

SENFENG

Cutting | Cladding | Cleaning | Welding | Bending | Automation

Technical Solutions of Portable, Handheld Laser Welding Machine



Contents

I. Product introduction.....	02	X. Customer testimonials.....	15
II. Technical parametes.....	03	XI. Exhibition show.	16
III. Configuration list.....	04	XII. Company strength.....	17
IV. Core components.....	05	XIII. Product series.....	18
V. Welding materials	9	XIV. Global layout.....	22
VI. Application industries.....	10	XV. Core technologies.....	23
VII. Costs.....	11		
VIII. Certificates.....	12		
IX. Star-level service.....	13		

I. Product introduction

SF1500HWM-A

Hand-held laser welding machine (1500W)



- Laser welding refers to welding with the heat generated by focused laser beam hitting weldments.
- As the laser has optical features of refraction and focusing, laser welding is suitable for micro parts and parts with poor weldability.
- Laser welding has the features of low heat input and small welding deformation, and is not affected by electromagnetic fields.
- The welding process is a thermal conduction/penetration type, that is, the workpiece surface is heated by laser radiation, and the surface heat is diffused to the interior through thermal conduction.
- The workpiece is melted to form a specific molten pool by controlling parameters such as laser power, swing width, frequency, etc.

II. Technical parameters

No	Name	Quantity
Optical features	Working mode	Continuous
	Polarization direction	Random
	Adjustment range of output power	10~100
	Central wavelength (nm)	1080±3
	Instability of output power	<3%
	Power of indicating red light (mW)	>0.5
	Output interface	QBH
	Diameter of output fiber core (μm)	30
	Length of output optical fiber	5m
Electrical features	Working voltage	220V±10% · 50/60Hz
	Maximum power consumption (W)	<6000
	Control mode	Display screen
Other features	Size (W×H×D) Notes: handle included	352mm×692mm×666mm
	Weight (kg)	<75
	Range of working temperature (°C)	5~40
	Working relative humidity (%)	<70
	Cooling mode	Air-cooled
	Storage temperature (°C)	-10~60
	Input gas pressure (Mpa)	Not more than 0.7MPa

III.Configuration list

Name	Quantity	Brand
Cabinet	1	Senfeng
Electrical system	1	Senfeng
Welding system	1	Senfeng
Laser machine	1	Senfeng
Welding head	1	Senfeng
Wire feeder	1	Senfeng
Maintenance too (goggles) Operation manual	1	Senfeng
Certificate	1	Senfeng



IV. Core advantages

Independent R&D

From high-efficiency semiconductor packaging pump source, high-brightness single-module fiber laser technology to laser welding control and craft software, Senfeng boasts its independent R&D of core components and key control systems.

High integration

The machine adopts the air-cooled heat dissipation, and no need for additional water-cooling equipment, nor other refrigerants or compressors. Pipes, components, control and maintenance of the water chilling unit are unnecessary, which increases portability and improves the system reliability.

Portable design

The machine weight is less than 75KG and the machine volume is less than 0.2m³, enabling the carry by one single person. The welding machine can be placed in the trunk of a car, which is convenient for transportation and carry. The welding machine can work in different application fields, which becomes more flexible.

Stable performance

The welding machine is highly stable and has a long service life; The handheld welding system is highly integrated, compact in structure and maintenance-free.



- The machine can minimize the heat input, lower the metallographic range of heat affecting zone, and minimize the deformation caused by heat conduction.
- The laser beam can be focused on a small area to weld small, closely spaced parts.
- A wide range of weldable materials, and various heterogeneous materials can also be joined to each other.
- The machine is suitable for high-speed welding by automation, and can also be digitally or computer controlled.
- When welding thick plate or fine diameter wire, there is no problem of meltback, which arc welding has.
- Unaffected by magnetic fields (arc welding and electron beam welding are easily affected), which can precisely target weldments.

Comparison between laser welding and traditional welding

Comparison items	Traditional welding	Laser welding	Senfeng new generation of laser welding
Heat input	Extremely High	Low	Low
Workpiece deformation/undercut	Large	Little	Tiny
Welding strength	High	High	Extremely High (fracture at non-welding joint)
Follow-up processing	Sanding is necessary	Sanding is unnecessary or slight sanding is required	Sanding is unnecessary or slight sanding is required
Welding speed	Slow	3 to 10 times the speed of the traditional welding	3 to 10 times the speed of the traditional welding
Applicable materials	Few	Welding between various materials or between different materials	Welding between various materials or between different materials
Wastage	Much	Less	Less
Operation difficulty	Complex	Simple	Simple
Safety	Unsafe	Safe	Safe
Environmental performance	Not environmental friendly	Environmental friendly	Environmental friendly
Is the facula adjustable?	No	Yes	Yes, and with a large adjustment width
Welding appearance	Bad	Good	Excellent

Welding parameter

Material	Thickness/mm	Swing range/mm	Swing frequency/HZ	Power /w	Welding wire (ER)/mm	Form
Carbon steel	0.5	1	200	300		Welding penetration
	1	2	200	550	1	
	1.5	2	200	750	1	
	2	2.5	200	850	1.2	
	2.5	2.5	200	1000	1.2	
	3	2.5	200	1200	1.2	Firm Welding
	4	2.5	200	1500	1.2	
Material	Thickness/mm	Swing range/mm	Swing frequency/HZ	Power/w	Welding wire(ER304)/mm	Form
Stainless steel	0.5	1	200	300		Welding penetration
	1	2	200	550	1	
	1.5	2	200	700	1	
	2	2.5	200	850	1.2	
	2.5	2.5	200	1000	1.2	
	3	2.5	200	1200	1.2	Firm Welding
	4	2.5	200	1500	1.2	
Material	Thickness/mm	Swing range/mm	Swing frequency/HZ	Power/w	Welding wire(ER5356)/mm	Form
Aluminum	1	2	200	750	1	Welding penetration
	2	2.5	200	1100	1.2	
	3	2.5	200	1500	1.2	

V. Welding materials

The laser welding machine can be used to weld stainless steel, carbon steel, aluminum, chromium, nickel, titanium and other metals; (the following picture show the welding performance of various materials)



Welding of blue light composite aluminum



Welding of carbon steel



Welding of stainless steel



Welding of galvanized plate



Welding of brass



Welding of blue light composite red copper with stainless steel



Welding blue light composite red copper

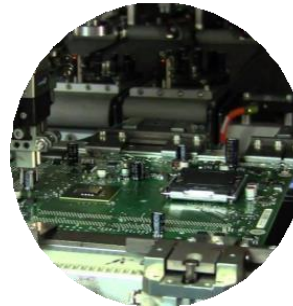


Welding of brass with stainless steel

VI. Application industries



Auto industry



Electronics industry



Food machinery



Household appliances

SENFENG

Cutting | Cladding | Cleaning | Welding | Bending | Automation



Metallurgical industry



Logos and marks

VII. Costs

Items	1500W nitrogen welding
Consumables	0.5 CNY/H
Gas consumption (continuous welding)	6 CNY/H
Total power	6KW
Total power consumption (Calculated by 60% of welding efficiency)	4KW/H
Total operation costs (continuous welding) (Calculated by 1RMB/kwh)	10.5 CNY/H RMB 10.5/H

VIII .Certificates

Senfeng fiber laser machines have passed CE from TÜV,ROHS,FDA,ETL certificates, which is in line with European and American standards.



IX.Star-level service



High efficiency

24 hours a day (mainly for international), 7 days a week, 365 days a year at any time to receive repair calls;
Within 10 minutes, technical engineers will consult, fix maintenance plan in one hour, and send engineers in one working day.



After-sale service

The seller provides one time free installation and training in buyer' s factory. Seller pays for the airplane tickets and salary for engineers, buyer should provide accommodation and food to engineers.

The seller will provide technical guide' s e-mail, telephone, WeChat, WhatsApp and so on.

The seller should pay for the travel expense if local service needed within warranty time.



Warranty

The warranty of laser source is 1 year.

The warranty of the machine is 1 year (main spare parts) ,except for the consumable parts such as ceramic ring, focus lens, nozzle etc. Warranty counts from the date marked on the label of the laser source and machine.

Except the damage artificially, seller is responsible for offering the fittings free of charge during the warranty period.

Exceeding the warranty period, parts need to be repaired or changed, shall be paid.



Worry-free

Pre-sale service: theoretical + practical operation training, self-diagnosis training for common faults, guidance for quick repair of difficult faults, and warning of matters needing attention in use;

Regular service: regular maintenance reminder, regular door-to-door service, regular promotional activities;

Value-added services: equipment software and hardware upgrading services, financial leasing services, delayed warranty service.



Field Service

Our branches in United States, Germany, India, Pakistan, Serbia provide localized services and technical support for global customers.

Service Oriented and Customer First



X. Customer testimonials



XI. Exhibition show



SENFENG
LASER



XII. Company strength



About us



Senfeng Laser is a leading manufacturer engaged in the research, development, Production, sale and service of fiber laser cutters, fiber laser cleaning machine, laser cladding machine, laser welding machine, 3D robot, press brake bending machine, metal sander, etc.



XIII. Product series

Fully Enclosed Metal Sheet Cutter

SF3015H

Fourth Generation Metal Fiber Laser Cutter



SF1530G

Security Protective Fiber Laser Cutter



Automatic Laser Cutting Production Line



Metal Sheet Cutting Machine

SF3015G

Open Type Metal Sheet Laser Cutting Machine



SF20040R

Ultra Large Metal Laser Cutter

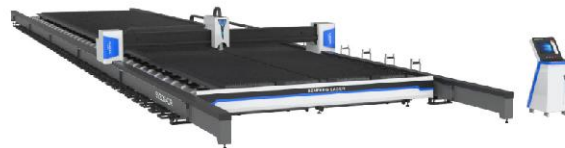


Plate And Tube Cutting Machine

SF3015HM

Full Protection Steel Sheet and Tube Laser Cutter



Tube Laser Cutting Machine

SF6020GT

Bevel Tube Laser Cutting Machine



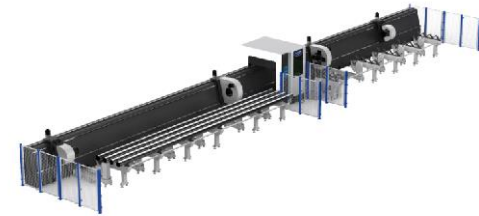
SF6020TZ

Affordable metal tube laser cutter



SF12038HT

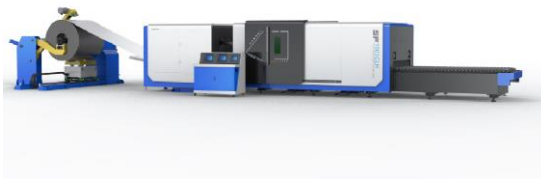
Ultra Heavy Four-chuck Tube Laser Cutting Machine



Coil Fed Laser Cutting System

SF1503CLH

Aluminum Coil-fed Laser Cutting Machine



SF2014CH

Heavy-load coil laser cutting machine



SF1503CH

Coiled Fiber Laser cutting machine



Fiber Laser Welding Machine / Fiber Laser Cleaning Machine

SF1500HWM

Handheld Fiber Laser Welding Machine



SF200HC

Fiber Laser Cleaning Machine



SF1500HC

Portable laser cleaning machine



3D Robot

3D Robot Laser System



3D Robot Fiber Laser Cutting Machine

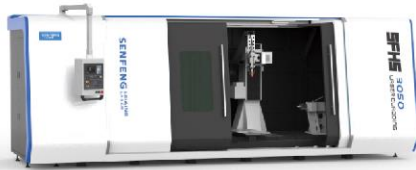


3D robot fiber laser welding machine



Laser Cladding Equipment

SFHS3050
Metal additive machine



SFR6063
Robot Laser Cladding Machine



SFMR02
Mobile Robot Laser Cladding System



Metal sheet bending machine

BDE13032
CNC Bending Machine



BDC-1800
Servo Electric Press Brake



Wide Belt Sheet Metal Sander

SF1000SSD
Automatic Wide Belt Sheet Metal Sander



XIV. Global layout

Senfeng Laser to provide localized services and technical support for global customers.



XV. Core technologies

Senfeng laser generators which are independently developed have been widely used in laser cutting, welding, cleaning, cladding additive and other fields.



- Auto Focus

Operator can set consequent focus adjustment by procedure, finishing quick piercing to thick plates and cutting different thickness plates automatically.

- Storm cut

Storm cut technology with ultra high power laser source, with SENFENG cutting technology, realizing high speed

- Water cooling

Focusing parts of laser cutting head with water cooling, reducing high temperature and flog by long time cutting.

- Bright Cut Technology

Bright Cut Technology developed by SENFENG LASER can efficiently solve: too much burr, cutting surface not smoothly, difficult to cut high-reflect material etc.



More details about senfeng R&D, feel free to visit website: www.sfcnclaser.com

Jinan Senfeng Laser Technology Co.,Ltd

E-mail: senfeng@sfcnclaser.com

Tel/WhatsApp: [86 13210546543](tel:8613210546543)

Website: www.sfcnclaser.com

Add: [No. 2016 Feiyue Avenue, High-tech Zone, Jinan City, Shandong Province, PRC](#)

[\(Site for business:No.6333 North Lingang Road\)](#)

