Fiber Laser Welding Machine Hand-Held

Laser hand-held laser welding machine using the latest generation of fiber laser.

Equipped with custom-developed welding torch to fullfill the laser equipment industry hand-held welding requirement.

With the advantages of simple operation, beautiful weld, high welding speed, low consumables and others.

Very good for thin stainless steel plate, iron plate, galvanized plate and other metal materials welding.

Can replace the traditional argon arc welding especially MIG, TIG processes and other welding technology.

Hand-held laser welding machine can be widely used in cabinet kitchen, staircase elevators, shelves, ovens, stainless steel doors and window guard rails, distribution boxes, stainless steel homes and other industries complex irregular shapes.

Major Advantages of Laser Welding Machine

- **Flexibility**： it's suitable to weld any shaped products

- High efficiency
  - the welding speed is 2-10 times faster than the traditional welding processing speed
  - compatible with a wide range of models, and short changeover times

- High welding quality:
  - no distortion, no welding scar, and very strong
  - Welding seam surface smooth and beautiful, no need to make further grinding processing, save time and cost

- Modular compact design with less layout space, beautiful and easy to maintain and commissioning;

- Simple operation: the operator will get started quickly even without any experience.

Comparison with Other Welding Systems

Features	Traditional Welding	Hand-Held Laser Welding
Heat input to the workpiece	High	Low
Deformation of workpiece	High	Small
Bonding strength with the base metal	General	Good
Secondary Operation	Polishing	No polishing or little polishing
Speed of welding	Slow	more than 2 times faster
Applicable materials	Stainless steel, Carbon steel, Galvanized sheet, Aluminium	Stainless steel, Carbon steel, Galvanized sheet, Aluminium
Consumables	High	Low
Operation	Complicated	Simple
Operator's safety	Higher Risk	Safe
Environmental protection impacts	No Environmental Protection	Environmental protection
Weld fault tolerance	Good	Good
Swing welding	No	Yes
Adjustable spot width	No	Yes
Comparison of welding quality	Lower	Higher

Welding shape:

T, L, large arc and round parts with diameter more than 30mm

Simple and convenient operation

Application:

railings of stairs and elevator , shelves, oven, stainless steel guardrail, electrical box, stainless steel home supplies, **kitchen ware, electrical energy, furniture, car manufacturer, tool& machinery, military, ship industries** etc.

Technical Parameter

Part Name	Description	Brand
Laser	1Kw-2Kw	IPG, Raycus Optional
Welding Head	SUP15S	QY
Cooling Chiller	1Kw-2Kw	Hanli
Controller System	Hand-held feeding system	QY
Electrical Box	Chiller and laser integrated	QY
Electrical Components	Schneider	French
Pneumatic Valve	SMC	Japan brand
Wire Feeder	WF-007A	
Holder	MT-602(0.5-1.5)	Optional

Chiller Model No	SCH-1000、SCH-1500、SCH-2000
Power Supply	AC 220V 50Hz/60HZ
Freon	R410A
Power Consumption	1.5Kw
Chiller Capacity	15L
Environment	(℃)0～40
Humidity	0～80%
Chiller Control Range	(℃)10-40
Flow Switch	Work flow＞5L/min Disconnect flow＜5L/min

Professional laser wire welding software

1、 Professional handheld welding software, better compatible with wire feeder, easy to expand

2 、 A variety of process plan adjustments, up to 9 process storage, direct call to facilitate product replacement, greatly shortening the debugging time.

3、The unique laser offset adjustment is better than the manual adjustment of the spot offset on the market, which is directly input in the system, which is low and convenient for employees.

4、 Powerful system, slow rise and fall, laser offset, advance and delay, continuous and pulse comparable to computer welding systems. Perfectly solve the problem of broken wire in feeding wire welding.

Constant temperature control for stable operation

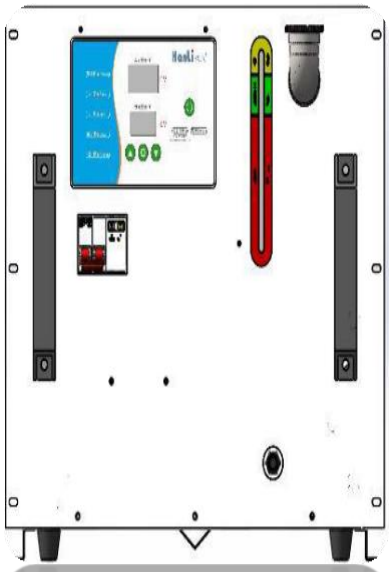
1、Built-in cooling water circulation system, with deionizer, filter, constant temperature control, can avoid frequent replacement of circulating water;

2、Temperature control accuracy ±1℃;

3、The intelligent thermostat has two temperature control modes, suitable for different use occasions; there are multiple settings and fault display functions;

4、With multiple alarm protection functions: compressor delay protection; compressor overcurrent protection; water flow alarm; temperature over/low alarm;

6、 Longevity and durability, easy to operate;



Integrated control cabinet reduces operating costs

1、 Simple and wireless: The concise and orderly slot design makes the line connection way in an orderly manner. All controls can be completed with only one power cord.

2 、 Space saving: Reasonable layout integration of various components, high integration, and 50% space saving compared with traditional split connection.

3、Nice appearance: The simple and stylish physical design of the integrated operating room is not only convenient for display, but also in line with modern people's purpose of saving space and being beautiful.

4、 Perfect care: The protection of electrical components is more complete, dustproof and fireproof.

Welding Material and thickness

Material	1000W	1500W	2000W
Stainless Steel	0.3mm—2mm	0.3mm—3mm	0.3mm—4mm
Mild Steel	0.3mm—1.5mm	0.3mm—2.5mm	0.3mm—3.5mm
Aluminum	0.8mm—1mm	0.8mm—1.5mm	0.8mm—2.5mm
Brass	0.8mm—1mm	0.8mm—1.5mm	0.8mm—2.5mm

Note: above parameters are for reference, if double side welding is acceptable, the welding thickness will be increased.

Welding Speed

Material	Stainless Steel(m/min)							
T (mm)	0.5	0.8	1.0	1.2	1.5	2.0	2.5	3.0
1Kw	4	3	2.5	2	1.2	*	*	*
1.5Kw	7	5	4	3.5	3	2	*	*
2Kw	10	7	6	5	4	3	2.5	2

Material	Aluminum(m/min)				
T (mm)	1	1.2	1.5	2	2.5
1Kw	3	1	*	*	*
1.5Kw	6	2.5	2	*	*
2Kw	8	4	3	2	1.8

Material	Mild Steel(m/min)							
T (mm)	0.5	0.8	1.0	1.2	1.5	2.0	2.5	3.0
1Kw	4	3	2.5	2	1.2	*	*	*
1.5Kw	7	5	4	3.5	3	2	*	*
2Kw	10	7	6	5	4	3	2.5	2

Material	Mild Steel With Zn(m/min)						
T (mm)	0.5	0.8	1.0	1.2	1.5	2	2.5
1Kw	3.8	2.8	2.3	1.8	1	*	*
1.5Kw	6.8	4.8	3.8	3.2	2.8	*	*
2Kw	9	6.8	5.8	4.8	3.8	2.3	2.0

Cutting Gas

If not high demanding on welding surface, N2 is enough

If high demanding on welding surface, Argon gas

Pressure: 0.1-0.2Mpa

Welding angle and other considerations

◆During the welding process, the welding tip must be always horizontal downwards, and upwards is prohibited.

◆ Welding arcs and circles need to be welded in sections (such as 1/4 circle), and it is not possible to weld 1/2 circle or large-angle arc at a time which cause welding through, not welded well, and the welding tip damaged by polarized light.

◆ The welding gun is perpendicular to the left and right of the weld bead, and 45 degrees to the welding seam is best.

◆ Argon gas will be used during welding for protection.

◆ If wire feeder is used for welding, the welding speed is preferably the same as the wire feeding speed, it's not allowed to force the welding speed speed-up or slow-down. The max. welding gap is 2mm(1.6mm welding wire will be used when the gap is 2mm). Please use the suitable wire for different gap, and do not forcibly slow down or forcibly lift-up to make more wire filling, otherwise the wire feeder may be easily stuck, broken and sticky.

◆ It's prohibited to weld in the case that

- welding aluminum, copper and other non-ferrous metals, if it is too thick
- the material problem
- insufficient power

Non-ferrous metals is with light reflection, it's possible to damage the welding nozzle and the lens, even laser source by forcible welding.

Machine including:

1. Laser source system IPG or Raycus brand, optional

2. Cooling chiller

3. Control system (English control panel)

4. Laser gun

5. Wire Feeder

5. Consumables: protective lens and nozzle, we will provide 5 pcs lens and 5 nozzles for spare use.