

**没有最好，只有更好！多维激光为您创造更大价值！**

No best, only better. Dowell Laser will create greater value for you!



## 济南多维光电设备有限公司

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超长寿命



国际品质



**专业金属激光加工设备制造商**

PROFESSIONAL METAL LASER PROCESSING EQUIPMENT MANUFACTURERS





# COMPANY INTRODUCTION

## 公司简介

济南多维光电设备有限公司（原武汉多维激光），历经十二年，专业致力于激光切割、标记设备的生产和销售，并为客户提供全方位的解决方案，是国内同行业较少的具备自主研发能力企业之一。公司全系列产品已通过CE、FDA等国际认证。

公司自创建以来，经过不断完善管理，现拥有技术人员130余名，研发人员20余名，3000平米的现代化厂房，座落于交通便利的济南市天桥区新徐工业园，并已在广州、上海、北京、浙江、福建等地设有20多个分销点，于30多个国家与地区设立代理商，产品远销美国、俄罗斯、德国、土耳其、东南亚等六十多个国家和地区。

公司拥有一流的生产线，形成了种类全、功能多的产品构架，在日益激烈的市场竞争中，我们充分吸收了国际激光领域中先进的理念，自主研发了一系列激光雕刻切割产品，多维激光注入最新的光、机、电一体化技术方案，使其在性能、精度及外观均达到了完美结合，满足了不同层次用户的需求。

高品质是我们永恒的追求，设备主要部件均是世界原装进口，先进的制造工艺，规模化的生产，高标准的检测，完善的售后服务，赢得了客户的支持和信任。“客户至上、信誉第一”是我们一贯追求的最高信念。多维激光愿以不懈的追求和努力，携手各地、各国商贾共创辉煌的明天！

**Jinan Dowell Photoelectricity Equipment Co., Ltd.** (the former Wuhan Dowell laser), with 12 years production experience, specialized in laser cutting, marking equipment production, developing and sales, and provide customers with comprehensive solutions, compared to same industry, we are one of hold the autonomy R & D companies in this field. all series of product have passed CE, FDA and others international certification.

Since established of our company, now there are more than 130 technician and 20 research personnels after continuous improvement of management. our company located in the Xinxu industrial zone of Tianqiao district, Jinan city, with convenient traffic and occupy 3000 square meters. We have more than 20 agencies all over China, such as Guangzhou, Shanghai, Beijing, Zhejiang, Fujian etc. We have established agent relations covering 30 countries and areas. Our products are exported to more than 60 countries and areas all over the world, including America, Russia, Germany, Turkey, Southeast Asia etc.

We have the first-class production line, formed various types of the product structure. In the competitive market, we absorbed fully advanced ideas from international laser field. We have researched a series of laser engraving and cutting products independently. The series of DOWELL products inject the newest design concept with integration of laser, engine and electricity. so that in the performance, precision and appearance reached the perfect combination, meet the different demands of clients

High quality is our forever pursuit, we adopt original imported components, advanced manufacturing technology, large mass production and high standard testing. perfect after sale service, won customers' trust and support. "Customer first, credit first" is our highest faith, through our persistent effort, we believe, we will build a brilliant future with you!



04	选择我们的理由 The reasons of choosing us
05	产品优势 Product Advantage
07	多维系列大幅全防护高速光纤激光切割机 Dowell Series High Speed Fiber Laser Cutting Machine
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11	多维系列管板一体光纤激光切割机 Dowell Series Tube Plate Integrated Optical Fiber Laser Cutting Machine
13	多维系列高速光纤切管机 Dowell Series High Speed Optical Fiber Pipe Cutting Machine
15	多维系列精密光纤切割机 Dowell Series Precision Optical Fiber Cutting Machine
17	多维系列激光焊接机 Dowell Series Laser Welding Machine
19	多维系列紫外激光打标机 Dowell Series Ultraviolet Laser Marking Machine
21	多维系列三维激光切割系统 Dowell Series 3D Laser Cutting System
22	多维系列激光清洗机 Dowell Series Laser Cleaning Machine





# 现在是您重新定位中国光纤激光机价值的时候了

It's time to recognize  
The new value of Chinese laser machines.



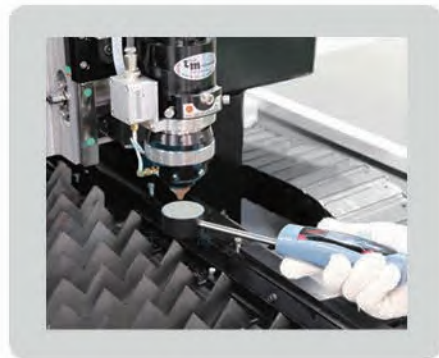
## 03 示波器测试 Oscilloscope test

激光切割机示波器测试电磁干扰，保证激光切割机稳定运行。  
Electromagnetic interference is tested by oscilloscope, and guarantee the stable operation of laser cutting machine.



## 06 准直仪测试 Testing by autocollimator

导轨直线度、平面度、垂直度的测量方法用1401 xi 型双向精密自准直仪测绘。  
The straightness, flatness and verticality of the guide rail are measured by Model .1401 two-dimensional precise autocollimator.



每一个零件都经过精心的挑选  
Every piece of the part is picked out elaborately

每一个流程都经过认真的执行  
Every procedure is carried out in real earnest

每一台机器都经过千锤百炼的测试  
Every set of our machine is tested completely and repeatedly

## 02 主板电源的测试 Mainboards and power supply testing

在温度为50°C的烤箱里对主板和激光电源进行最少4小时的老化测试。  
Aging testing for the mainboards and laser power supply in an oven of 50°C for at least 4 hours.



## 05 机器准直测量 Machine collimation measurement

测试机器导轨的准直，保证机器运行的精度。  
Test the alignment of the machine guide to ensure the accuracy of the machine running



## 08 出厂终检 Final testing before delivery

每台设备出厂前都要作试样切割，切割精度为±0.1mm，以测试其垂直度及尺寸误差。  
以35mm/s的速度切割直径为2mm的小圆，要求不变形。  
Each equipment is tested by cutting samples to check the uprightness and specifications before delivery,error allowed is ±0.1mm. Cutting circles of 2mm in diameter at the speed of 35mm/s without distortion.



# 选择我们的理由 The reasons of choosing us



整体铸造床身，更牢固更稳定，25年不变形。  
The overall casting bed, more solid and more stable, 25 years without distortion.



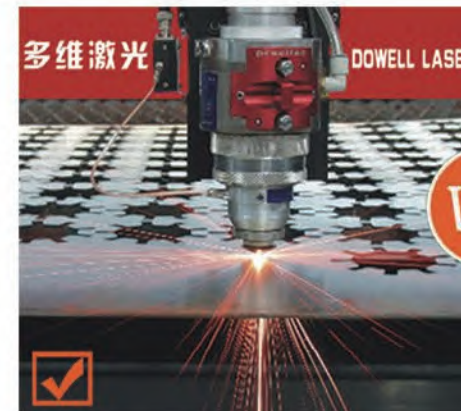
翻板机身粗糙，易变形  
Common board rough and weak, easy to deformation



用我们机器切不锈钢工艺品效果，切缝平整、光滑、断面无需后期处理。  
Use our machine cut stainless steel,the cutting edge is flat and smooth,no need to phontoshop



其它厂家切不锈钢工艺品效果，粗糙不平整。  
Other manufactures cutting stainless steel,the cutting edge is rough and unsmooth



采用高精度随动激光头  
Adopt high precision follow-up laser head



普通激光头  
ordinary laser head



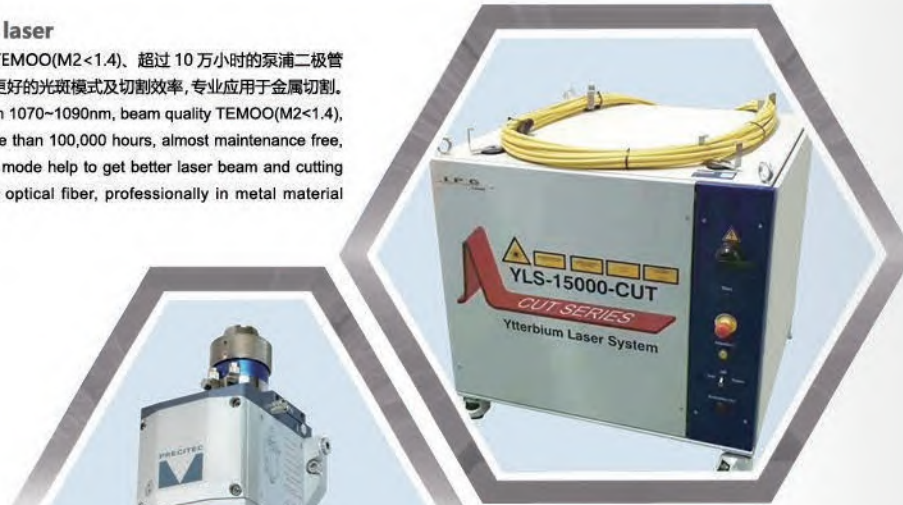
## 产品优势

Product Advantage



### 光纤激光器 Imported fiber laser

波长范围 1070~1090nm、光束质量 TEM00(M2<1.4)、超过 10 万小时的泵浦二极管寿命、免维护运行、单模光纤传输,具有更好的光斑模式及切割效率,专业应用于金属切割。  
The fiber laser wavelength ranges from 1070~1090nm, beam quality TEM00(M2<1.4), laser pump diodes could work for more than 100,000 hours, almost maintenance free, SMF (single mode fiber) transmission mode help to get better laser beam and cutting efficiency compared with multimode optical fiber, professionally in metal material cutting.

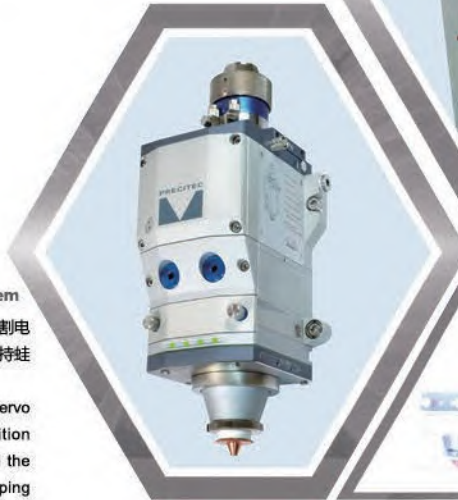


### 高动态自动调焦系统

High-dynamic auto-focusing system

采用了速度位置双闭环算法控制激光切割头,具有较高动态响应精度,支持蛙跳式上抬,实现高速跟随。

The laser cutting head equips with a servo driver, integrated with speed & position dual closed-loop algorithm to control the cutting. It also supports leapfrog jumping method, to get high-dynamic response realizing fast punching on metal sheet.



### 根据金属板材凹凸面自动调焦

high-dynamic auto-focusing cutting head



### 精密高效运动组件 Precise moving component

原装进口齿轮齿条传动系统,配备研磨级齿轮齿条,与丝杠传动比较,它克服了高速长距离运行的震动缺陷,实现高速精密传动。

The machine adopts the domestic creative hybrid transmission system: the rack & pinion system + ball screw, which can reduce the vibration compared with previous lead screw transmission. Meanwhile, this combination transmission system can realize high speed response in Y axis and also precise cutting in short distance.



### 控制软件系统 专业的薄钢板切割专用软件

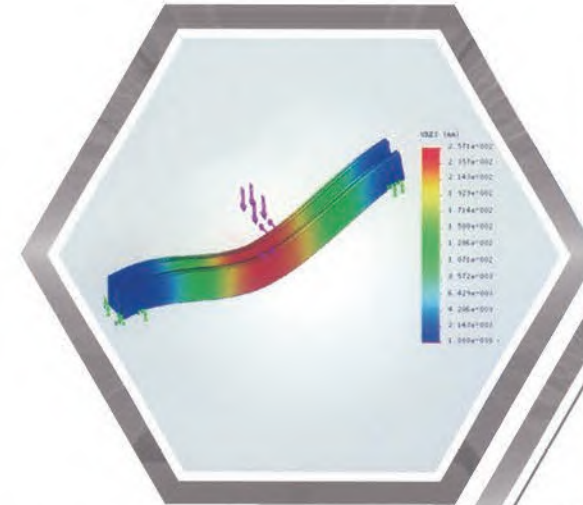
Professional steel plate cutting software

采用自适应轨迹平滑算法,切割路径自动优化。

自动化寻边功能。

采用 Bezier 曲线过渡算法实现高效拐角,避免热加工中出现烧角的现象。

Optimizing the layout of cutting pattern to save cutting path and smoothing the sharp corner, achieving high speed punching and marking.



### 横梁结构有限元分析 Gantry structure

经过有限元科学分析并优化后面设计的横梁结构,达到了机床动态性能下的最佳临界状态;重量最轻、结构刚性最好,长期稳定性最佳,运动速度最快,极大提高了动态响应速度,特别适合高速度、高精度激光切割。

High quality gantry structure with interior stiffener, highly improves the rigidity and strength of the gantry. Advantage of light weight, high rigidity, versatility, good features and modular design offer customized convenient services to achieve economical cut.

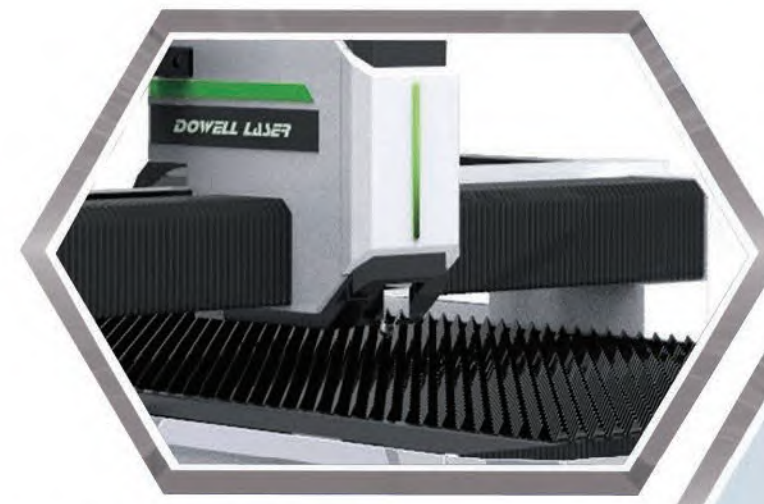
Finite element analysis of gantry help to achieve the best critical state of dynamic performance, light weight & structural rigidity, to ensure the long-term stability of the beam, helping improve the dynamic response of the machine, especially suitable for high-speed and high-precision laser cutting.



### 高性能进口伺服电机 YASKAWA servo motor

波长范围 1070~1090nm、光束质量 TEM00(M2<1.4)、超过 10 万小时的日本进口安川高惯量伺服系统,拥有同行业最高的放大器响应性,大大缩短了整定时间,可高速实现加减速,有助于提高机械的稳定性。

YASKAWA servo motor has the best amplifier responsiveness, be able to reduce setting time sharply, accelerate and decelerate quickly, and increase the machine stability.



### Y 向同步双驱方案 Y axis synchronized dual-motor

双电机双齿轮同步驱动系统,配合高强度铝合金横梁,最大的加速度可达 1.2G,实现高效切割,较同行业具有更高的加工效率,大幅减少气体消耗。

Synchronized dual-motor on the Y axis, two gears fixed on the high strength aluminum alloy crossbeam, max accelerated speed is up to 1.2G, which is faster than other contenders, and the assisted gas consumption could be reduced dramatically, saving every possible piece of coin for you.



### 冷却装置 Cooling system

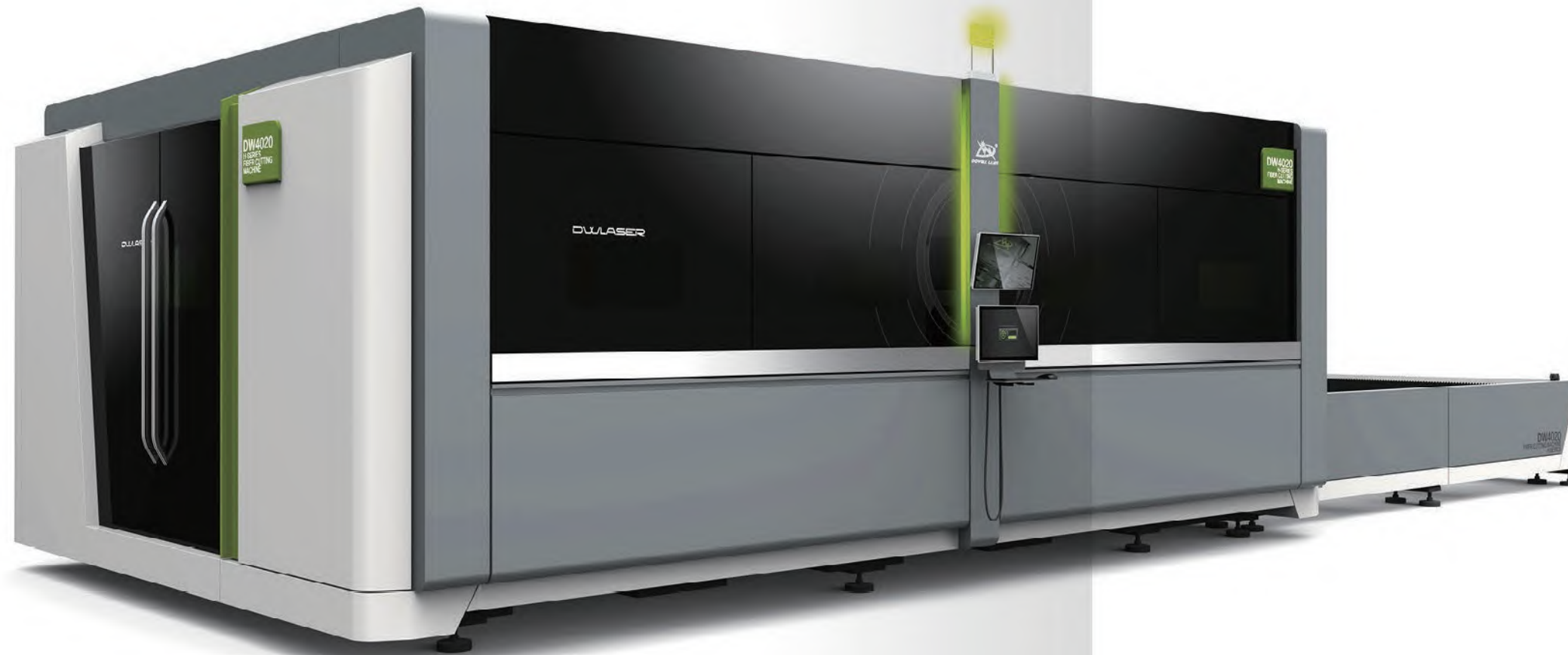
智能双温双控冷水系统,具有超温报警,流量保护、水位保护等安全报警提示功能。即使高温差、高湿度环境的气候条件下,也可确保设备的正常运转。

The machine equips with intelligent dual-temperature control water-cooling system. This system integrates temperature alarm, flow protection and water protection alarm, to ensure the machine can work well under different temperature and humidity.



# 多维系列大幅全防护高速光纤激光切割机

Dowell Series High Speed Fiber Laser Cutting Machine



## 行业应用 Application Industry

厨具灯具、五金机柜、钣金加工、汽车配件、冰箱、空调、电梯、酒店金属用品  
 Industry of kitchen ware, lamps and lanterns, panel beating, metal cabinets, auto parts, refrigerators, air condition, elevators, hotel metal supplies processing, etc.



碳钢  
Carbon Steel



电脑机箱  
Computer Case



不锈钢书柜  
SS Bookshelf



不锈钢文件柜  
SS Cabinet

## 功能特点 Features

- ◆ 高刚性重型机床，减少高速切割过程中产生的震荡。
- ◆ 龙门双驱结构，德国进口齿轮齿条传动系统，提高客户的生产效率。
- ◆ 高性能铸铝横梁，经过有限元分析，实现高加速圆弧切割。
- ◆ 全闭环激光切割控制系统及自动调焦功能，具备高速穿孔及自动寻边功能。
- ◆ High-rigidity heavy chassis, reducing the vibration generated during high-speed cutting greatly.
- ◆ Gantry double-drive structure, with imported German rack & pinion transmission system, improves the production efficiency.
- ◆ High-performance cast aluminum guide rail, after finite element analysis, realizes highly accelerated speed circular arc cutting.
- ◆ Close-loop laser cutting control system, auto focus, high-speed piercing and automatic tracing-edge function.

## 适用材料 Material

主要用于切割碳钢、不锈钢、铝合金、钛合金、镀锌板、镀铝锌板、黄铜、紫铜等多种金属材料的快速切割。  
 Metal materials such as Carbon steel, Stainless steel, Aluminum alloy, Titanium alloy, Galvanize sheet, Brass, Red copper etc.

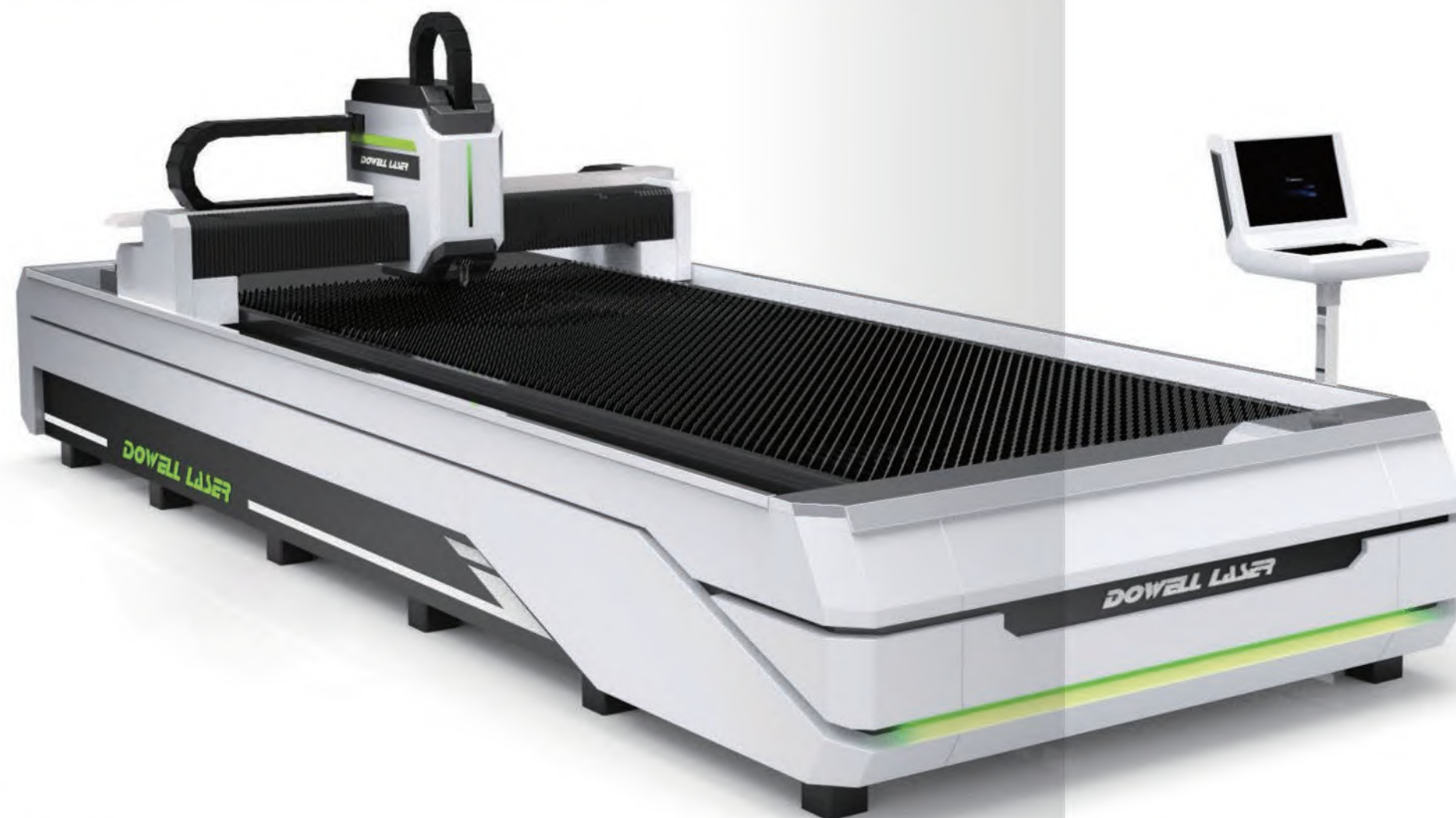
## 技术参数 Specification

型号 Model	DW-3015/DW-2040/DW-2060/DW-1560		
切割范围 Working area	2000mm×4000mm	重复定位精度 Reposition accuracy	±0.03mm/1000mm
激光器类型 Laser type	光纤激光器 Fiber laser generator	支持图形格式 Graphic format supported	CAD, DXF 等 (etc)
额定激光功率 (选配) Laser power(optional)	700W~3000W	工作环境 Working environment	0-40℃湿度≤80%，无凝结 Temp:0-40℃, humidity: ≤80%, No condensation
传动系统 Transmission system	龙门双驱结构 Gantry double-drive structure	总功率 Total power	约 (Around) 25KW
润滑系统 Lubrication system	全自动 Full-automatic	电源需求 Power supply	三相 380V/50Hz/60Hz Triphase 380V/50Hz/60Hz
最大速度 Maximum speed	100m/min	设备外形尺寸约 Overall dimension	10600mm×3470mm×1875mm
最大加速度 Maximum accelerated speed	1.0G	总质量约 Gross weight	8500kg
定位精度 Position accuracy	±0.05mm/1000mm		



# 多维系列大幅面光纤激光切割机

Dowell Series High Speed Fiber Laser Cutting Machine



## 行业应用 Application Industry

厨具灯具、五金机柜、钣金加工、汽车配件、冰箱、空调、电梯、酒店金属用品  
 Industry of kitchen ware, lamps and lanterns, panel beating, metal cabinets, auto parts, refrigerators, air condition, elevators, hotel metal supplies processing, etc.



碳钢  
Carbon Steel



钛金  
Titanium Alloy



铁床  
Steel Beds



不锈钢衣柜  
SS Wardrobe

## 功能特点 Features

- ◆ 高刚性重型机床，减少高速切割过程中产生的震荡。
- ◆ 龙门双驱结构，德国进口齿轮齿条传动系统，提高客户的生产效率。
- ◆ 高性能铸铝横梁，经过有限元分析，实现高加速圆弧切割。
- ◆ 开放式工作台，操作简单，占地面积小。
- ◆ High-rigidity heavy chassis, reducing the vibration generated during high-speed cutting greatly.
- ◆ Gantry double-drive structure, with imported German rack & pinion transmission system, improves the production efficiency.
- ◆ High-performance cast aluminum guide rail, after finite element analysis, realizes highly accelerated speed circular arc cutting.
- ◆ Open worktable, simple operation and small space occupation.

## 适用材料 Material

主要用于切割碳钢、不锈钢、铝合金、钛合金、镀锌板、镀铝锌板、黄铜、紫铜等多种金属材料的快速切割。  
 Metal materials such as Carbon steel, Stainless steel, Aluminum alloy, Titanium alloy, Galvanize sheet, Brass, Red copper etc.

## 技术参数 Specification

型号 Model	DW-3015/DW-2040/DW-2060/DW-1560/DW-1325		
切割范围 Working area	2000mm×4000mm	重复定位精度 Reposition accuracy	±0.03mm/1000mm
激光器类型 Laser type	光纤激光器 Fiber laser generator	支持图形格式 Graphic format supported	CAD, DXF等 (etc)
额定激光功率 (选配) Laser power(optional)	700W~2000W	工作环境 Working environment	0-40℃湿度≤80%，无凝结 Temp:0-40℃, humidity: ≤80%, No condensation
传动系统 Transmission system	龙门双驱结构 Gantry double-drive structure	总功率 Total power	约 (Around) 20KW
润滑系统 Lubrication system	全自动 Full-automatic	电源需求 Power supply	三相 380V/50Hz/60Hz Triphase 380V/50Hz/60Hz
最大速度 Maximum speed	100m/min	设备外形尺寸约 Overall dimension	5500mm×3250mm×1650mm
最大加速度 Maximum accelerated speed	1.0G	总质量约 Gross weight	6000kg
定位精度 Position accuracy	±0.05mm/1000mm		



# 多维系列管板一体光纤激光切割机

Dowell Series Tube Plate Integrated Optical Fiber Laser Cutting Machine



## 行业应用 Application Industry

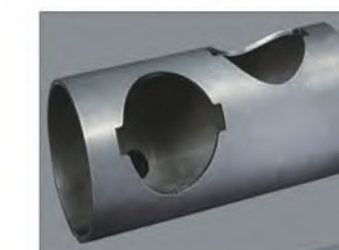
管材钢板切一体化切割; 管材长度 3000mm, 管径最大外径 150mm, 其他规格需定  
 Tube and plate industry, auto spare parts, elevator, chassis cabinets, craft gift, metal processing, decoration, advertisement, metal external processing etc.



各种钢管  
Steel Pipes



各种金属板  
Metal Plates



不锈钢管  
SS Pipe



钛金管  
Titanium Tube

## 功能特点 Features

- ◆ 集方管、圆管、扁圆管、平面切割为一体的光纤激光切割机, 多功能, 实用性强。
- ◆ 龙门双驱动, 采用德国进口齿轮齿条传动结构, 优秀的切割性能及稳定性。
- ◆ 自定心式夹具系统确保稳定的管材输送过程, 从而保证高精度、高质量的加工产品。
- ◆ 精准的加工尺寸、可代替多道传统加工设备如锯切、打孔等。
- ◆ 带有精密刻度的马鞍形管材支撑架, 可确保切割 6 米长的管材不变形。
- ◆ This model integrates square tube, circular tube, oblate tube, and plane cutting in one, with multifunction and high practicality.
- ◆ Gantry structure and dual drive, Germany imported rack & pinion drive system. Excellint cutting performance and stability.
- ◆ Self-centering jig system ensures stable process of conveying pipes, so that it can ensure high accuracy and high quality of products.
- ◆ The machine, with high accuracy of machining dimension, can take the place of traditional processing equipment, such as sawing and punching.
- ◆ Saddle-shaped pipe type support beam is with high precision calibration, no deformation during 6m pipe cutting.

## 适用材料 Material

主要用于切割碳钢、不锈钢、铝合金、钛合金、镀锌板、镀铝锌板、黄铜、紫铜等多种金属材料的快速切割。  
 Metal materials such as Carbon steel, Stainless steel, Aluminum alloy, Titanium alloy, Galvanize sheet, Brass, Red copper etc.

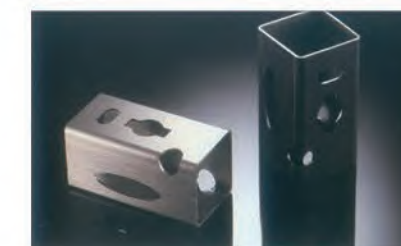
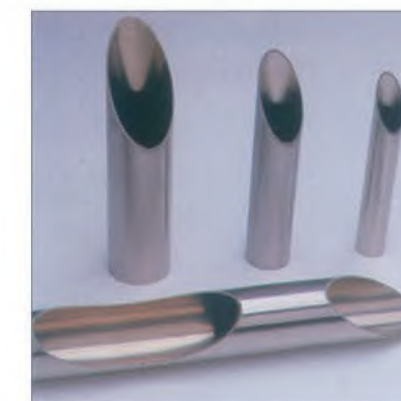
## 技术参数 Specification

型号 Model	DW-3015/DW-2040/DW-2060/DW-1560/DW-1325		
平面切割范围 Working area	3000mm×1500mm	定位精度 Position accuracy	±0.15mm/1000mm
最大管材长度 (选配) Maximum length of pipe(Options)	3000mm 或 (or)6000mm	重复定位精度 Reposition accuracy	±0.02mm/1000mm
管材切割范围 (定制) Limits of pipe(Customized)	圆管: Φ20mm~Φ120mm; 方管: Φ20mm~80mm Circular tube: Φ20mm~Φ120mm; Square tube: Φ20mm~80mm	支持图形格式 Graphic format supported	CAD,DXF 等 (etc)
激光器类型 Laser type	光纤激光器 Fiber laser generator	工作环境 Working environment	0-40°C湿度≤ 80%, 无凝结 Temp:0-40°C ,humidity: ≤ 80%,No condensation
激光功率 (可选) Laser power(optional)	500~2000W	总功率 Total power	10KW
传动系统 Transmission system	龙门齿条双驱 Double serve motor & gantry & rack & pinion	电源需求 Power supply	三相 380V/50Hz/60Hz
切管系统 (可选) Pipe cutting system(optional)	是 (Yes)	外形尺寸约 (含 3 米切割机) Overall dimension (include cutting machine in 3 meters long)	4350mm×3200mm×1740mm
最大速度 Maximum speed	60m/min	外形尺寸约 (含 6 米切割机) Overall dimension (include cutting machine in 6 meters long)	7650mm×3200mm×1740mm
最大加速度 Maximum accelerated speed	0.6G	总质量约 Gross weight	6000kg



# 多维系列高速光纤切管机

Dowell Series High Speed Optical Fiber Pipe Cutting Machine



## 功能特点 Features

- ◆ 高性能，进口原厂封装光纤激光器，性能稳定，使用寿命可达 10 万多小时。
- ◆ 可加工市场常规的方管、圆管、矩形管。
- ◆ 配有专业夹头夹具，对不同形状和大小尺寸的管材均可进行精密加工。
- ◆ 采用进口导向传动机构和伺服电机，切割精度高。
- ◆ Adopt German IPG brand/China famous Raycus Laser sources, high and stable function, lifespan is over 100,000 hours.
- ◆ Processing market conventional circular tube, square tube, rectangular tube.
- ◆ Equipped with professional chuck fixture, precision machining of the pipe can be of different shapes and sizes.
- ◆ Imported servo motor and gearing system to guarantee high precise cutting.

## 适用材料 Material

专业用于切割碳钢管，不锈钢管，镀锌管，电解管，硅钢多种薄金属材料。  
Professional for cutting carbon steel tube, stainless steel tube, galvanized tube, electrolytic tube, silicon steel a variety of thin metal materials.

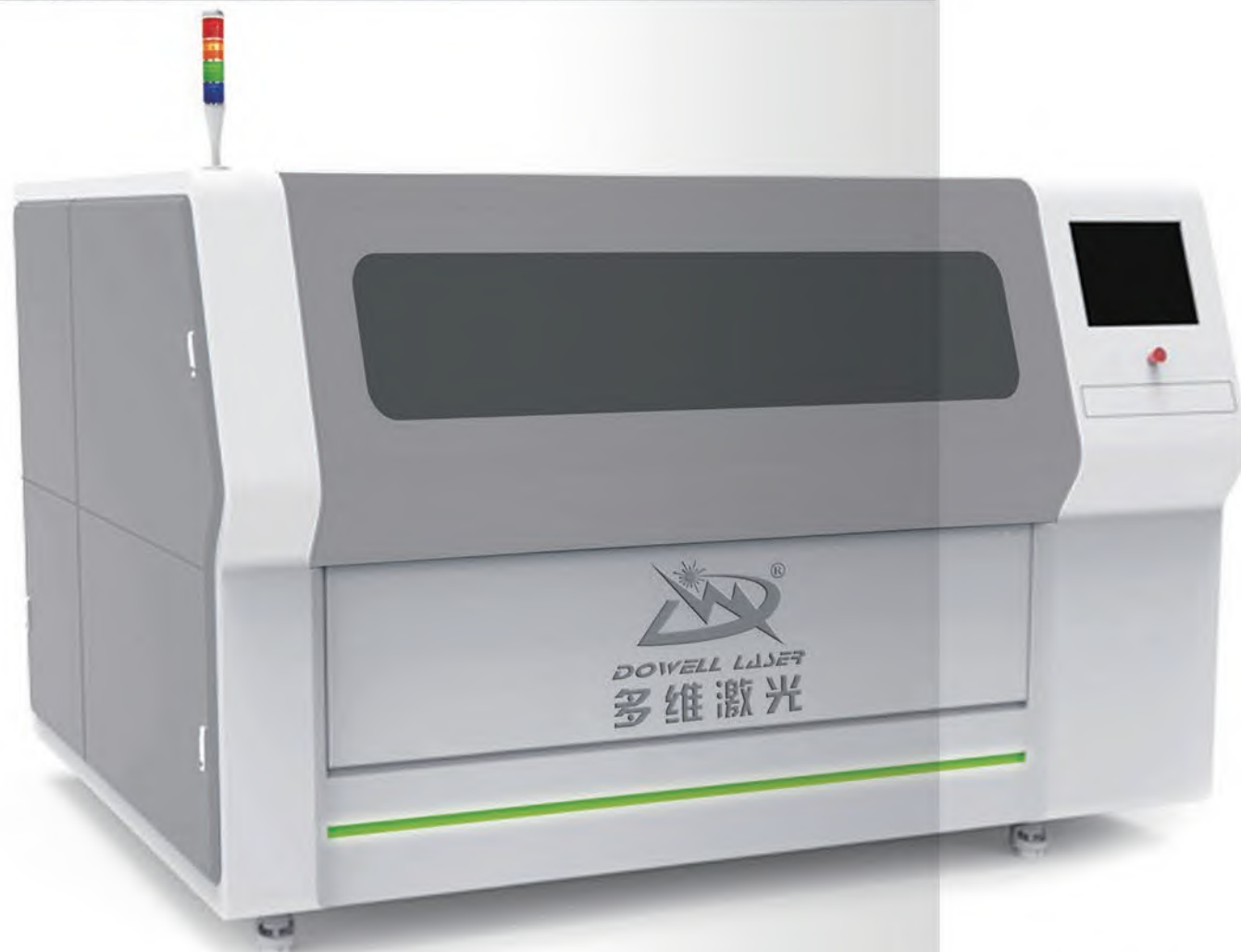
## 技术参数 Specification

激光器功率 Laser power	1000W-4000W
激光器类型 Laser model	光纤激光器 IPG/RAYCUS
加工幅面 Work size	6000mm×200mm
管材加工范围 (长 × 管径) The working size of pipes (Length×Diameter)	6000×Φ20-180
切割厚度 Cut thickness	≤ 5mm
W 轴最大定位速度 The maximum positioning speed of Waxis	300rpm
整机重量 Weight	6000KG 或 (or) 7000KG
外观尺寸 Dimension	8440×3050×2200mm



# 多维系列精密光纤切割机

Dowell Series Precision Optical Fiber Cutting Machine



## 行业应用 Application Industry

眼镜腿、金属芯片、U 盘外壳、0.2mm-0.8mm 厚度的薄金属外壳精密切割。优势主要是高速、精度、薄板、可定制夹具、占地小。

Spectacle frame, metal chip, USB shell, 0.2mm-0.8mm metal shell precision cutting etc.



贵金属  
Rluminum Metal



电器内外部件  
Electrical Components



铝合金  
Aliuminum Alloy



不锈钢  
Stainless Steel

## 功能特点 Features

- ◆ 机床整体铸造，具有较高的精度及稳定性，有效消除高速切割过程中产生的震荡。
- ◆ 双丝杠、双电机传动系统，具有调整圆弧切割功能。
- ◆ 自动润滑系统，传动部件免维护，可切割腐蚀性材料。
- ◆ 具备功率、频率与速度跟随功能，有效减少拐角切割毛刺。
- ◆ The machine, with overall casting structure, high accuracy and stability, effectively eliminate the vibration generated during high-speed cutting.
- ◆ Twin lead screws, dual-motor drive system, high-speed arc cutting function.
- ◆ Automatic lubrication system, maintenance-free transmission components, and the ability to cut corrosive materials.
- ◆ Possessing the power, frequency and speed following function effectively reduces rags of corners cutting.

## 适用材料 Material

主要用于切割碳钢、不锈钢、铝合金、钛合金、镀锌板、镀铝锌板、黄铜、紫铜等多种金属材料的快速切割。  
Metal materials such as Carbon steel, Stainless steel, Aluminum alloy, Titanium alloy, Galvanize sheet, Brass, Red copper etc.

## 技术参数 Specification

型号 Model	DW-6040/DW-9060/DW-1060/DW-1390		
切割范围 Working area	1300mm×900mm	定位精度 Position accuracy	±0.02mm
激光器类型 Laser type	光纤激光器 Fiber laser generator	重复定位精度 Reposition accuracy	±0.01mm
激光功率 Laser power	200W~1000W	支持图形格式 Graphic format supported	CAD,DXF 等 (etc)
摄像系统 Camera system	选配 (optional)	工作环境 Working environment	0-40°C湿度≤ 80%，无凝结 Temp:0-40°C ,humidity: ≤ 80%,No condensation
润滑系统 Lubrication system	全自动 Full-automatic	总功率 Total power	5KW
传动系统 Lubrication system	龙门双丝杠伺服驱动 Gantry double lead screws servo drive	电源需求 Power supply	三相 380V/50Hz/60Hz Triphase 380V/50Hz/60Hz
机床结构 Machine structure	整体铸造 Overall casting	设备外形尺寸约 Overall dimension	2300mm×1750mm×1780mm
最大速度 Maximum speed	60m/min	总质量约 Gross weight	900kg
最大加速度 Maximum accelerated speed	1.2G		



# 多维系列激光焊接机

Dowell Series Laser Welding Machine



## 功能特点 Features

激光焊接是一种新型的焊接方式，也是材料加工技术应用新的领域，采用最新一代光纤激光器，配置摆动手持激光枪。主要针对薄不锈钢板铁板、镀锌板等金属材料、精密零件的焊接。可实现点焊、对接焊、叠焊、密封焊等，不但焊缝宽度小，热影响区小，变形小，而且焊接速度快，焊缝平整美观，焊后无需处理或只需简单处理。焊缝质量高，无气孔，可精确控制，聚焦光点小，定位精度高，易实现自动化。

Laser welding is a new type of welding method and a new field of material processing technology. The latest generation of fiber laser is used, equipped with swinging hand-held laser gun. Mainly for the welding of thin stainless steel sheet iron, galvanized sheet and other metal materials, precision parts. It can realize spot welding, butt welding, overlay welding, sealing welding, etc. It not only has small weld width, small heat affected zone, small deformation, but also has fast welding speed, smooth and beautiful weld, and no treatment or simple treatment after welding. The welding seam has high quality, no air hole, precise control, small focus point, high positioning accuracy and easy to realize automation.

## 技术优势 Technical advantage

- ◆ 耗材少，寿命长，更安全，更环保。
- ◆ 操作简单，简单培训即可操作，不用老师傅也能焊出漂亮产品。
- ◆ 焊接速度快，比传统焊接快 2-10 倍，一台机器一年至少可以省 2 个焊工。
- ◆ 重复操作稳定性好。焊剂对焊接工具污染小，且激光照射时间和输出功率易于控制，激光焊成品率高。
- ◆ 突破原有工作台的局限，适用于各种复杂焊缝，轻松对工件任意部位任意角度进行焊接，人性化设计与技术升级。
- ◆ 配置普通或摆动手持激光枪，普通焊接和摆动焊接两种模式，光斑宽度可调节，焊接容错性强，弥补了激光焊接光斑细小的劣势，扩大了加工部件公差范围和焊缝宽度，获得更好的焊缝成形。
- ◆ Less consumables, long life, safer and more environmentally friendly.
- ◆ Simple operation, simple training can be operated, without teachers can also weld beautiful products.
- ◆ The welding speed is 2-10 times faster than the traditional welding speed, and a machine can save at least two welders a year.
- ◆ Repeated operation has good stability. The flux pollutes the welding tools little, and the laser irradiation time and output power are easy to control, and the laser welding yield is high.
- ◆ Breaking through the limitations of the original worktable, it is suitable for all kinds of complex welds, easy to weld any part of the workpiece at any angle, humanized design and technical upgrading.
- ◆ With ordinary or swing hand-held laser gun, common welding and swing welding modes, the spot width can be adjusted, and the welding fault tolerance is strong, which makes up for the disadvantage of small spot in laser welding, enlarges the tolerance range of processing parts and the weld width, and achieves better weld formation.

## 行业应用 Application Industry

广泛应用于橱柜厨卫、楼梯电梯、不锈钢家居、电子电路、广告行业仪器仪表、印制电路、计算机制造、手机通讯、汽车配件、精密器械建筑建材、服装服饰、城市灯光、金银首饰、工艺礼品等行业。

It is widely used in kitchen and bathroom cabinets, stainless steel elevators, stainless steel household, electronic circuit, advertising industry instrumentation, printing circuit, computer manufacturing, mobile phone communications, automobile accessories, precise equipment, building materials, clothing and apparel, city lighting, gold and silver jewelry, craft gifts and other industries.



## 样品展示 Sample Display

焊缝平滑漂亮，焊接工件无变形，无焊疤，过渡平滑，无鱼鳞纹焊接牢固减少后续打磨工序，节省时间和成本。可进行微型焊接。激光束经聚焦后可获得很小的光斑，且能精确定位。

Smooth and beautiful welding seam, no distortion of welding workpiece, no welding scar, smooth transition, no fish scale welding firmly reduce the follow-up grinding process, save time and cost. It can be micro-welded. The laser beam can obtain very small spot after focusing, and it can locate accurately.





# 多维系列紫外激光打标机

Dowell Series Ultraviolet Laser Marking Machine



## 适用材料 Applicable materials

金属及多种非金属材料，陶瓷，蓝宝石片，玻璃，透光高分子材料，塑料。  
Metals and other non-metallic materials, ceramics, sapphire, glass, transparent polymer materials, plastics.

## 适用行业 Applicable industry

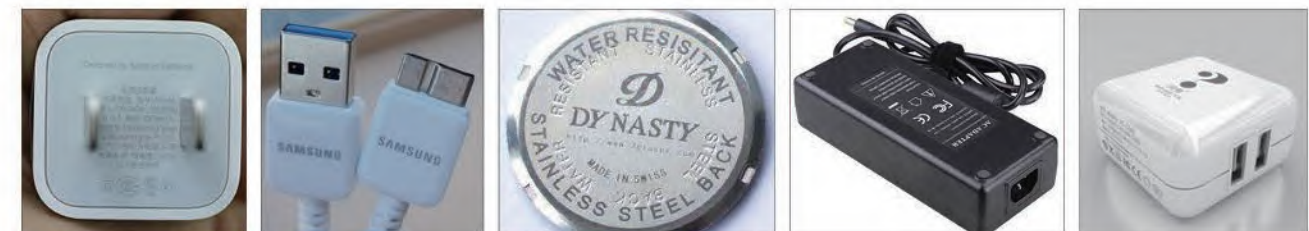
化妆品，药品，食品及其他高分子材料的包装瓶表面打标，消费类电子，手机部件，LCD屏雕刻二维码及商标，陶瓷，蓝宝石片，FPC柔性电路板微孔钻孔，切割生物医学玻璃刻线，电容式触摸屏ITO蚀刻。  
Cosmetics, medicines, food packing bottle surface and other polymer material marking, consumer electronics, mobile phone parts, LCD screen engraving two-dimensional code and trademark, ceramics, sapphire wafer, FPC flexible circuit board micro drilling, cutting biomedical glass line, capacitive touch screen ITO etching.

## 技术优势 Technical advantage

- ◆ 原装进口紫外激光器，性能稳定，体积小，使用寿命更长。
- ◆ 紫外激光器属于冷光源，热影响区小，卓越的光束质量创造出超高精细打标效果。
- ◆ 采用进口扫描振镜，标记速度飞快，同时适合微切割和钻孔。
- ◆ 超高的峰值功率和极少的热效应特点，非常适合氧化铝、氧化锆陶瓷钻孔切割。
- ◆ 激光器免维护，无耗材、使用成本低廉，省电节能。
- ◆ 一体模块化设计，方便维修、体积小巧。
- ◆ 软件可接收 DXF、PLT、BMF、AI、JPG 等格式，并可自动生成流水号和生产日期，条码，二维码。
- ◆ 精度 CCD 自动定位、自动校正，全程监控，精度优于同类产品。
- ◆ 紫外激光器聚焦后的光斑最小可达 15UM，所以非常适合进行微孔钻孔加工。
- ◆ The imported UV laser, stable performance, small volume, long service life.
- ◆ The ultraviolet laser is a cold light source, small heat affected zone, excellent beam quality to create the ultra fine marking effect.
- ◆ It adopts imported scanning galvanometer marking speed fast, and suitable for micro cutting and drilling.
- ◆ The ultra high peak power and low thermal effect, very suitable for drilling and cutting of alumina and zirconia ceramics.
- ◆ The laser free maintenance, no consumables, low cost, energy saving.
- ◆ The development of modular design, easy maintenance, small volume.
- ◆ The software can receive DXF, PLT, BMF, AI, JPG and other formats, and can automatically generate the serial number and production date, bar code, two-dimensional code.
- ◆ The accuracy of CCD automatic positioning, automatic calibration, process monitoring, precision is superior to similar products.
- ◆ The ultraviolet laser focused spot is minimum to reach 15UM, so it is very suitable for micro hole drilling.

## 技术参数 Specification

型号 Type	DW-UV-3W	DW-UV-5W	DW-UV-7W	DW-UV-10W
波长 Wavelength	Nd:Yvo/355nm			
最大激光功率 The maximum laser power	3W	5W	7W	10W
光束质量 M <sup>2</sup> Beam quality M <sup>2</sup>	1.1	1.1	1.3	1.3
调 Q 频率 Q-frequency	0-90kHz			
标记最小字符 The minimum mark character	0.1mm			
标记最小线宽 Marking the minimum line width	0.01mm		0.015mm	
标记速度 Marking speed	400 字符 / 秒 Characters/sec		500 字符 / 秒 Characters/sec	
重复精度 Repeatability	±0.001mm			
雕刻范围 Engraving range	110×110mm 或 180×180mm 可选			
外观尺寸 Dimensions	900×680×1200mm			
整机重量 Total Weight	120kg			
电源要求 Power Requirements	220V/50Hz/10A			
冷却方式 Cooling system	水冷 Water cooling			





## 多维系列三维激光切割系统

Dowell Series 3D Laser Cutting System



### 适用行业 Applicable industry

灵活智能的三维切割设备，广泛适用于汽车制造、医疗器械、模具制造等各类复杂产品的生产与加工。  
Flexible and intelligent three-dimensional cutting equipment, widely used in automobile manufacturing, medical equipment, mold manufacturing and other complex products production and processing.

### 技术参数 Specification

机器型号 Machine model	DW-RC14-LF	DW-RC14-HF	DW-RC18-LF	DW-RC18-HF	RC20-LF	DW-RC20-HF
激光波长 Laser wavelength	1070-1080nm					
空间自由度 Spatial freedom	6轴 6 axis					
臂展长度 Arm length	1400mm	1400mm	1800mm	1800mm	2000mm	2000mm
定位精度 Positioning accuracy	±0.1mm					
最小线宽 Minimum line width	0.1mm					
瞄准定位 Aiming and positioning	红光 Red light					
冷却方式 Cooling mode	水冷 Water-cooling					
安装方式 Installation mode	落地式 Floor type	悬挂式 Suspension type	落地式 Floor type	悬挂式 Suspension type	落地式 Floor type	悬挂式 Suspension type
可选配激光器功率 Optional laser power	500W,700W,800W,1000W,1500w,2000w,2500w,3000w					

### 样品 Sample



## 多维系列激光清洗机

Dowell Series Laser Cleaning Machine



### 激光清洗机特点

#### Laser cleaning machine features:

- ◆ 快捷高效，节约时间；
  - ◆ 无需清洁液或其他化学溶液清洗，无损伤，无污染；
  - ◆ 清洗准确，无需拆卸；
  - ◆ 具较高的适应性和柔性，方便自动化操作；
  - ◆ 清除污物范围和适用基材范围广泛
  - ◆ 可以长期使用，运行成本低。
- ◆ Fast and efficient, save time;
  - ◆ No cleaning solution or other chemical solution cleaning, no damage, no pollution;
  - ◆ Clean and accurate, no demolition;
  - ◆ With a high degree of adaptability and flexibility to facilitate automated operation;
  - ◆ To remove the scope of dirt and apply a wide range of substrates
  - ◆ Can be long-term use, low operating costs.



### 应用范围 Applications:

激光清洗技术实用、高效无损伤、无污染，在污垢、锈斑、油漆、橡胶、塑料、残留的溶剂和粘结剂等方面是传统清洗方法所不及的，拥有广阔市场前景。激光模具清洗代替传统的模具清洗技术，设备模具无损坏，清洗彻底，运营成本低。主要应用在烘焙模具清洗，塑胶出模清洗，橡胶硫化模具清洗，激光清洗刹车片，激光设备油漆清洗，目前，美、德等先进国家基本上都采用激光模具。激光清洗机是一个非常安全的技术，只需在规范操作下做一些激光常用预防措施即可。

Laser cleaning technology is practical, efficient and no damage, no pollution, in the dirt, rust, paint, rubber, plastic, residual solvents and adhesives and other aspects of traditional cleaning methods are less than, with broad market prospects. Laser mold cleaning instead of the traditional mold cleaning technology, equipment mold without damage, cleaning thoroughly, low operating costs. Mainly used in baking mold cleaning, plastic mold cleaning, rubber vulcanization mold cleaning, laser cleaning brake pads, laser equipment, paint cleaning, At present, the United States, Germany and other advanced countries are basically using laser mold. Laser cleaning machine is a very safe technology, just in the normative operation to do some laser commonly used preventive measures can be.

### 样品 Sample:

