



PLEASE
ASK FOR
AN OFFER

PRODUCT INTRODUCTION

- ! Laser welding is a welding method that uses a focused laser beam as an energy source to bombard the weldment with the heat generated.
- ! Because the laser has optical properties such as refraction and focusing, laser welding is very suitable for the welding of micro-parts and parts with poor weldability.
- ! Laser welding has the characteristics of low heat input, small welding deformation, and is not affected by electromagnetic fields.
- ! The welding process is of thermal conductivity type, that is, the surface of the workpiece is heated by laser radiation, and the surface heat is diffused to the inside through heat conduction.
- ! By controlling the laser power, swing width, frequency and other parameters, the workpiece is melted to form a specific molten pool.

TECHNICAL PARAMETER

Laser Power	1.5kw	2kw	3kw
Welding Gun	single wobble/double wobble		
Fiber Laser (kw)	1/1.5/2		
Fiber Length(m)	10		
Machine size(mm)	954*715*1080		
Machine Weight	220kg		
Welding Speed Range(mm/s)	0-120		
Cooling Mode	Walter Cooling		
Machine Power	7kw	9kw	12kw
Voltage and frequency	Standard: 380V/50HZ/60Hz (Other voltage and frequency is optional)		

MAIN FEATURES

Laser Device

Apply a special laser version for welding, better beam quality, more stable, low light decay, and durable.

Welding Machine

- Using wobble welding head, wobbling width $\geq 4\text{mm}$, can be applied to more complex welding requirements
- Double protection lens welding head, one more protection
- The focusing lens is designed for quick disassembly and assembly, which is more convenient for maintenance and repair
- The temperature-sensing alarm light can remind the operator to replace the protective mirror in time.

Cleaning System

- Simple operation interface, freely set welding power, wobble width, wobble frequency and other data
- The parameter saving function allows customers to pre-store parameter data according to different materials and thicknesses, which is convenient for reuse and timely retrieval.

Welding Machine

- Adopt dual temperature and dual control water cooler, segmented control, make the beam output stably and ensure the life of the laser and welding gun
- One-button intelligent control system is easy to operate, ISO9001 quality management system, fault code query system
- Integrated design, easy maintenance.

The heat input can be reduced to the minimum required amount, the metallographic change range of the heat-affected zone is small, and the deformation caused by heat conduction is also the lowest.

There is no need to use electrodes, and there is no concern about electrode contamination or damage. And because it is not a contact welding process, the wear and deformation of the machine tool can be minimized.

The laser beam can be focused on a small area, and small and closely spaced parts can be welded.

There is a wide range of weldable materials, and various heterogeneous materials can also be joined to each other.

It is easy to automate high-speed welding, and it can also be controlled by digital or computer.

When welding thin materials or thin-diameter wires, there is no trouble of melting back like arc welding.

It is not affected by the magnetic field (arc welding, and electron beam welding are easy), and can accurately align the weldment. Two metals with different physical properties (such as different resistances) can be welded

Comparison of laser welding and traditional welding methods

Comparison item	Traditional welding	Laser welding	H.KLEEMANN new generation laser welding
Heat input to the workpiece	Very high	Low	Low
Deformation of the workpiece, undercut	Huge	Small	Tiny
Bond strength to base material	Average	Good	Great
Subsequent processing	Need sanding	No sanding or a bit sanding	No sanding or a bit sanding
Welding speed	Average	More than 2 times of argon arc welding	More than 2 times of argon arc welding
Applicable materials	Stainless steelcarbon steelgalvanized sheet	Stainless steelcarbon steelgalvanized sheet	Stainless steelcarbon steelgalvanized sheet
Supplies	Plenty	A few	A few
Operation difficulty	Complex	Average	Easy
Operator's safety	Not safe	Safe	Safe
Environmental protection impact	Not environmentally protective	Environmentally protective	Environmentally protective
Welding fault tolerance	Bad	Good	Great
Weaving welding	None	None	Equipped
Adjustable light spot width	None	None	Equipped
Welding quality comparison	Low	Average	Super High

WELDING PARAMETERS

	Thickness	Weld Method	Weld Gap	No wire or yes	Filling Diameter	Power	Wobble Width	Air pressure
Stainless Steel & Carbon steel	0.5mm	Butt		Yes	/	300-500W	2mm	0.1-0.2Mpa
		90° interior angle	<0.12mm	No	/	300-500W	2mm	0.1-0.2Mpa
		90° outside angle		No	/	300-500W	2mm	0.1-0.2Mpa
	1.0mm		<0.2mm	No	/	500-700W	2mm	0.1-0.2Mpa
		Butt	0.2-0.8mm	Yes	0.8	500-700W	2mm	0.1-0.2Mpa
		90° interior angle	<0.2mm	No	/	400-600W	2mm	0.1-0.2Mpa
		90° outside angle	0.2-0.8mm	Yes	0.8	500-700W	2mm	0.1-0.2Mpa
			<0.2mm	No	/	400-600W	2mm	0.1-0.2Mpa
		90° outside angle	0.2-0.8mm	Yes	0.8	500-700W	2mm	0.1-0.2Mpa
	1.5mm		<0.3mm	No	/	500-800W	2mm	0.1-0.2Mpa
		Butt	0.3-0.8mm	Yes	0.8	600-900W	2mm	0.1-0.2Mpa
		90° interior angle	<0.3mm	No	/	500-800W	2mm	0.1-0.2Mpa
		90° outside angle	0.3-0.8mm	Yes	0.8	600-900W	2mm	0.1-0.2Mpa
			<0.3mm	No	/	500-800W	2mm	0.1-0.2Mpa
		90° outside angle	0.3-0.8mm	Yes	0.8	600-900W	2mm	0.1-0.2Mpa
Stainless Steel & Carbon steel	2.0mm		<0.4mm	No	/	700-1000W	2-2.6mm	0.1-0.2Mpa
		Butt	0.4-1.0mm	Yes	1	800-1200W	2-2.6mm	0.1-0.2Mpa
		90° interior angle	<0.4mm	No	/	700-1000W	2-2.6mm	0.1-0.2Mpa
		90° outside angle	0.4-1.0mm	Yes	1	800-1200W	2-2.6mm	0.1-0.2Mpa
			<0.4mm	No	/	700-1000W	2-2.6mm	0.1-0.2Mpa
		90° outside angle	0.4-1.0mm	Yes	1	800-1200W	2-2.6mm	0.1-0.2Mpa
	3.0mm		<0.5mm	No	/	900-1300W	2.6-3.8mm	0.1-0.2Mpa
		Butt	0.5-1.2mm	Yes	1.0/1.2	1000-1500W	2.6-3.8mm	0.1-0.2Mpa
		90° interior angle	<0.5mm	No	/	900-1300W	2.6-3.8mm	0.1-0.2Mpa
		90° outside angle	0.5-1.2mm	Yes	1.0/1.2	1000-1500W	2.6-3.8mm	0.1-0.2Mpa
			<0.5mm	No	/	900-1300W	2.6-3.8mm	0.1-0.2Mpa
		90° outside angle	0.5-1.2mm	Yes	1.0/1.2	1000-1500W	2.6-3.8mm	0.1-0.2Mpa
Stainless Steel & Carbon steel	4.0mm		<0.6mm	No	/	1200-1700W	2.6-3.8mm	0.1-0.2Mpa
		Butt	0.6-1.5mm	Yes	1.0/1.2/1.6	1400-1900W	2.6-3.8mm	0.1-0.2Mpa
		90° interior angle	<0.6mm	No	/	1200-1700W	2.6-3.8mm	0.1-0.2Mpa
		90° outside angle	0.6-1.5mm	Yes	1.0/1.2/1.6	1400-1900W	2.6-3.8mm	0.1-0.2Mpa
			<0.6mm	No	/	1200-1700W	2.6-3.8mm	0.1-0.2Mpa
		90° outside angle	0.6-1.5mm	Yes	1.0/1.2/1.6	1400-1900W	2.6-3.8mm	0.1-0.2Mpa

The above parameters are only recommended parameters (or parameter adjustment direction guide) because the actual welding products of customers are different, they need to be adjusted flexibly depending on the actual situation.

WELDING MATERIALS

Laser welding machine can be used in welding stainless steel, carbon steel, aluminum, chromium, nickel, titanium, and other metals.

APPLICATION INDUSTRY

- Automobile industry
- Electronic industry
- Food machinery
- Household appliances manufacturing
- Metallurgy industry
- Decorative advertising