosion-proof pressure relief grooves in square battery cell casings.

The equipment uses a fiber picosecond laser as the laser source and controls the trajectory of the beam through high-precision digital galvanometer. The beam directly acts on the material surface to complete the processing of micro grooves with different depths and structures, with the advantages of high precision processing and strong flexibility.

SHELL INSPECTION MACHINE

壳体全检机

参数介绍

产出效率: 20PPM-24PPM(根据具体产品型号确定)
检测配置: 3D线扫测量仪、激光测距仪, 2000W像素CCD
运行方式: 可实现全自动化运行
检测精度: 最高±1μm
过杀率: ≤1.5%
漏检率: ≤0%

功能介绍

设备用于纽扣电池壳体的精密测量, 测量项目包括壳体底部厚度, 防爆阀深度, 壳口轮廓度, 壳口直径, 壳体高度, 防爆阀位置度, 注液孔直径与位置度等。

Parameter Introduction

Output efficiency: 20PPM-24PPM (depending on the specific product model);
Detection configuration: 3D line scanning measuring instrument, laser ranging instrument, 2000W pixel CCD;
Operation mode: capable of achieving full automation;
Detection accuracy: up to ±1μm;
False rejection rate: ≤1.5%;
Leakage detection rate: ≤0%.



Function Introduction

The equipment is used for precise measurement of button cell shell. The measurement items include shell bottom thickness, explosion-proof valve depth, shell mouth profile, shell mouth diameter, shell height, explosion-proof valve position, liquid injection hole diameter and position.

COVER PLATE FLATNESS TESTING MACHINE

盖板平面度检测机

参数介绍

检测仪器: 3D线扫测量仪, 激光测距仪
运行方式: 半自动
检测精度: ±5μm
过杀率: ≤3%
漏检率: ≤0%

功能介绍

设备用于动力电池盖板的精密测量, 测量项目包括盖板平面度, 极柱高度, 两极柱平行度, 极柱平面度, 盖板长度, 盖板宽度, 引脚间距等。

Parameter Introduction

Instrument: 3D line scanning measuring instrument, laser ranging instrument;
Operating mode: semi-automatic;
Detection accuracy: ±5μm;
False rejection rate: ≤3%;
Leakage detection rate: ≤0%.



Function Introduction

The equipment is used for precise measurement of power battery cover plates, with measurement items including cover plate flatness, pole height, two pole parallelism, pole flatness, cover plate length, cover plate width, pin spacing, etc.

STEEL COIL CARVING MACHINE

钢卷精雕机



参数介绍

产出效率: 20PPM-25PPM(根据具体产品型号确定)
激光配置: 50W皮秒激光器
运行方式: 可实现全自动化运行
加工精度: 深度控制±5μm, 宽度控制±5μm
合格率: ≥99.5%
故障率: ≤2%



功能介绍

全自动钢卷激光精雕机主要应用于3C类电池的不锈钢壳体防爆泄压槽的精密加工、壳盖的防爆泄压槽的精密加工、方形电芯壳体的防爆泄压槽的精密加工。
设备采用光纤皮秒激光器作为激光光源,通过高精度数字振镜控制光束的轨迹运动。光束直接作用于材料表面,完成不同深度及结构微槽的加工,具有加工高精度、灵活性强等优点。

Parameter Introduction

Output efficiency: 20PPM-25PPM (depending on the specific product model);
Laser configuration: 50W picosecond laser;
Operation mode: capable of achieving full automation;
Processing accuracy: depth control ±5μm, width control ±5μm;
Qualification rate: ≥99.5%;
Failure rate: ≤2%.



Function Introduction

The fully automatic steel coil laser engraving machine is mainly used for precision machining of explosion-proof pressure relief grooves in stainless steel casings of 3C type batteries, precision machining of explosion-proof pressure relief grooves in shell covers, and precision machining of explosion-proof pressure relief grooves in square battery cell casings.

The equipment uses a fiber picosecond laser as the laser source and controls the trajectory of the beam through high-precision digital galvanometer. The beam directly acts on the material surface to complete the processing of micro grooves with different depths and structures, with the advantages of high precision processing and strong flexibility.

06

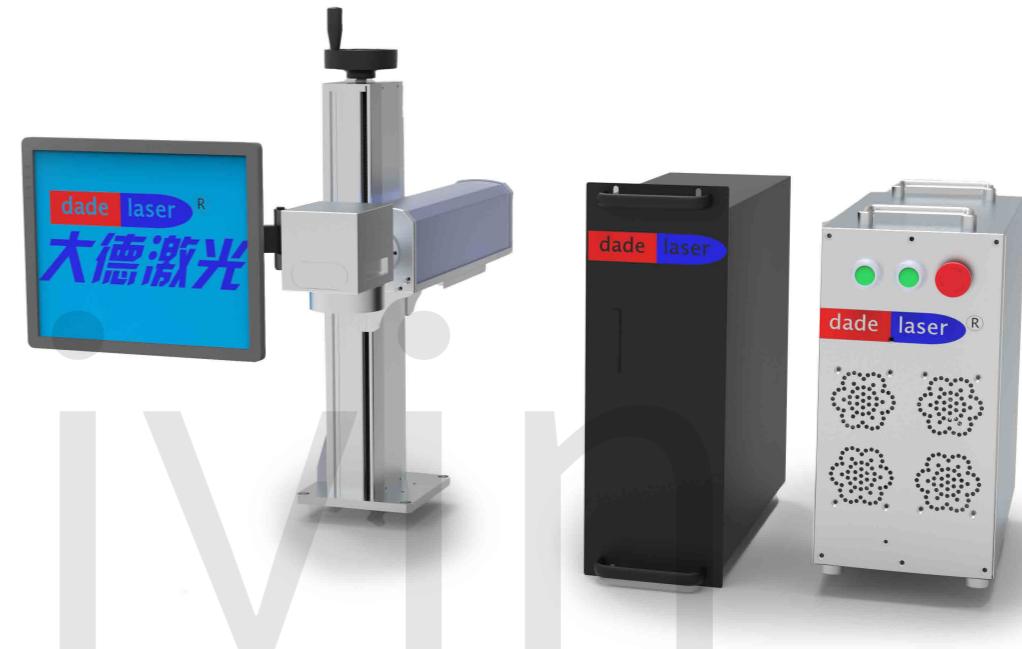
MARKING EQUIPMENT

产品介绍

标刻设备

AUTOMATIC LASER MARKING SYSTEM

自动激光打标系统



参数介绍

激光功率: 20W/30W/50W/100W (可选)
工作幅面: 110mm×110mm (可定制其他尺寸)
激光器类型: 脉冲光纤激光器
最大标刻速度: 6000mm/s
标刻精度: 0.01mm
运动控制: 手摇Z轴
运行方式: 外部信号触发, 自动运行

功能介绍

设备可用于金属材质(不锈钢、碳钢、铝、铁、铜等)、硬质塑料等的激光标刻;设备可以专用于顶盖板、极柱、壳体等电池部件的激光标刻, 可实现二维码、文字、图案等内容的标刻。

Parameter Introduction

Laser power: 20W/30W/50W/100W (optional);
Working area: 110mm×110mm (other sizes can be customized);
Laser type: pulsed fiber laser;
Maximum marking speed: 6000mm/s;
Marking accuracy: 0.01mm;
Motion control: manual Z-axis;
Operating mode: external signal trigger, automatic operation.

Function Introduction

The equipment can be used for laser marking on metal materials (stainless steel, carbon steel, aluminum, iron, copper, etc.) and hard plastics. The equipment can be specifically used for laser marking of battery components such as cover plates, poles, and housings, and can achieve marking of contents such as QR codes, text, and patterns.

MANUAL MARKING MACHINE

手动打标机

参数介绍

激光功率: 20W/30W/50W/100W (可选)
工作幅面: 110mm×110mm (可定制其他尺寸)
激光器类型: 脉冲光纤激光器/紫外激光器
最大标刻速度: 6000mm/s
标刻精度: 0.01mm
运动控制: 手摇Z轴(含标准工作机台)
运行方式: 外部信号触发, 自动运行

功能介绍

设备可用于金属材质(不锈钢、碳钢、铝、铁、铜等)、硬质塑料等的激光标刻;设备可以专用于顶盖板、极柱、壳体等电池部件的激光标刻, 可实现二维码、文字、图案等内容的标刻。



Parameter Introduction

Laser power: 20W/30W/50W/100W (optional);
Working area: 110mm×110mm (other sizes can be customized);
Laser type: pulsed fiber laser/UV laser;
Maximum marking speed: 6000mm/s;
Marking accuracy: 0.01mm;
Motion control: manual Z-axis (including standard workbench);
Operating mode: external signal trigger, automatic operation.

Function Introduction

The equipment can be used for laser marking on metal materials (stainless steel, carbon steel, aluminum, iron, copper, etc.) and hard plastics. The equipment can be specifically used for laser marking of battery components such as cover plates, poles, and housings, and can achieve marking of contents such as QR codes, text, and patterns.

DUAL-WORKSTATION SEMI-AUTOMATIC MARKING MACHINE

双工位半自动打标机

参数介绍

激光功率: 20W/30W/50W/100W (可选)
工作幅面: 110mm×110mm, 175×175 (可定制其他尺寸)
激光器类型: 脉冲光纤激光器
最大标刻速度: 6000mm/s
标刻精度: 0.01mm
运动控制: 电动X轴, 手摇Z轴
运行方式: 半自动
机台类型: 双工位机台

功能介绍

设备可用于金属材质(不锈钢、碳钢、铝、铁、铜等)、硬质塑料等的激光标刻;设备可以专用于顶盖板、极柱、壳体等电池部件的激光标刻, 可实现二维码、文字、图案等内容的标刻;



Parameter Introduction

Laser power: 20W/30W/50W/100W (optional);
Working area: 110mm×110mm, 175×175 (other sizes can be customized);
Laser type: pulsed fiber laser;
Maximum marking speed: 6000mm/s;
Marking accuracy: 0.01mm;
Motion control: electric X-axis, manual Z-axis;
Operating mode: semi-automatic;
Machine type: dual-station workbench.

Function Introduction

The equipment can be used for laser marking on metal materials (stainless steel, carbon steel, aluminum, iron, copper, etc.) and hard plastics. The equipment can be specifically used for laser marking of battery components such as cover plates, poles, and housings, and can achieve marking of contents such as QR codes, text, and patterns.

ENGINE CYLINDER HEAD MARKING MACHINE

发动机缸盖打标机

参数介绍

激光功率:30W/50W/100W(可选);
工作幅面:110mm×110mm(可定制其他尺寸);
激光器类型:脉冲光纤激光器;
最大标刻速度:6000mm/s;
标刻精度:0.01mm;
运动控制:全自动运行
机台类型:物料传输+激光刻码

功能介绍

设备可用于发动机缸体打标、发动机缸盖打标；包含了物料传输辊道、激光刻码系统、物料定位顶升功能等；可实现全自动化运行；

Parameter Introduction

Laser power: 30W/50W/100W (optional);
Working area: 110mm × 110mm (other sizes can be customized);
Laser type: pulsed fiber laser;
Maximum marking speed: 6000mm/s;
Marking accuracy: 0.01mm;
Motion control: fully automatic operation;
Machine type: material transfer + laser coding.



Function Introduction

The equipment can be used for marking on engine cylinder blocks and cylinder heads. It includes material transfer rollers, laser coding systems, material positioning and lifting functions, etc. It can achieve fully automated operation.

FULLY AUTOMATIC POLE CAP MARKING MACHINE

全自动极柱打标机

参数介绍

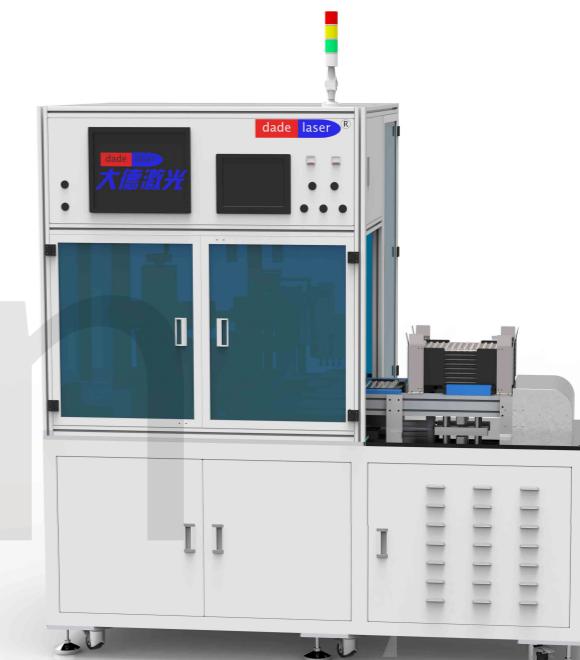
激光功率:50W/100W(可选);
工作幅面:110mm×110mm(可定制其他尺寸);
激光器类型:脉冲光纤激光器;
最大标刻速度:6000mm/s;
标刻精度:0.01mm;
运动控制:全自动运行;
机台类型:定制机型。

功能介绍

设备可用于金属材质(不锈钢、碳钢、铝、铁、铜等)的标刻；目前定制机型专用于极柱的激光打标，可实现二维码、文字、图案等内容的标刻；包含自动上下料、视觉定位等功能；

Parameter Introduction

Laser power: 50W/100W (optional);
Working area: 110mm × 110mm (other sizes can be customized);
Laser type: pulsed fiber laser;
Maximum marking speed: 6000mm/s;
Marking accuracy: 0.01mm;
Motion control: fully automatic operation;
Machine type: customized model.



Function Introduction

The equipment can be used for marking on metal materials (stainless steel, carbon steel, aluminum, iron, copper, etc.). Currently, customized machine models are specifically used for laser marking of poles, and can achieve marking of contents such as QR codes, text, and patterns. It includes functions such as automatic loading and unloading and visual positioning.

07

CUTTING EQUIPMENT

产品介绍

切割设备

HD3015 LASER CUTTING MACHINE

HD3015激光切割机



参数介绍

激光功率: 1500W-6000W
加工幅面: 3000mm×1500mm
最大速度: 120m/min
最大加速度: 1.2G
定位精度: ±0.03mm/m
重复定位精度: ±0.03mm
系统: 柏楚

Parameter Introduction

Laser power: 1500W-6000W;
 Processing area: 3000mm×1500mm;
 Maximum speed: 120m/min;
 Maximum acceleration: 1.2G;
 Positioning accuracy: ±0.03mm/m;
 Repeat positioning accuracy: ±0.03mm;
 System: Bosch.

产品特点

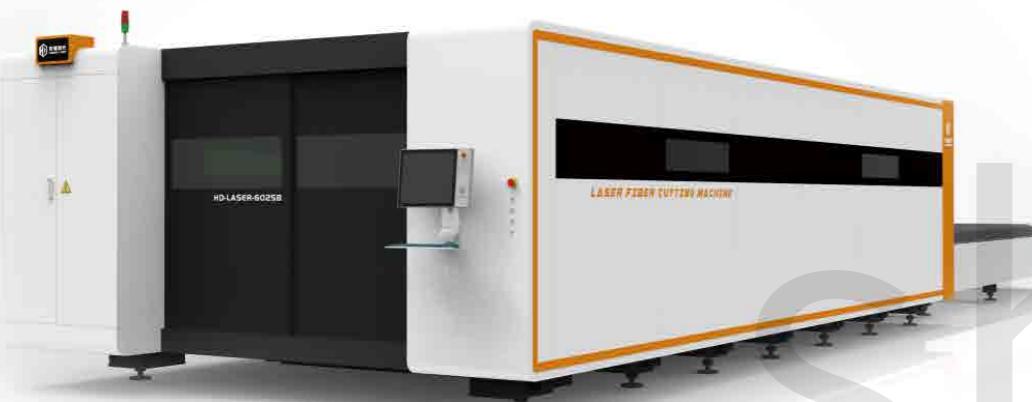
- 一体式集成结构, 占地面积小
- 高温热处理床身, 稳固耐用
- 进口高精度齿轮齿条传动, 高精度直线导轨导向
- 进口伺服电机驱动系统, 进口双星减速机
- 专业切割软件操作简单灵活, 即时切割

Product Features

- Integrated structure, small footprint
- High-temperature heat-treated bed, stable and durable
- Imported high-precision gear rack transmission, high-precision linear guide rail guidance
- Imported servo motor drive system, imported dual-star reducer
- Professional cutting software with simple and flexible operation, instant cutting

MEDIUM-HIGH POWER DUAL-PLATFORM LASER CUTTING MACHINE

中高功率双平台激光切割机



参数介绍

激光功率:6000W-20000w
加工幅面:4m×2m,6m×2.5m,8m×2.5m
最大速度:150m/min
最大加速度:1.5G
定位精度:±0.03mm/m
重复定位精度:±0.03mm
系统:柏楚总线

Parameter Introduction

Laser power: 6000W-20000w;
 Processing area: 4m×2m, 6m×2.5m, 8m×2.5m;
 Maximum speed: 150m/min;
 Maximum acceleration: 1.5G;
 Positioning accuracy: ±0.03mm/m;
 Repeat positioning accuracy: ±0.03mm;
 System: Bosch bus.

产品特点

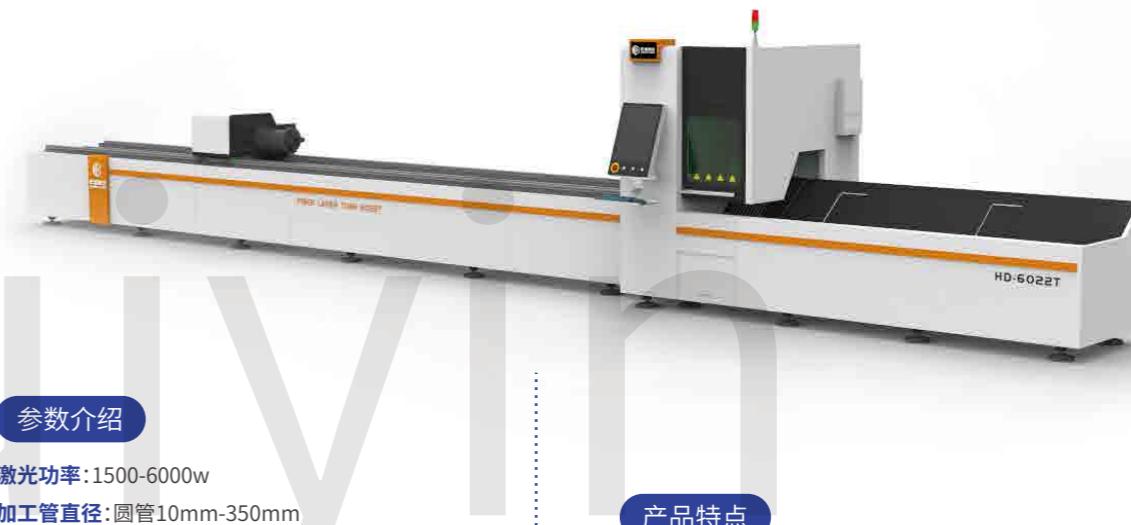
- 专为中高功率激光设计重型机床，能稳定持续地加工各类超厚板材
- 全防护封闭式设计、不漏光、真安全
- 采用宏德防热技术，耐高温，承重强，稳定高效输出，耐用保值
- 双电机交换工作台，智能安全，清渣便捷

Product Features

- Specifically designed heavy-duty machine tool for mid-to-high-power lasers, capable of stable and continuous processing of various ultra-thick plates
- Fully enclosed and protected design, no light leakage, truly safe
- Adopting Hongde heat-resistant technology, high temperature resistance, strong bearing capacity, stable and efficient output, durable and valuable
- Dual-motor exchange worktable, intelligent and safe, convenient slag removal

FULLY AUTOMATIC LASER PIPE CUTTING MACHINE

全自动激光切管机



参数介绍

激光功率:1500-6000w
加工管直径:圆管10mm-350mm
方管:20mm-240mm
卡盘类型:单卡、双卡、三卡
管材有效切割长度:6000m, 9000mm
最大速度:100m/min
最大加速度:1G
卡盘最大转速:150r/min
系统:柏楚总线

产品特点

- 高度自动化，五轴联动，超快速旋转、移动和高精密定位等特点，
- 能够高强度长时间稳定切割
- 双动气动卡盘，高精度定位，可实现多种管型、多种厚度的管材切割
- 高速换管，轻松续切，保持长时间高效工作

Product Features

- Highly automated, with characteristics such as five-axis linkage, ultra-fast rotation, movement, and high-precision positioning, capable of stable cutting for long periods of high intensity
- Heavy-duty and tightly clamped chuck for cutting multiple pipes
- Double-action pneumatic chuck with high-precision positioning, capable of cutting various pipe shapes and thicknesses
- High-speed tube replacement, easy continuation of cutting, maintaining long-term efficient operation.

Parameter Introduction

Laser power: 1500-6000w;
 Processing pipe diameter: round pipe 10mm-350mm, square pipe 20mm-240mm;
 Chuck type: single chuck, double chuck, triple chuck;
 Effective cutting length of pipe: 6000m, 9000mm;
 Maximum speed: 100m/min;
 Maximum acceleration: 1G;
 Maximum chuck speed: 150r/min;
 System: Bosch bus.

08 CLEANING EQUIPMENT

产品介绍 清洗设备

POLE CAP AND INJECTION HOLE LASER CLEANING MACHINE 极柱及注液孔激光清洗单机

参数介绍

激光功率: 120W/200W/250w/300w
工作幅面: 175mm×175mm/220×220mm
 (可定制其他尺寸)
激光器类型: MOPA光纤激光器
最大清洗速度: 10000mm/s
清洗深度: 0.005mm-0.2mm
运动控制: 手摇Z轴、电动Z轴
运行方式: 外部信号触发, 自动运行

功能介绍

设备可用于金属表面(不锈钢、碳钢、铝、铁、铜等)激光清洗;
 设备可以专用于电池极柱、注液孔的·激光清洗。

Parameter Introduction

Laser power: 120W/200W/250w/300w;
 Working area: 175mm×175mm/220×220mm (other sizes can be customized);
 Laser type: MOPA fiber laser;
 Maximum cleaning speed: 10000mm/s;
 Cleaning depth: 0.005mm-0.2mm;
 Motion control: manual Z-axis, electric Z-axis;
 Operating mode: external signal trigger, automatic operation.



Function Introduction

The equipment can be used for laser cleaning of metal surfaces (stainless steel, carbon steel, aluminum, iron, copper, etc.). The equipment can be specifically used for laser cleaning of battery poles and injection holes.

PULSED LASER HANDHELD CLEANING MACHINE

脉冲激光手持式清洗机

参数介绍

激光功率:脉冲100-1000w、连续的1000-3000W
工作幅面:160mm×160mm/350×350mm (可定制其他尺寸)
激光器类型:脉冲光纤激光器/连续光纤激光器
最大摆动速度:30000mm/s
除锈深度:0.01mm-0.2mm
摆动方式:直线/矩形/椭圆/波浪花瓣/螺旋/网络/8字

功能介绍

广泛适用于汽车汽配、钣金五金、锂电、模具、航空航天、3C电子、医疗器械、轨道交通、钢铁制造等行业锈迹、油污、油漆、氧化层、焊缝的清洗



Parameter Introduction

Laser power: pulsed 100-1000w, continuous 1000-3000W;
Working area: 160mm×160mm/350×350mm (other sizes can be customized);
Laser type: pulsed fiber laser/continuous fiber laser;
Maximum swing speed: 30000mm/s;
Rust removal depth: 0.01mm-0.2mm;
Swing mode: straight line/rectangle/ellipse/wave petal/spiral/network/8.

Function Introduction

Widely used for cleaning rust, oil, paint, oxide layer, and weld seams in industries such as automotive parts, sheet metal hardware, lithium batteries, molds, aerospace, 3C electronics, medical equipment, rail transit, steel manufacturing, etc

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LASER

产品介绍

激光器

FIBER LASER

光纤激光器



功能介绍

HD-S系列光纤激光器采用小纤芯光纤输出，具有优异的光束质量 ($M_2 < 1.3$)，尤其适用于高反金属材料的焊接、金属薄板的精密切割、3D打印等领域。

Function Introduction

HD-S series fiber laser adopts small core fiber output, with excellent beam quality ($M_2 < 1.3$), especially suitable for welding high-reflective metal materials, precision cutting of metal sheets, 3D printing, and other fields.

参数介绍

| QBH输出特性 QBH output characteristics | HD-S1000 | HD-S1500 | HD-S2000 | HD-S3000 |
|--|------------------|------------------|------------------|------------------|
| 输出芯径 (μm) output core diameter | 14 μm | 14 μm | 20 μm | 20 μm |
| 光束质量M2 beam quality M2 | $M_2 < 1.2$ | $M_2 < 1.2$ | $M_2 < 1.3$ | $M_2 < 1.3$ |
| 输出光纤长度 (m) output fiber length | 5m/10m | | | |
| 光纤最小弯曲半径 (mm) minimum bending radius of fiber | 100 | | | |

HYBRID LASER

复合激光器



设备简介

复合激光器采用光纤激光器和半导体激光器作为两路激光源，通过焊接头进行光路复合，实现两种光源共同作用于工件，实现精密焊接。

Equipment Introduction

The composite laser adopts fiber laser and semiconductor laser as two laser sources, and the optical path is combined through the welding head to achieve the joint action of the two light sources on the workpiece, realizing precision welding.

| 特性 Characteristics | 参数 Parameters | 参数 Parameters | 参数 Parameters |
|---------------------------|---|---|---|
| 型号 Model | DD-FH2000 | DD-FH3000 | DD-FH4000 |
| 激光类型 Laser type | 光纤1070nm/半导体915nm Fiber 1070nm/semiconductor 915nm | 光纤1070nm/半导体915nm Fiber 1070nm/semiconductor 915nm | 光纤1070nm/半导体915nm Fiber 1070nm/semiconductor 915nm |
| 输出功率 Output power | 2000W | 3000W | 4000W |
| 功率稳定性 Power stability | < $\pm 1\%$ | < $\pm 1\%$ | < $\pm 1\%$ |
| 电源输入 Power input | AC380V $\pm 10\%$, 50/60HZ | AC380V $\pm 10\%$, 50/60HZ | AC380V $\pm 10\%$, 50/60HZ |
| 工作方式 Operating mode | 准连续/连续/调制 Quasi-continuous/continuous/modulation | 准连续/连续/调制 Quasi-continuous/continuous/modulation | 准连续/连续/调制 Quasi-continuous/continuous/modulation |
| 用电功率 Power consumption | 9.5KW | 11KW | 12.5KW |
| 冷却方式 Cooling method | 水冷 | 水冷 | 水冷 |
| 外形尺寸 Dimensions | 1200*700*850 | 1200*700*850 | 1200*700*850 |