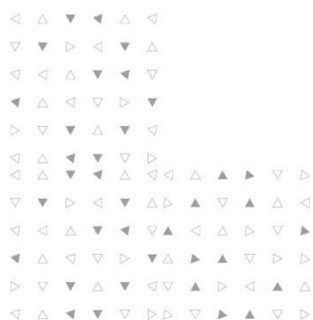
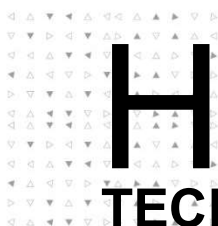


HS-FMW

TECHINCAL SCHEME



Beyond(HSG) Laser is a national high-tech enterprise who is dedicated to providing laser intelligent equipment solutions to customers all over the world. We focus on the field of laser intelligent equipment manufacturing with the concept of efficient, intelligent, environmental protection and compatible product development.

Since our establishment in 2006, Beyond(HSG) Laser has developed rapidly with four standardized intelligent equipment manufacturing base covering an area more than 40,000 square meters. In the area of laser robot, multi-axis professional cutting pipe cutting, precision welding automated production lines and the related, We achieve Flexible Manufacturing and Digital Hierarchical Management. Beyond(HSG) laser intelligent equipment work steadily more than 100 countries and regions. And we have a wide range bench-marking paradigm in the area of precision appliance, auto parts, kitchen hardware, electronics, intelligent home industry. With professional, independent core R & D team and perfect systematic after-sales technical department, we truly provide customer-oriented service experience.

As an important enterprise of laser intelligent equipment, Beyond(HSG) Laser has been providing key technology and customized integration solutions for Industry 4.0 and future factories, helping enterprises to carry out intelligent manufacturing, making intelligent manufacturing to change our

HSG Value

▶ Laser makes

manufacturing easier

Flexible manufacturing.

Information interconnection.

Product full manufacturing process solutions.

▶ Agile innovation

Prime product strategy.

Leading unit technology.

Insight into industry opportunities.

▶ Extreme experience

Creast value for customers.

Develop with customers.

Become a brand loved by the customers.



FMW



MODEL INTRODUCTION

- Latest Developed handheld type continuous fiber laser machine, combined continuous fiber laser source and handheld type welding gun, fill the gap of manual continuous fiber laser welding in the industry.
- Small overall dimensions, compact, and convenient movement.
- Simple operation, easy to master, high welding speed, smooth and flat welding seam, applicable to nonferrous metal welding in metal sheet fabrication industry, which will take place of traditional argon arc welding, YAG welding.
- There are two modes, point welding and continuous welding, no need to prepare fixture tools, one could fix the workpiece with point welding firstly, then full welded it with continuous welding, applicable to those fabrication works of products in small quantity but many varieties.

APPLICABLE RANGE

- Widely apply to advertising, machine cabinet, lighting, metal furniture, service of metal fabrication industries, etc.

MODEL FEATURES

- Handheld welding type, flexible, wide reachable range.
- Simple operation, easy to master, applicable to various kinds of complicated welding seam, overcome the limitations of working tables.
- Continuous welding type mode, smooth and flat welding seam, no fish-scale patterns, no welding scars, which no need polishing in next step.
- Small welding heat affect zone, good welding quality, and least deformation of work piece.
- Over 30% of photovoltaic conversion efficiency, much lower energy consumption.
- Fast welding speed, which is 3 to 5 times speed of Argon Arc welding, enable to save two welding labors.

Handheld type laser welding and Argon arc welding comparation

	Laser welding	Argon arc welding
Welding scar/seam	Smooth, no welding scar	welding scar, color changed, need polishing work
Work piece deformation	N/A	Always have
Consumable items	Protective gas	Welding wire, protective gas
Operation	Mastering easily	Difficult, Experienced masters teaching needed
Efficiency	High	Low
Cost	Low	High

MAIN CONFIGURATIONS

No.	Program	Parameter
1	Laser Source	IPG 1000W
2	Fiber length	15M
3	Laser welding head	Wobble series
4	Water chiller	Special for Laser
5	Working Table	N/A
6	Operation System	point-touch human-computer interaction dialogue system

TECHNICAL PARAMETER

No.	Program	Parameter
1	Laser wavelength	1070±5nm
2	Working Mode	Continuous/Impulse
3	Suggested welding thickness	SS/MS:0.5-2mm
4	Suggested welding gap	<0.5mm
5	Aim positioning	Red light positioning
6	Working voltage	AC220V

OPERATION REQUEST

Content	
<p>Power supply requirements: (Suggest to use stable voltage power source)</p> <ul style="list-style-type: none"> (1) Rated output voltage:220V (2) Frequency:50Hz (3) Three phase voltage stability: +5% (4) Output voltage adjustment:<2% 	<p>Welding auxiliary gas:</p> <p>Clean and dry protective gas Nitrogen(N₂) or Argon (Ar), purity no less than 99.9%, apply to protect the surface of welding seam from being oxidized and protect the lens from being polluted.</p>

WELDING SAMPLES



SAFETY NOTIFICATIONS

- (1) The laser light shoot by handheld type continuous welding facility laser source during operation belongs to class 4 laser, even though the red light only used for notification is belongs to class 3A laser, while operation, we have to comply to the safety standard, strictly operating with safety regulations.
- (2) During operation, laser protective glasses (protecting wavelength 1070nm, optical density OD5+ or higher) should be wore, laser light including indicator red light directly to human eyes and skin is prohibited, also looking at welding laser light beam without wearing protective glasses is prohibited.
- (3) During operation, should wear the protective gloves, in case of laser light reflected to skin which lead to skin burned.
- (4) Combustible material being put inside 0.5m diameter welding range is prohibited, in order to stop laser light reflecting on the combustible material which lead to a fire, also combustible gas cylinders put inside 5m diameter welding range.
- (5) Direct on any non-fabricating work piece, including human body and other combustible material with laser light is forbidden.
- (6) Laser radiation caution should be announced to others when welding light come out, do not direct looking at the welding process without wearing protective glasses.

INSTALLATION AND TRAINING

1. Installation and Debugging

The numerical control fiber laser cutting machine is installed and operated according to two national standards including GB7247-87 Radiation Safety of Laser Product, Equipment Classification and Requirements and User Guide and GB10320-88 Electrical Safety of Laser Equipment and Facilities.

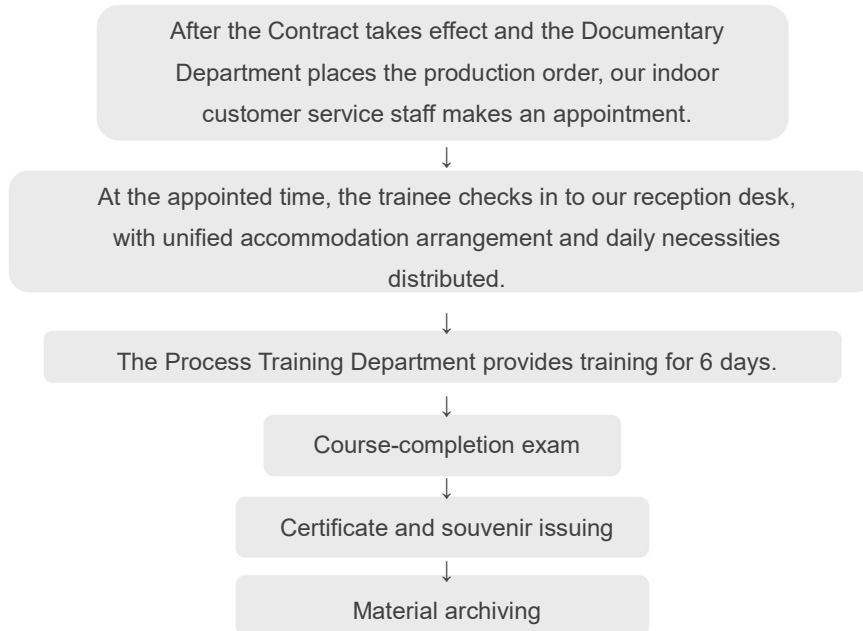
- (1) After the Contract takes effect, we understand the geological position of the plant installation of the demander as soon as possible to determine the specific equipment installation position, and provide the equipment installation guide within seven (7) working days after the Contract takes effect.
- (2) Prior to installation and debugging, the demander shall construct the equipment foundation according to the equipment installation guide provided by us to ensure that the installation site allocation complies with the equipment installation requirements.
- (3) After the demander completes the equipment installation guide and the cargo is delivered to the delivery site, our personnel will install and debug the equipment with the necessary tools and be responsible for completing the equipment installation, debugging, technical index test, trial cutting, training, acceptance and delivery to the demander within five days. The demander shall provide necessary coordination and assistance for equipment installation and debugging by our engineer.
- (4) All expenses relating to installation and debugging and personnel dispatched are borne by us and the demander provides the machine for unloading and personnel's accommodation.
- (5) All equipment provided in the Contract is installed and debugged by us. After the equipment is installed And debugged, we will perform self-inspection for it. After various technical indexes comply with the technical requirements of the Contract, the supplier and demander may accept and use the equipment.

2. Personnel training

Before the equipment is shipped, the demander must dispatch 1-2 operator(s) to our factory or exhibition hall for one-week training. The specific time is subject to the confirmation with our Customer Service Department. Training contents include laser principles, equipment structure, process description, equipment maintenance, laser

safety protection, operation procedure and simple troubleshooting, etc. The trainee shall be the mechanical, electrical or optical assistant engineer or engineer, be familiar with the computer operation and AutoCAD drawing, who must pass the assessment of equipment operation, fundamental laser principles, laser safety protection, maintenance, etc. organized by our Company prior to induction.

3. Training process



4. Packaging, transportation and equipment acceptance

(1) Standard packaging for long-distance motor transportation, dampproof, anti-rust and vibration resistance, suitable for overall hoisting and the hoisting gravity and position are indicated.

(2) Transportation mode: Motor transportation. We are fully responsible for it, including freight and insurance.

(3) A detailed packing list, certificate of quality, equipment specification and all other documents and materials are put into the packaging box. The packing list is attached outside the packaging box and the certificate of quality is put into the packaging box.

After completing the equipment installation, debugging and self-inspection, we accept it on the demander's site, including:

1. Inspection and acceptance of the quantity, model, specification, function, technical indexes, etc. of all goods.
2. Perform laser cutting and machining for the typical specimen approved by both parties.
3. Both parties record the acceptance information and evaluate the acceptance result. The performance may be assessed after signature and approval by both parties.

Notes:

1. Provided that the fault of the auxiliary facility on site (power source, peripheral environment, etc.) and environment do not comply with the requirements of normal equipment operation, which results in the interruption of the test or acceptance, the demander shall immediately recover it, so as to ensure the normal operation conditions of the equipment.
2. Provided that the equipment is in shortage, damaged or does not comply with the Contract terms and quality

standard during acceptance, we will be responsible for supplementing or replacing it and all expenses caused thereby are borne by us.

5.List of accompanying documents

Certificate of quality of tool	One copy
Packing list of tool	One copy
Spare parts	One copy
Nesting accessories	One set

AFTER-SALES SERVICE

The warranty period of this complete equipment(excluding such vulnerable parts and consumable as optical device, lens, etc.) is one year after the equipment is accepted. We will help the demander coordinate the after-sales services of the auxiliary equipment. Our after-sales service engineer will provide the corresponding call support and necessary on-site service according to the problems reported by the customer. The c all and network response time is within 2h and the response time for providing the on-site services is within 24h (except man-made damage or force majeure).

Within the warranty period of the equipment, for the fault caused by the quality of the equipment component, we will maintain or replace the component free of charge and provide free service at the same time (except optical device, vulnerable parts and damage caused by the user's misoperation).

For replacement of the optical devices (including optical device and vulnerable parts), no matter whether they are within the warranty period, they shall be purchased from us to ensure your normal equipment use. Meanwhile, we will be responsible for maintaining them. We will terminate the free warranty service in case of any damage and fault caused by fittings which are not purchased from us and the warranty period will be terminated.

Within the warranty period, we will not provide warranty for the following articles: Nozzle, ceramic article, support bar for cutting, filter element and component, protective lens, O-ring, all lubricating oil, transmission fiber, collimating lens, focus lens, other optical lenses, SMA line and reducing valve.

The professional trained engineer provides users all over the world with technical support and services via the network, who mainly intuitively identifies the faults quickly online from a long distance with such social software as QQ, WeChat, Teamviewer, etc. and timely deals with them, so as to ensure that the user may better use the equipment.



With the unified fault reporting system via 400 hotline, we provide users with fault reporting services and consulting services in terms of the technology, parts, warranty extension, maintenance, etc. Through national unified fault reporting, a particular person is responsible for accepting the fault information reported to avoid mutual forwarding for several times, and thus delaying the maintenance time. Therefore, we may adjust the service team members and mode of service according to the actual situation in different areas.



After-sales hotline: +86 400 8229 288

The professional, careful and improved pre-sales, on-sales and after-sales service systems provide guarantee for the user's continuous machining. There are installation guide, maintenance guide, unloading guide, training guide, etc.



The most improved and largest sales and after-sales service branches in the industry are located in South China, East China, Shandong, North China, Central China, and Southeast China to provide the after-sales service without distance.

STRATEGIC PARTNERS



CERTIFICATE OF HONOR



PATENT CERTIFICATE



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INTELLIGENTLY MADE IN CHINA
LOVED BY THE WORLD