

**MAX**  
PHOTONICS



# Handheld **Laser** Welding

[en.maxphotonics.com](http://en.maxphotonics.com)

# Easy to Learn, Easy to Weld, Excellent Performance!



| Product Model              |                   | X1w-1500       | MA1-65         | MA1-45         | MA1-35         |
|----------------------------|-------------------|----------------|----------------|----------------|----------------|
| Weld Thickness (mm)        | Stainless steel   | 5              | 6.5            | 4.5            | 3.5            |
|                            | Carbon steel/Iron | 4.5            | 6.5            | 4.5            | 3.5            |
|                            | Aluminum          | 4              | 5.5            | 4              | 3              |
|                            | Galvanized sheet  | 5              | 6.5            | 4.5            | 3.5            |
|                            | Brass             | 3              | 4.5            | 3.5            | 2.5            |
|                            | Copper            | --             | 3              | 1.5            | --             |
| Wobble (mm)                |                   | 0-4            | 0-4            | 0-4            | 0-6            |
| Operating Temperature (°C) |                   | 0~40           | 0~40           | 0~40           | 0~40           |
| Operating Temperature (°F) |                   | 0~104          | 0~104          | 0~104          | 0~104          |
| Weight (kg)                |                   | 39             | 39             | 38             | 25             |
| Weight (pounds)            |                   | 86             | 86             | 84             | 55             |
| Dimensions (mm*mm*mm)      |                   | 667*276*542    | 667*276*542    | 667*276*542    | 576*265*425    |
| Dimensions (in*in*in)      |                   | 26.3*10.9*21.3 | 26.3*10.9*21.3 | 26.3*10.9*21.3 | 22.7*10.4*16.7 |
| Volume (m³)                |                   | < 0.1          | < 0.1          | < 0.1          | 0.06           |
| Volume (cubic feet)        |                   | < 3.5          | < 3.5          | < 3.5          | 2.1            |

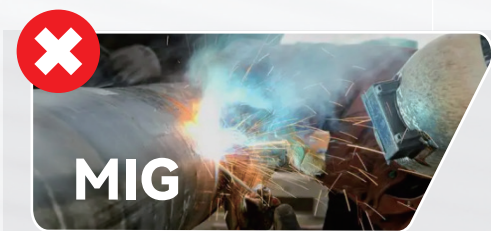
Maxphotonics' new generation of handheld laser welding are light weighted, small sized, portable, flexible to use, simple to operate and easy to learn. In stainless steel, carbon steel, aluminum, galvanized sheet, copper and other wider materials to achieve better quality and uniform welding effect, excellent welding performance, fast welding speed, high welding strength, and small heat affected zone. It will never produce the situation of deformation, edge biting and burn through, etc, no need subsequent grinding or polishing. Thus, the overall production efficiency is significantly improved, the consumable waste is reduced and cut the produce cost of each workpiece.



With 5 different copper nozzles

- **Smaller**
- **Lighter**
- **Truly Portable**

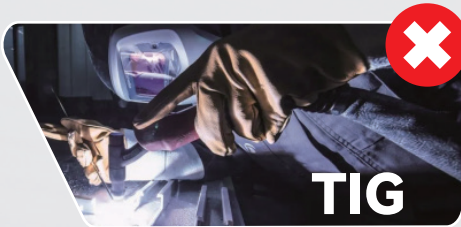
# Traditional Welding Way Farewell



**Large heat affected area.** The workpiece often causes deformation or insufficient binding force or internal stress damage after welding, creates a poor appearance. In addition, there is a certain difficulty in welding copper materials, and limited to different thickness metal.

**Harmful to human health.** The ultraviolet and infrared radiation is strong, the ozone produced from the welding proceed is high, it's great harm to the welder.

High technical requirements, poor working environment, low efficiency, not suitable for special metal and thin plate welding, consume a lot of welding wire, materials need to pre-clean and make groove joint before fully permeating thick metal. Vertical welding is extremely challenging due to the limited welding direction and operating angle.



## Handheld Laser Welding

Compared with traditional welding methods, Maxphotonic's new generation handheld laser welding can significantly improve the welding speed, it's easier to learn and operate. Meanwhile, it's high safety, energy saving and environmental friendly, even a novice can complete the welding task of different materials and different thickness with high quality. Maxphotonic's new generation handheld laser welding machine, with accurate laser control system, stable beam quality, can provides product series from 350~1500watts in different laser power range, easily achieve different welding depth from 1.5mm to 6mm, furthermore with minimum or no consumption of welding wire to complete perfect high strength interface.

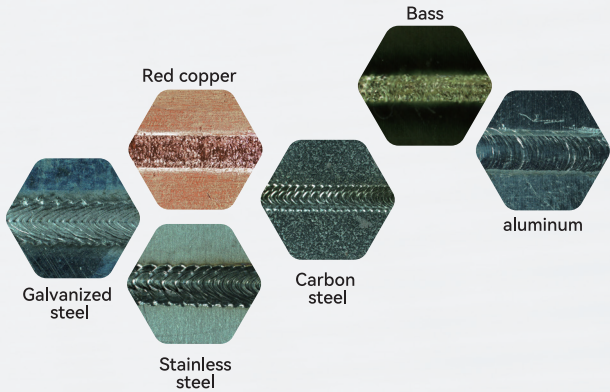
| Item                | Traditional Welding                                                      | MAX Handheld Laser Welding                               |
|---------------------|--------------------------------------------------------------------------|----------------------------------------------------------|
| Health harmful      | Occupational disease, physical damage                                    | Small indirect radiation                                 |
| Welding speed       | Slow and inefficient                                                     | Nearly 4 times faster than TIG                           |
| Heat affect zone    | Large                                                                    | Small                                                    |
| Deformation         | Highly deformable                                                        | Almost no deformation                                    |
| Welding quality     | Rough and irregular, need to be polished                                 | Perfect welding seam, deep molten pool and high strength |
| Weld damage         | With pores and easily to weld through                                    | Molten pool uniformity, good consistency                 |
| Welding materials   | Limited by consumable change                                             | Wide range of materials                                  |
| Learning difficulty | Professional welders are required, and the technical requirement is high | Novice can master it in short time                       |

## Six security protection, Maxphotonics worthy of your trust

Handheld laser belongs to laser class IV, to ensure operation safety, protective measures is needed.



## Support Wobble Welding, Optional in Wire Feeder



Laser control system support wobbly frequency and width control, can achieve up to **4.0mm(0.16")** weld width, weld at one time and high aesthetics, good consistency. Combine with wire feeder, help to improve to full fill the welding gap, make up the cutting defects from last process, normally **support welding wire diameter 1.0/1.2/1.6mm**, suitable for carbon steel, stainless steel, aluminum, non-ferrous metal and alloy.

# ■ Maxphotonics Handheld Laser Welding Machine Features

## Stable Performance and Reliable Quality

Maxphotonics' new generation handheld laser welding machine is designed and manufactured by the world's top laser technology. The laser control system is accurate and the beam quality is stable. Before ex-factory, each handheld laser welding machine has passed 500hours high and low temperature (**-10°C~45°C or -14°F~113°F**) cycle power test, and 12-hour continuous welding with 99% power stability test. The life of Laser power is nearly 100,000 hours, all the machines have passed the industry test standard by SGS, to ensure stable and durable.

## Compact Handheld Welding Torch

With collimate QCS interface, greatly reduce the volume and weight of welding torch, torch weight only **680g(1.5pounds)**. Optical design and QCS output head match perfectly, high transmission efficiency, calorific value is low. The welding torch design match to ergonomics, comfortable to hold and easy to operate. In addition, the welding torch has a built-in wobble function, with a double safety light release button it can allows the operator to safely perform throughout the all day in high welding quality.



Welding torch with wire feeder



Handheld welding torch

680g



## Portable Appearance

Maxphotonics' new generation handheld laser welding product series adheres to lightweight design and provides portable user experience. According to different welding performance, **25kg~39kg(55~86pounds)** products can be selected. The product volume is **less than 0.1m³ (3.5 cubic feet)**, which can be easily handled and carried, and is suitable for various mobile welding scenarios.

## Simple Operating System, Intelligent Processing Mode

Maxphotonics' new generation handheld laser welding machine, with 7" industrial LED touch screen, intelligent operating system, support simple operation mode, easy to learn, simple and quick operation. For the novice, only 30 minutes training can master the welding operation, thus saving training and production costs. 32 sets of preset process parameters support user customization, users can quickly select welding parameters based on different materials and thicknesses, novice welders can also be as high quality and high consistency welds as experienced welders.

## Easy Installation and Operation



1.220V power supply



2.Gas: Argon/nitrogen



3.Grounding clamp - safety loop



The product chassis interface is clearly marked, and equipped with product installation and user guide videos, which is convenient for beginners to use quickly. Only need to plug in the 220V AC power line, connect the industrial protection gas (argon/nitrogen), and clamp the group clamp to the workpiece, then start using the equipment. Through the 7" touch panel to access the operation interface, you can select preset parameters, and also support user-defined parameter adjustment and storage.

## Lightweight, Portable and High-performance

Traditional welding method is difficult to learn, complex operation, low efficiency, welding quality depends on the welder's experience and technology. The new generation of Maxphotonics handheld laser welding machine with high welding efficiency, simple and convenient operation, easy to learn, anybody can achieve consistent high-quality welding results in different materials and thickness ranges.

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