

HAN'S LASER 大族激光

Laser Marker Promotion Scheme

J10E

Han's Laser Technology Industry Group Co., Ltd.

Website: www.hanslaser.com

Table of Contents

Table of Contents	2
1 Company Profile	3
2 Introduction to J10E Fiber Laser Marker	6
2.1 Solid Fiber Laser	6
2.2 J10E Laser Marker Overview	6
2.2.1 Machine Structure Principle and Function	7
2.2.2 System Dimension	10
2.2.3 System Technical Parameters	11
2.2.4 Operating Conditions	11
2.2.5 Industry Application	12
3 J10E Fiber Laser Marker Standard Configuration	14
4 Han's Laser Manufacturing Standard	15
5 Han's Laser Service Commitment	16

1 Company Profile



Han's Laser Technology Industry Group Co., Ltd. (hereafter referred to as Han's Laser) is one of the world's major manufacturers of laser processing equipment, serving large customers such as Fortune 500 companies and industrial enterprises above designated size in China. Its businesses include laser marking equipment, laser cutting equipment, laser welding equipment, PCB special equipment, robots, automation equipment, etc., widely used in shipbuilding, rail transit, new energy, precision machinery, consumer electronics and other industries. It is the company with the most complete laser equipment and the most experienced industry segment in China.



Mercedes-Benz



TOYOTA



北仪创新

DAHU®



Thanks to unremitting efforts over the past 20-odd years, we've scored many glories: National Key High-Tech Enterprise, National Innovative Pilot Enterprise, Key Demonstration and Exemplary Enterprise of National Science & Technology Achievement Demonstration Base, Key Equipment Manufacturing Enterprise in Guangdong Province, Shenzhen Independent Innovation Leading Enterprise, with main R&D projects included in China Torch Program.



Han's Laser has more than 15,000 employees and strong R&D strength. It has a composite R&D team of more than 5,200 people covering laser source, automation system integration, linear motor, visual recognition, computer software and mechanical control, 6,962 valid intellectual property rights, and a number of core technologies at the international leading level. Han's Laser has established strategic cooperative relations with many famous scientific research institutions and research institutes.

Premier Li Keqiang highly affirmed our company's outstanding achievements in laser intelligent manufacturing. He praised: Here we see the path and hope of China's manufacturing transformation and upgrading. Premier encouraged us to become stronger and bigger, and make persistent efforts. Han's Laser will, as always, adhere to the mission of "Powerful Nation, Equipment World" to assist the transformation and upgrading of Chinese manufacturing.

Gross revenue in recent years

Established in Shenzhen in 1996

Han's Laser Technology Industry Group Co., Ltd.

Tel/Fax: 0755-86161192

Listed in 2004, the current market value is about 30 billion yuan

The gross revenue in 2014 was 5.567 billion yuan

The gross revenue in 2015 was 5.5 billion yuan

The gross revenue in 2016 was 6.95 billion yuan

The gross revenue in 2017 was 11.56 billion yuan

The gross revenue in 2018 was 11.02 billion yuan

The gross revenue in 2019 was 9.56 billion yuan

The gross revenue in 2020 was 11.94 billion yuan

The gross revenue in 2021 is 16.33 billion yuan

2 Introduction to J10E Fiber Laser Marker

2.1 Solid Fiber Laser

High average output optical power, narrow pulse width, good beam quality, stable output optical power, anti-high reflection, etc.

Main features:

- Small size, air cooling, no need for other cooling methods such as chillers.
- Solid fiber laser and Han's Laser customized high-speed photoelectric galvanometer, with characteristics of high average output optical power, narrow pulse width, good beam quality, stable output optical power, and anti-high reflection.
- Higher peak power.
- Widely used in buttons and light-absorbing sensitive materials.
- Optical fiber output; flexible application.
- Retro-reflection isolator installed: with the particularity of laser wavelength and direction, the retro-reflection isolator adopts a special structure to block the laser beam reflected by the working object and prevent it from entering the laser again and causing damage to the laser.

Function: extend the service life of laser and protect the safety of laser

2.2 J10E Laser Marker Overview

J10E laser marker is one of the leading products that our company mass-produced, with advanced functions, small size and high cost performance, widely used in the market. With Han's special laser, high-speed precision servo motor (galvanometer), and the control software developed by Han's Laser, it is a high-tech product integrating laser technology, precision machinery, electronic technology, computer and other disciplines, and an important equipment to improve the level of modern industrial manufacturing, widely used in electronics, computers, clocks and gifts and other industries, with small size, high marking accuracy, fast speed, good stability, no pollution, low noise and other notable

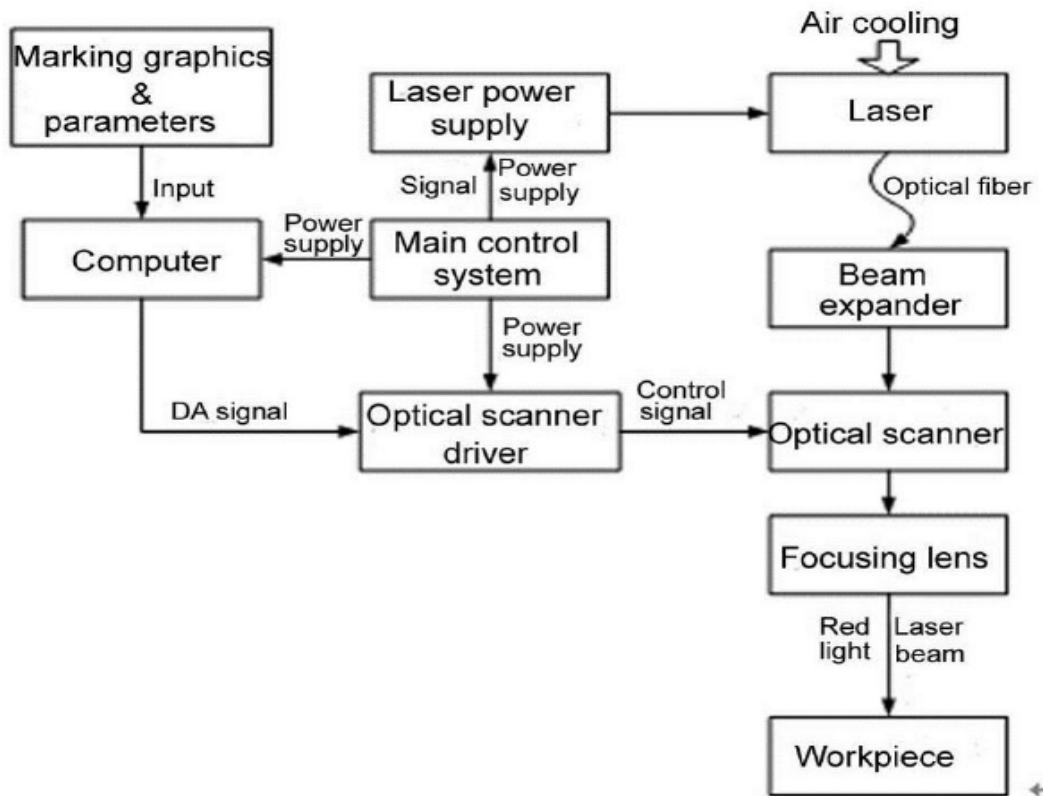
features.

The control software adopts the popular WINDOWS interface in full Chinese, easy to operate and learn. It has complete graphics processing functions, supporting graphics generation, movement, stretching, rotation, mirroring, copying, deletion and other functions. The enhanced text layout function supports TTF font library and SHX font library, and the import of various file formats, such as BMP bitmap, CorelDraw, PLT files, DXF files generated by AutoCAD, etc. The font, font size, word spacing, inclination, arc arrangement, etc. can be set for automatic serial number marking. In addition, it provides the most convenient and accurate correction method to make up for errors in the installation process of the scanning galvanometer. The convenient and comprehensive intelligent control interface can be flexibly connected with various automation equipment and sensors.

Han's Laser R&D system has an automation supporting center, which can provide leading and fast customized technical services for system functions such as software and hardware according to customer needs, so as to meet customer requirements.

2.2.1 Machine Structure Principle and Function

J10E laser marker is composed of laser power supply, XY galvanometer and driver, optical system, cooling system, computer control system, worktable, etc.



The laser beam with a wavelength of 1.06um output by the laser is expanded by the beam expander, and then irradiated to the reflectors of the X-axis and Y-axis galvanometer scanners. Under the control of computer, the galvanometer scanners swing quickly so that the laser beam scans in the two-dimensional directions of the plane X and Y. Then the laser beam is focused on the surface of the processed object to form tiny, high-energy spots, and each high-energy laser pulse instantly ablates the surface of the object to form a mark. After the continuous process controlled by the computer, the pre-arranged text, graphics, numbers and other marked contents are permanently etched on the surface of the object.



J10E model appearance

(1) Laser power supply

A special switching power supply is adopted as the laser power supply, which is integrated into the control cabinet together with the galvanometer switching power supply, making the structure of the whole machine very compact and easy to use.

(2) XY galvanometer and driver

The system composed of XY galvanometer and driver is used for high-precision scanning and precise positioning of laser. The galvanometer adopts high-stability and precise position detection sensing technology and moving magnet and moving coil deflection working methods. The driver adopts a new topology circuit design, and outputs a servo signal under the control of the computer to control the deflection of the galvanometer, so as to accurately mark graphics.

(3) Optical system

The optical system includes fiber laser, beam expander, and reflectors and focusing lenses on the galvanometer scanner.

Fiber laser is an important part of fiber laser marking system. It is a pulsed fiber laser with a wavelength of 1.06um that belongs to infrared light. Low-power fiber lasers have good

absorption for metal and non-metal materials (such as various plastics, stainless steel, aluminum alloys, etc.).

Fiber laser, beam expander, and reflectors and focusing lenses on galvanometer scanners are all high-quality products made by Han's Laser. With high precision, fast speed and stable performance, it can meet the requirements of long-term continuous work.

(4) Cooling system

The cooling system adopts the air cooling method to ensure the long service life, stable and reliable operation of the laser.

(5) Computer control system

The computer control system includes computer, D/A conversion interface circuit and marking control software. The D/A conversion interface circuit converts the digital signal sent by the computer into an analog signal to drive the optical system components to act according to the parameters set by the marking control software and emit pulsed laser light, so as to precisely etch the content to be marked on the processed object surface.

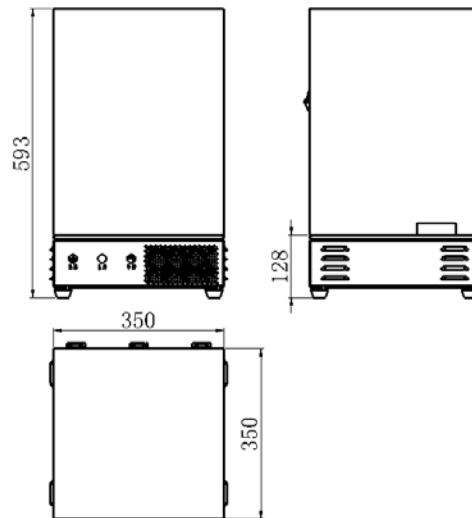
The marking control software independently developed by our company takes WINDOWS WIN10 as the operating platform and has a full Chinese interface, compatible with files output by AUTOCAND, COREDRAW, PHOTOSHOP, CAXA and other software. It can mark barcodes, QR codes, graphic characters, etc., support PLT, PCX, DXF, BMP and other file formats, directly use SHX, TTF fonts, and automatically encode and print serial numbers, batch numbers, dates, etc.

(6) Worktable

The laser marker is equipped with a manual lifting table. By turning the handwheel, the height of the marking lens can be easily adjusted, so that the focal length plane of the lens coincides with the processing surface of the workpiece, achieving precise positioning.

2.2.2 System Dimension

- Main machine system: 350mm×350mm×595mm
- Total weight: 25KG



2.2.3 System Technical Parameters

Laser output power	≤10W solid fiber laser
Laser wavelength	1.06μm
Maximum peak power	≥ 20kW
Optional mode	1
Laser repetition frequency range	30-50 KHz (Frequency is fixed and uncontrollable)
Beam quality M ²	The approximate TEM00 mode
Marking range	100*100mm (F160 lens)
Marking depth	≤0.4mm
Marking line speed	≤7000mm/s
Min. line width	0.1mm
Min. character	0.1mm
Repetition precision	±0.003mm
Total power consumption	≤500W

2.2.4 Operating Conditions

- The ambient temperature is required to be within 15-35°C;
- The humidity is required to be within 10%-90%, no condensation;
- Power grid: 220V, 50Hz single-phase;

- Power grid fluctuation: $\pm 10\%$, the ground wire meets international requirements;
- There should be no strong electromagnetic signal interference near the installation site;
- Foundation amplitude: less than 50um; vibration acceleration: less than 0.05g. Avoid a large number of punching and other machine tools nearby;
- Air pressure: 86-106kpa;
- In some environments, anti-static floors should be installed, and shielding should be strengthened;

2.2.5 Industry Application

The fiber laser marker has good output beam quality and high reliability. It can mark metal materials and some non-metal materials. Laser marking can print various characters, symbols and patterns, and the character size can range from millimeters to micrometers, which has special significance on product anti-counterfeiting, traceability, marking, etc.; compared with traditional marking methods, laser marking has its own unique advantages, mainly in:

- ✧ High marking accuracy, good quality, small line width and small heat affected zone;
- ✧ Fast marking speed and high processing efficiency;
- ✧ Laser processing is a non-contact processing, without mechanical processing force, no deformation;
- ✧ High material adaptability, almost any metal and non-metal materials can be marked;
- ✧ Long service life, no consumables, almost no maintenance, no pollution problems such as noise, oil, machining chips, etc., it is a kind of green processing;
- ✧ Flexible use, fast product changeover, and optional marking content according to the using requirements of use;



Stainless steel



Charger case



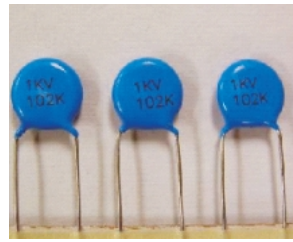
Home appliances



Hardware



Automobile light transmission button



Electrical components



Bearing blackening



Metal relief



Clock



Bitmap marking



Keyboard



Aluminum alloy Blackening

Remarks: Due to the different material properties such as light absorption property, surface roughness, and coating thickness of different materials, the above picture effects are for reference only, and the specific effects are subject to the actual proofing.

The fiber laser marker produced by Han's Laser are widely used in automobile manufacturing, automation equipment, hardware industry, electronic components, household appliances, consumer electronics, electronic cigarette products, instrumentation, jewelry, new energy, mold manufacturing and other industries. The machines running stably every day has reached 100,000 units, which has become a reliable part of the customer's manufacturing chain.

3 J10E Fiber Laser Marker Standard Configuration

S/N	Name	Model & Specification	Qty.	Original manufacturer and place of origin
1	Laser generator	HFE-10A-N	1	Customized by Han's Laser
2	Galvanometer system	UltraScan	1	Han's Laser
3	F- Θ field lens	F160 (standard)	1	Made in China
4	Software	Han's marking software	1	Han's Laser
5	Marking control software	EMCC3400	1	Han's Laser
6	Notebook computer	Laptop (optional)	1	Domestic first-tier brands
7	Display	Touch screen	1	Customized by Han's Laser
8	Desktop cabinet	J10E desktop cabinet	1	Han's Laser
9	Lifter	Electric lifter	1	Han's Laser

Remarks: Standard configuration does not include notebook computer, and it only applies to F160 lens, so larger size lens need to be customized. The cabinet has the safety cover and manual door.

4 Han's Laser Manufacturing Standard

GB 7247.1-2001 Safety of laser products—Part 1: Equipment classification, requirements and user's guide

GB10320-1995 Electrical safety of laser equipment and installations

GB/T15490-1995 General specification for solid state lasers

GB/T13740-1992 Testing method of divergence angle of laser radiation

GB/T13741-1992 Testing method of beam diameter of laser radiation

GB 8702-1988 Regulations for electromagnetic radiation protection

The product quality standard executed by Han's laser: ISO9001: 2000

Based on the ISO9001 standard model, Han's Laser established a quality management system to strictly control and manage all links related to the product quality to ensure that the company can continuously and stably produce products that satisfy customers.

Product installation and acceptance standards:

After the contract is signed, the equipment will be customized, manufactured and installed in full accordance with the customer's technical indicators, so that it can meet the customer's work needs. According to the contract between the two parties, the equipment will be delivered to the customer on time according to the delivery list. After acceptance, the equipment will be installed and commissioned at customer's site. Finally, training about operation, repair and maintenance will be provided to customer's personnel free of charge.

5 Han's Laser Service Commitment

Han's Laser adheres to customer-centricity and provides customers with complete pre-sales and after-sales services such as installation, commissioning, training, and maintenance.

1. Pre-sales service

Before signing the contract, Han's Laser provides customers with various production process solutions, laser equipment technical consultation, sample test, model selection and other services.

2. Installation and commissioning

According to the contract, Han's Laser will safely transport the equipment to the installation location designated by the user within the specified time free of charge, and send technical service engineers to install it on site. Under the condition that the installation and commissioning spare parts are basically available, the technical service engineer will complete the installation and commissioning of the machine within 1-2 days for the user to use, and ensure that the installation and commissioning site is neat, clean and orderly.

3. After-sales training

Han's Laser provides free technical training. After installation and commissioning, technical training is provided to the buyer's operators at the buyer's site or the seller's domestic training and maintenance center.

4. Equipment maintenance

Han's Laser has established a marketing center, 8 branches and more than 100 offices across the country, and resident technical service personnel provide customers with all aspects of after-sales service.

Han's Laser promises:

The equipment is guaranteed for one year free of charge and maintained for life;

Free technical consultation, software upgrade and other services;

Customer service response within 24 hours;

When the warranty period of the equipment expires, maintenance services will be provided for life, and only the accessories will be charged;

Extensive hardware and software support is still available after the warranty expires.

5. Contact information

Department: Low Power Optical Fiber General Equipment Extreme Manufacturing Center

Tel: 0755-86161192