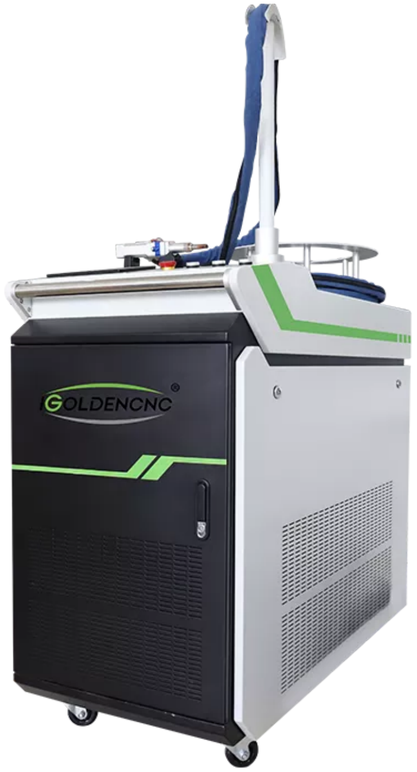
iGWL

HAND-HELD LASER WELDING MACHINE

Inquiry Now

Live Chat



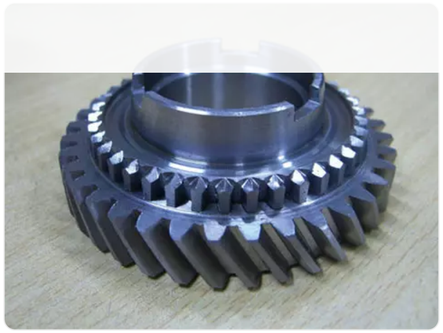
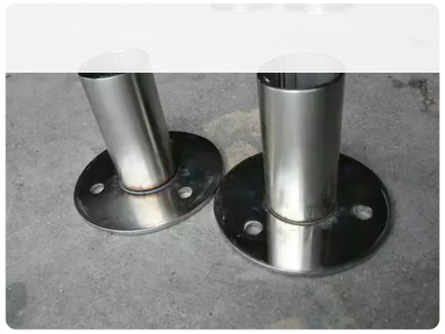
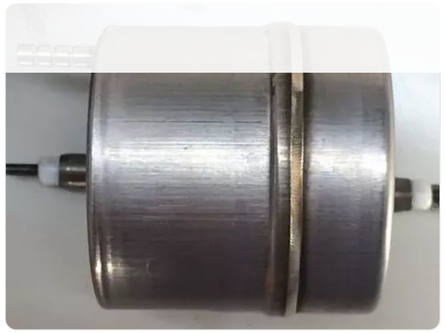
Laser Welding Machine Introduction

Hand-held laser welding machine, using infrared precise positioning, flexible and convenient, firm welding, no consumables, smooth and fine welding seam and not easy to deform, mainly for laser welding of large workpieces, widely used in large and medium-sized sheet metal, cabinets, chassis, aluminum alloys Long-distance spot welding, full welding, continuous welding, sealed welding, etc. of large workpieces such as door and window frames, stairs, elevators, stainless steel furniture, etc.

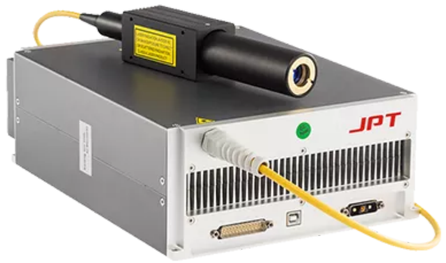
Laser Welding Machine Parameter

Item No.	iGWL
Laser Wavelength	1070-1080nm
Laser Power	500w/1000w/1500w/2000w
Welding Speed	0-120mm/s
Welding Thickness	0.5-3mm
Laser Output Stability	±2%
Fiber Diameter	100μm
Fiber Length	10m (15m optioned)
Spot Diameter	Φ0.2mm
Pump Source	Semiconductor
Light Beam	≤1.1
Voltage	220V±5%/50Hz
Cooling Method	Water-cooling
Water-cooling Temperature	15-35℃

Laser Welding Machine Sample

Collimation focal length: 150mm Focus focal length: 250mm Fiber diameter: 50μm Protective gas>15LLmin				
Numbering	material	Output Power	Penetration (mm)	Speed (mmmin)
1	stainless steel	500	1.5	0.85
2	stainless steel	500	1	2.55
3	stainless steel	500	0.5	6.8
4	stainless steel	750	2.5	0.85
5	stainless steel	750	2	2.55
6	stainless steel	750	1.5	2.17
7	stainless steel	750	1	6.8
8	stainless steel	1000	0.5	8.5
9	stainless steel	1000	3	0.85
10	stainless steel	1000	2.5	2.55
11	stainless steel	1000	2	3.4
12	stainless steel	1000	1.5	5.1
13	stainless steel	1000	0.5	12.75
14	Carbon steel (low)	500	1	1.28
15	Carbon steel (low)	500	0.5	5.1
16	Carbon steel (low)	750	2	0.85
17	Carbon steel (low)	750	1.5	2.55
18	Carbon steel (low)	750	1	5.95
19	Carbon steel (low)	750	0.5	7.62
20	Carbon steel (low)	1000	2.5	0.85
21	Carbon steel (low)	1000	2	2.55
22	Carbon steel (low)	1000	1.5	4.25
23	Carbon steel (low)	1000	1	6.8
24	Carbon steel (low)	1000	0.5	11.05
25	Pure aluminum	500	1	0.85
26	Pure aluminum	750	1	1.7
27	Pure aluminum	1000	1	3.4
28	Pure aluminum	1000	2	0.85
29	Red copper	1000	0.3	1.7



FIBER-OPTIC LASER

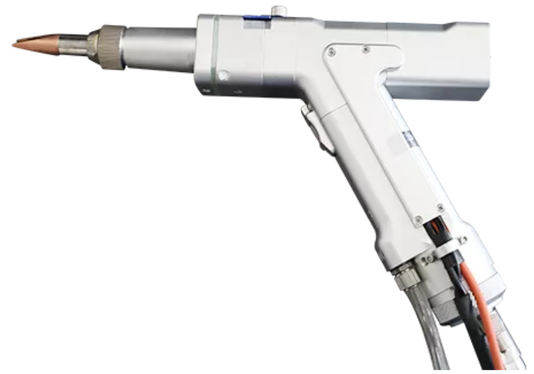
The quality of the laser determines the quality of the handheld laser welding machine. We choose the advanced fiber laser, he service life is more than 10w hours, the energy consumption is small, the failure rate is low, the flexible optical fiber is up to 10-15m, flexible and convenient, can be outdoor welding, and equipped with a rigid protective layer.

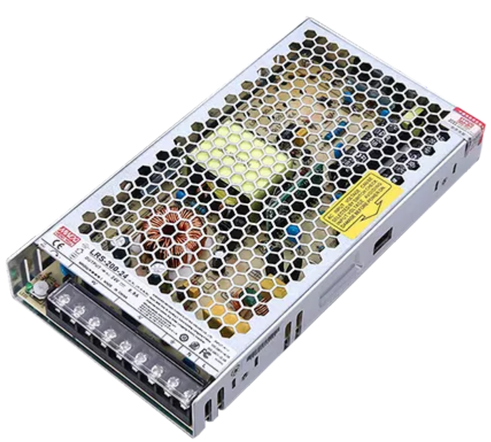
HAND-HELD SWING WELDING HEAD

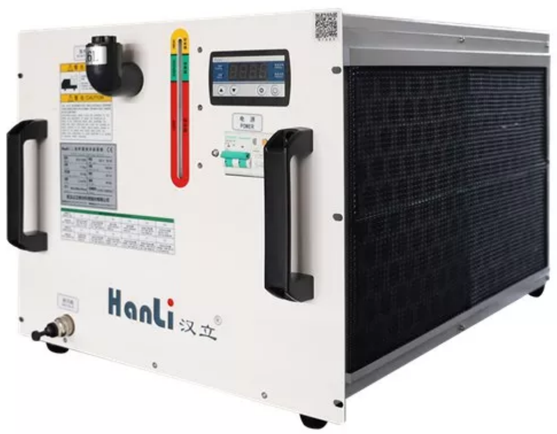
To solve the limitation of the stroke space of the workbench, the front positioning head made of copper can be replaced, the focusing head can be telescopic and focusing, and the rear protective tube sleeve ensures line safety.

Touch switch control, optional swing range, large gap can be easily welded, dead weight <1.5kg, good hand feeling.

Optional automatic wire feeding, wire feeding thickness is optional, speed is adjustable, the gun head is moved by the ribbon to advance at a uniform speed, and the welding seam is uniform and accurate.







TAIWAN MEANWELL POWER

Ensure the stable operation of the handheld laser welding machine, more safe, prolong the service life of the laser welding equipment.

S&A WATER CHILLER

The special water cooling machine for fiber laser welding machine, ensures the stable operation and safety of the laser welding equipment.

ERGONOMICS OF HANDHELD LASER WELDER

Optical fiber coiling area, touch screen panel, botton control, side-opening cabinet door, universal wheel with lock, integrated main cabinet, heat dissipation air duct, the **handheld laser welding machine** will be more convinient and easy to operation.

APPLICABLE MATERIALS

MATERIALS	CUT	ENGRAVE	MARK	WELD
Stainless steel				√
Carbon steel				√

Aluminum				√
Copper				√
Galvanized sheet				√
Gold				√
Silver				√
Nickel plate				√
Manganese plate				√

COMPARISON OF LASER WELDING AND TRADITIONAL WELDING METHODS

Welding method	Heat affected zone	Thermal deformation	Weld quality	Whether to add solder	Welding environment
Laser welding	Smaller	Smaller	better	no	No special requirements (except for special industries)
Brazing	general	general	general	Yes	Overall heating
Argon arc welding	Larger	Larger	general	Yes	Need electrodes
Resistance welding	Larger	Larger	general	no	Need electrodes
Plasma arc welding	general	general	general	Yes	Need electrodes
Electron beam welding	Smaller	Smaller	better	no	vacuum

LASER WELDING CHARACTERISTICS

Laser welding is a new type of welding method. laser welding equipment is mainly aimed at welding thin-walled materials and precision parts. It can realize spot welding, butt welding, overlap welding, sealed welding, etc., and its characteristics are:

- has a high aspect ratio, small weld width, small heat-affected zone, small deformation and fast welding speed.
- The welding seam is smooth and beautiful, no need to deal with after welding or only simple processing procedure.
- The welding seam is of high quality, no porosity, can reduce and optimize the base metal impurities, the structure can be refined after welding, and the weld strength and toughness are at least equivalent to or even higher than the base metal.
- It can be precisely controlled, the focused light spot is small, it can be positioned with high precision, and it is easy to realize automation. It can realize welding between some dissimilar materials.

iGOLDENCNC laser welding is mostly high-power lasers, the power is above 500 watts, generally, this kind of laser should be used for plates above 1mm. The welding mechanism is deep penetration welding based on the pinhole effect, with a large aspect ratio, which can reach more than 5:1, fast welding speed and small thermal deformation. It has a wide range of applications in machinery, automobiles, ships and other industries. There are also some low-power continuous lasers whose power is between tens to hundreds of watts. They are used more in plastic welding and laser brazing industries.