

Multifunctional laser welder-----EF-Hybrid

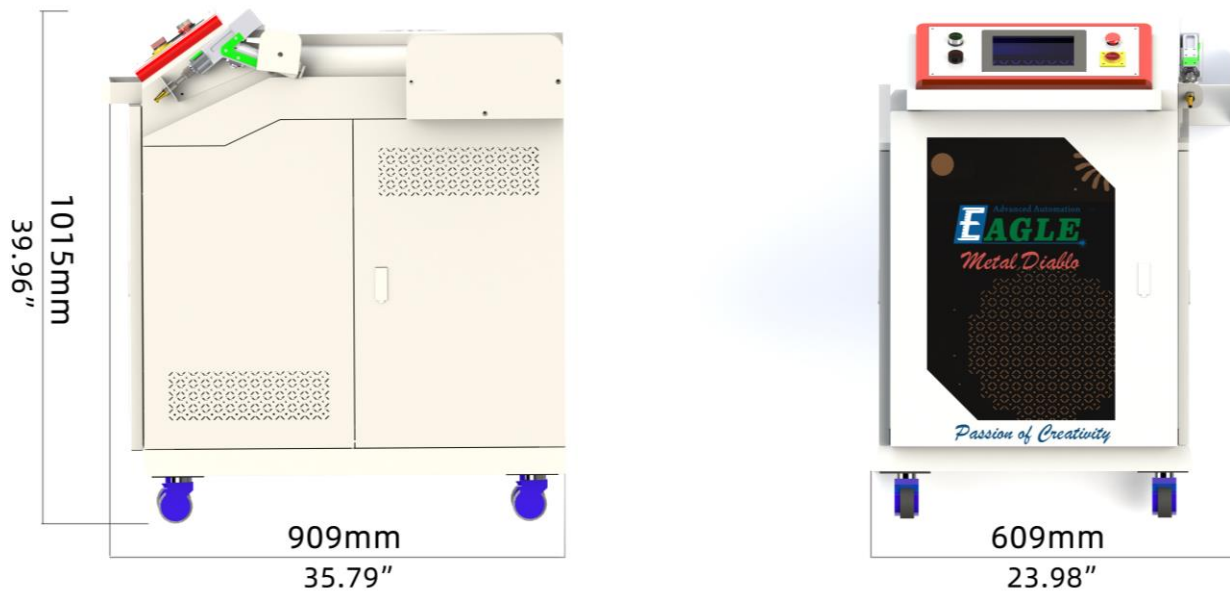


Compared with the traditional welding machine, EF-Hybrid laser welder adopts the integrated design, built-in efficient operation of the water chiller and laser, occupying less space, powerful. EF-Hybrid is equipped with efficient welding gun, making it easier to use. Through the replacement of different functions of the nozzle and the adjustment of the relevant parameters can be achieved for different materials, different thickness of the material welding, cutting, and cleaning. The three main functions into one, to achieve a multi-purpose machine, while equipped with four casters, can be moved to weld different occasions work.

1. EQUIPMENT CONFIGURATION LIST

Item	Quality
Laser source	1
Auto wire feeder	1
Built-in Water Chiller	1
Intelligent single pendulum handheld welding head	1
Full set of nozzles	1
Control panel and control system	1
Protective gloves	1
Instruction	1

2. TECHNICAL PARAMETERS AND SPECIFICATION DESCRIPTION



EF-Hybrid	
Rated output power	1500W
Power adjustment range	5%-100%
Fiber core diameter	20um/30um/50um
Output fiber length	394"(10m)
Working voltage	220V±10% AC
Maximum power consumption	6KW
Laser welding depth	1mm-3mm
Laser cooling water temperature	+20°C to+28°C (+68°F to +82°F)
QBH output head cooling water temperature	+28°C to+30°C (+82°F to+86°F)
Welding seam requirement	≤1.2mm
Depth of Melt	4.0mm
Spot range	0-5mm
Pulse frequency	10-5000Hz
Cooling water pressure	2-3bar
Working ambient temperature	+50°F to+104°F (+10°C to +40°C)
Working environment humidity	10%-80%
Dimension (LWH)	35.79" ×23.98" ×39.96" (909mm×609mm×1015mm)
Weight	441lbs (220kg)

3. MECHANICAL ADVANTAGES

Laser Source



This series fiber laser is a compact and efficient high-power laser with high power, ideal beam quality, maintenance-free, and high electro-optical conversion efficiency, which can be used for cutting, welding, and drilling of stainless steel, carbon steel, aluminum, copper, and other metal materials, and is widely used in sheet metal cutting, hardware processing, home appliance manufacturing, and automotive manufacturing.

🔗 High Level Vertical Integration

All key components are designed and produced in house
 Strict quality control, high consistency and reliability

🔗 Compact Design, Maintenance Free

Highly integrated system with modular design
 Easy maintenance significantly reduce TCO

🔗 Excellent Material Processing Performance.

Strong capability in thick material processing
 High speed in thin sheet cutting

🔗 Smaller Size with Higher Stability

>60% reduction in volume
 Higher flexibility when integrated in to system

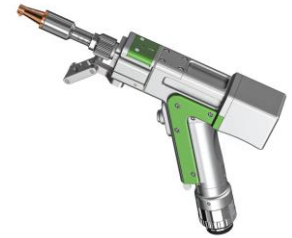
Laser Source-1500W	
Nominal power	1500W
Mode of operation	CW/Modulated
Polarization	Random
Power tunability	10 to 100%
Wavelength	1080 ± 10 nm
Power stability	±1 %
Laser beam quality	≤1.5 mm x mrad (50µm QBH)
Modulation frequency	≤5 kHz
Preview red light power	150 µW
Interface	QBH (LOC)
Length	32ft/39ft(10/12m) standard, other lengths optional
Diameter	50 µm
Bending radius	7.87" (200 mm)
Supply voltage	220VAC (-15% to +10%) Single-phase
Operating temperature	+50°F to+104°F(+10°C to+40°C)
Storage temperature	+10°F to+140°F(-10°C to+60°C)
Humidity	10 to 85%
Cooling method	Water Cooling
Cooling medium	Distilled water/ Glycol Antifreeze



Intelligent Singe Pendulum Handheld Welding Head

The handheld torch is compact, ergonomic, comfortably balanced and easy to use, allowing the operator to perform high-quality welding. Equipped with a wide range of welding tips, the different tips allow for different functions such as welding tight interiors, welding different thicknesses of materials and cutting thin metals, with pure copper nozzles and an integrated gas protection system. Three functions in one, simply change the function head, you can easily switch between cleaning, welding and cutting functions

- Adopt an intelligent protection system, mobile terminal APP and PC monitoring, and real-time feedback of the working status.
- High threshold optical components, good welding and cutting effect
- Multiple safety locks, high safety performance
- Full body water-cooled design, more durable stability
- Long fiber optic cable, easy to operate, long service life, a wide range of options



Intelligent Singe Pendulum Handheld Welding Head	
Fiber optic interface	QBH
Wavelength range	1070±20 mm
Power rating	≤3000W
Collimated focal length	1.96" (50mm)
Focusing focal length	5.90" (150mm)
Focus adjustment range	-10~+10mm
Spot adjustment range	0~5mm
Auxiliary air pressure	≤1 Mpa
Weight	1.58lbs (0.72 kg)

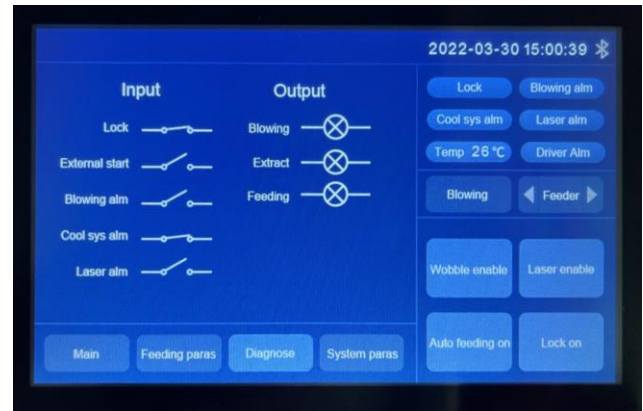
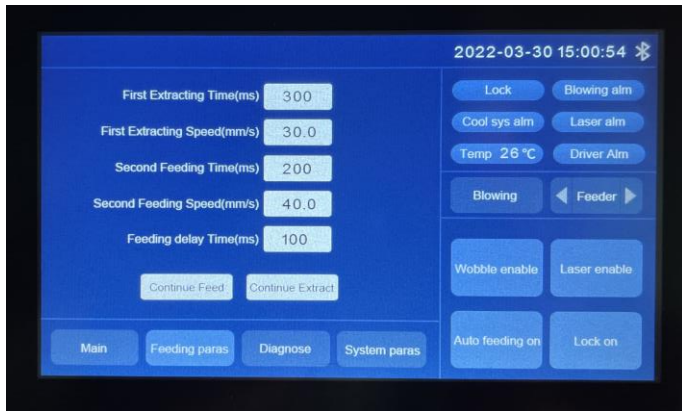


Control Panel And Control System

This system is an advanced intelligent welding machine system launched for the needs of multifunctional welding machines. It's stable and reliable, and easy to deploy and debug. What's more, it Keeps safe production, feature-rich and excellent performance.

It supports and provides modular, personalized, automated solutions, and also can quickly realize welding, cleaning and cutting in different situations, which is a more mature welding intelligent system in the market.

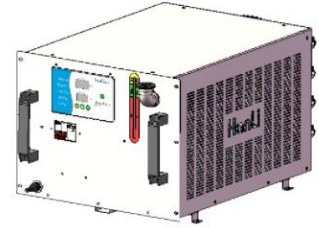
The operation panel of the handheld laser welding system adopts a 7-inch configurable TFT touch screen, with a neat interface and easy operation. Laser-related parameters can be set separately. The main interface can display the status of input and output IOs, alarm information, and motion status in real time.



Built-in Water Chiller

This kind of handheld welding laser chiller is a special built-in chiller developed specifically for the laser handheld welding market, the chiller and chassis integrated design, compact and flexible, perfectly compatible with major brands of cabinets, is a must for handheld laser welding machine, integrated design, so that the welding machine swing in addition to the bundle, adapt to more sites, better dust condensation effect.

- One-piece design, convenient maintenance and repair.
- A full range of environmentally friendly refrigerant systems, never worry-free export.
- One-button intelligent control system for easy operation, ISO9001 quality management system, fault code inquiry system.
- Stable and reliable performance, low failure rate, energy saving and power saving.



Built-in Water Chiller-1500W	
Working voltage	AC 220V, 50Hz
Machine power	2.1kW
Refrigerant	R410A
Tank capacity	12L
Working flow	≥8.8Gal/min (≥2 m ³ /h)
Disconnected flow	≤8.8Gal /min (≤2 m ³ /h)
Electrical power of the whole machine	1.6 kW /2.1 kW
Temperature environment	+32°F to+104°F (0°C to+40°C)
Humidity environment	0-80%

Auto Wire Feeder

This auto wire feeder is fully compatible with EF-Hybrid and can automatically feed the wire during welding, with rollers underneath for lightness and freedom of movement. At the same time, its built-in system is connected to the control system, so you can see its parameters on the control panel, and if there are any alarms, you can detect them and adjust in time.



- Double-drive wire feed with high thrust, more stable wire feed to meet the needs of long-time continuous welding
- Matching different diameter wire cores to meet different welding needs
- Automatic wire feeding changes the direction of the wire feeding wheel to different specifications, the wire can be freely selected from 0.8-1.6mm.

Auto Wire Feeder	
Voltage	220V
Wire weight	≤25 kg
Wire core diameter	Φ≤3 mm
Max. Wire feed speed	3.15"/s (80 mm/s)
Motor type	57 stepper servo
Reduction ratio	1:5
Dimension (LMH)	22.0"×9.4"×18.6"(560mm×240mm×472mm)
Weight	35.7lbs (16.2kg)

4. APPLICATION AND SAMPLE

Welding Process. Butt welding, fillet welding, stack welding, spot welding, nail welding, rolled edge welding, splicing welding, T-shaped welding etc.

Application Material. Stainless steel, aluminum, iron etc.



Application. EF-Hybrid is widely used in various metal mold wear surface welding, defective surface welding, and repairing cracks. It is also applied to metal sheet welding, crafts, tiny parts, jewelry and clocks, etc. The cleaning function EF-Hybrid has can remove metal surface dirt efficiently. This technology is widely applied in the field of high precision manufacturing such as automobiles, ships, airplanes, high speed railways, etc. It has brought significant improvement to people's quality of life, and has led the home appliance industry into the era of precision manufacturing.

5. WARRANTY

Mechanical, electronic components and Fiber Laser Source:

2 year against manufacturing defects. Parts and components damaged due to improper usage and operation of the equipment are not covered under warranty. The complete warranty shall be available once the customer has accepted and received the training program and the purchase agreements are signed by the customer.

6 months against manufacturing defects. Laser optical components, like focus lens are considered consumables and are therefore not covered during the warranty period.

In order to ensure the customer experience, the best performance of the equipment and the complete warranty policy of our company, we urge following the instructions on the Safety Notice in the Operation Manual and following the instructions of our technician on the installation of the laser machine. Failure to do so may render the warranty null and void.

6. INSTALLATION AND TRAINING

Technical support is offered via telephone, e-mail and other means. Instruction of installation will be written (emailed). A video with the installation of the Laser Machine is available. Until 8 hours of training (2 days of 4 hours) in the Installation Maintenance & Operation of the Laser Machine, as well as software included is available Free of charge in our premises in Los Angeles, California.

