

■ Laser Handy Welder



ML-2450AH / 2550AH

Handy torch type is easy to use
with a lightweight!

Anyone can make the laser
welding of high quality easily!

Two models which can be chosen according to
the application.

It is the most suitable for precision sheet metal
welding iron-based, the SUS system work.








Features

ML-2450AH/2550AH welders consist of our YAG laser delivering field-proven high performance and a handy torch, allowing users to laser weld manually. They do not require an output unit or the hassle of robot teaching with an XY table, etc. Since the laser light of ML-2450AH/2550AH welders is aimed in whatever direction the user moves their hand, they are ideal for tack welding and correction welding small quantities of various sheet-metal and trial products. Their maximum outputs are 150 W and 400 W. Select the model that meets your needs according to plate thickness. Their high peak power makes it possible to achieve high-speed deep penetration. ML-2450AH/2550AH welders perform stable welding under ideal welding conditions thanks to our unique power feedback control. Welds made with ML-2450AH/2550AH welders have little distortion even in thin-plate welding and have neat welding beads, thereby eliminating the need for after processes, contributing to production efficiency.

Features

- High-quality manual laser welding with a handy torch!
- Welds have few heat-affected areas (distortion and burns) by making effective use of the characteristics of lasers, eliminating the need for after processes.
- Forms neat welding beads by high-speed repeat control.
- Welds plates with a thickness of up to 2 mm (for stainless-steel plates). (Please contact us if welding of thicker plates is required.)
- Dual safety feature: the presence of a work piece is detected and the laser is automatically turned off when the torch is moved away from the work piece while welding.
- Improves weld quality thanks to the reduced air sucking that occurs during welding, by the shield-gas jetting feature of the easy-to-use, fully air-cooled torch (ML-2450AH).
- Has the lightest torch design with the thinnest grip (Φ26) in the industry.
- Improves productivity by simultaneously welding multiple points with up to 4 to 6 time sharing deliveries.* (* each welder is equipped with one torch unit.)

Standard Features

Real-time power feedback 
Variable mirrors 
Waveform control 
Power monitor 
Controller 
External communications 
Fade-in/ Fade-out 

* When the optional isolator is mounted, the laser power output from the fiber decreases by up to 10%.

Handy torch

The thinnest and lightest handy torch in the industry



Outstanding usability! The thinnest part of the torch is 26 mm in diameter, and its mass is 260 g (the mass of the torch for the ML-2550AH is 360 g).

Example usage



Example of fillet welding with a handy laser.

Manual welding with a handy laser has the following advantages.

- Weld in narrow places and on curved surfaces as the laser can be moved in any direction with any orientation.
- A finish without conspicuous welding beads is also possible by repeated sweeps.

- Produces little distortion as work pieces are almost completely unaffected by heat, and depending on the thickness of the work piece, some workpieces can be touched immediately after welding.
- Directly welds base metals together, leading to weight saving of workpieces, thereby supporting environment-friendly production.

Two laser welding power supply models are available to suit the application.



ML-2450A (150W)

ML-2550A (400W)

The 150-W power supply for a penetration depth of less than 1 mm and the 400-W power supply for sheet metal with a plate thickness of more than 1 mm.

Performs stable welding by reliably generating laser power in accordance with the preset waveform with the aid of the power feedback control function.

Can also be used in automatic processes.



The lightweight handy torch is also suitable for use with an articulated robot.

Welding is more stable with regular welding beads thanks to the dedicated start-stop signal interface.

Visit us for the demonstration!

We always accept requests for sample test at our laboratory. For more information, please contact us.

Applications

Tack welding, correction welding, and build-up welding on iron-based and stainless-steel-based thin sheet metal; trial manufacturing; production of small quantities of various thin sheet-metal products; electronic parts; electrical equipment

Specifications

Model		ML-2450AH	ML-2550AH
Oscillation wavelength		1,064nm	
Maximum average power		150W	400W
Maximum output energy		70J/P	80J/P
Maximum peak power		7kW	8kW
Pulse repetition		1~200pps	1~500pps
No. of programmable schedules		32 (Can be saved to memory)	
Optical fiber		SI type Φ0.4	SI type Φ0.6
Fiber optic delivery		Optical fiber delivery system with up to 6 deliveries. *1	Optical fiber delivery system with up to 4 deliveries. *1
Power supply		3-phase 200V/220V/240V/380V/400V AC ±10% 50/60Hz	
Heat exchange metho		Water - Water	
Dimensions	Oscillator machine	495(W) X 995(D) X 990(H)mm	530(W) X 1347(D) X 1170(H)mm
	Control Box	75(W) X 320(D) X 320(H)mm	
	Hand held torch	218(W) X 32(D) X 43.5(H)mm	218(W) X 37(D) X 48.5(H)mm

Weight	Oscillator machine	230kg	400kg
	Hand held torch	230g	360g

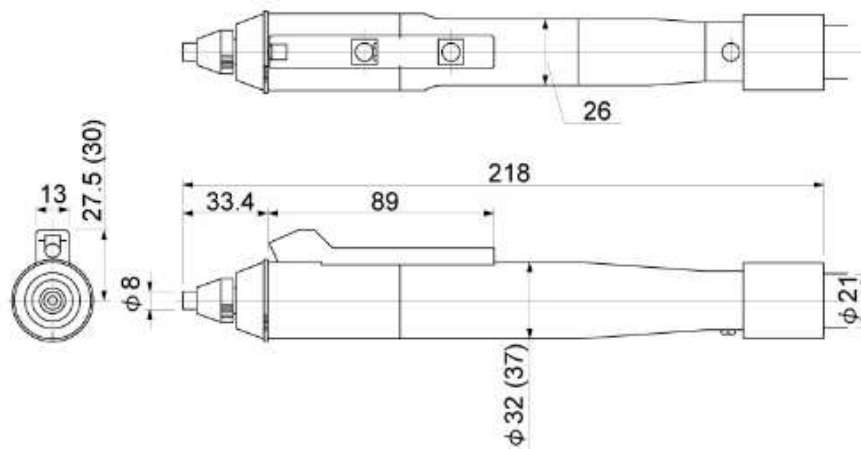
*1: Each oscillator is equipped with one hand unit (additional output units can be used to share deliveries other than those that use the hand unit).

*Specifications subject to change without notice.

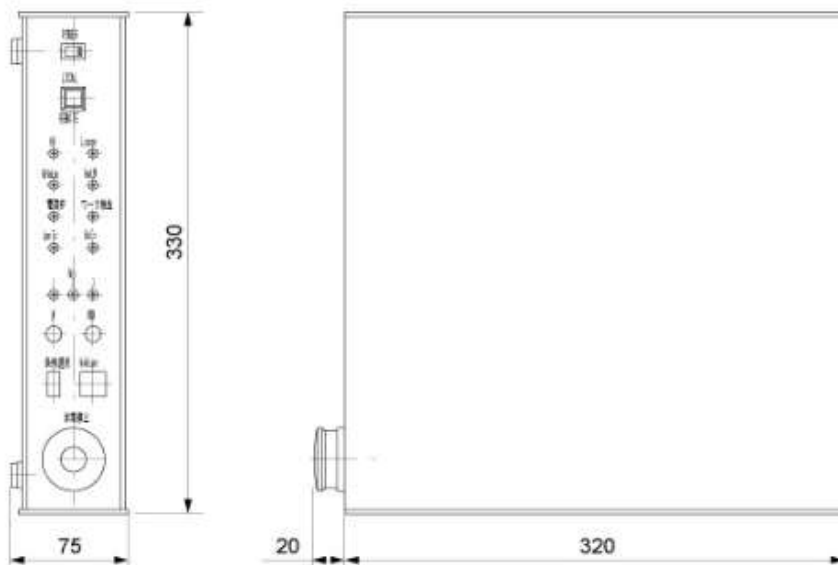
External View

Handy torch

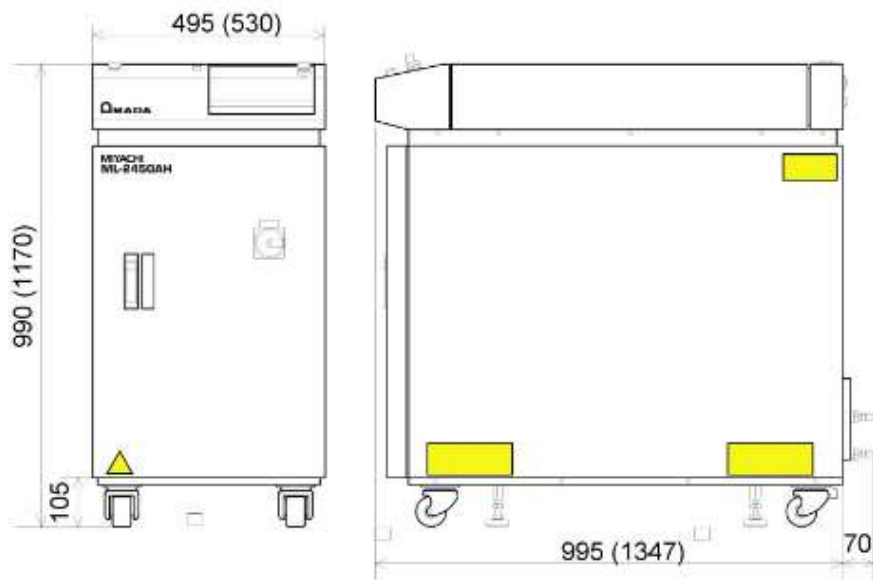
* Unit (mm)



Control box

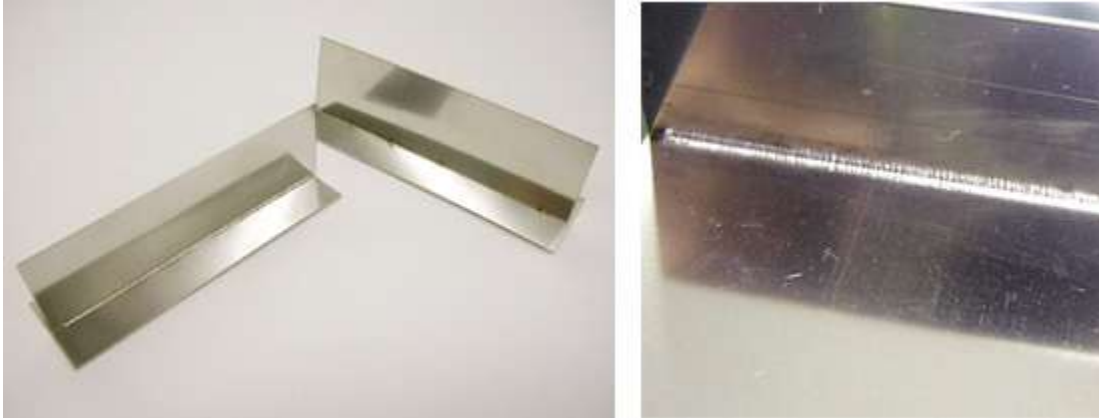


Laser oscillator



Sample

Fillet welding



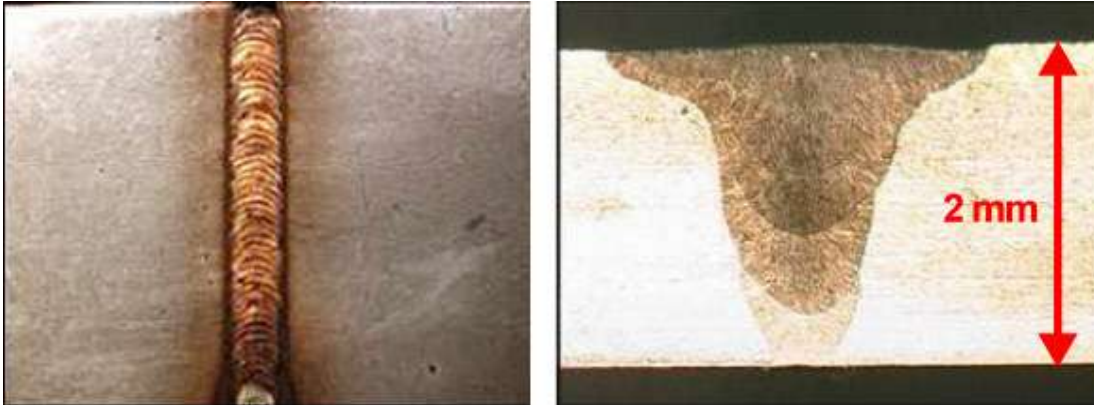
Fillet welding on 0.6-mm and 1.0-mm stainless-steel materials Forms neat welding beads with sufficient strength, thereby eliminating the need for after processing.

Welding on box-type workpieces



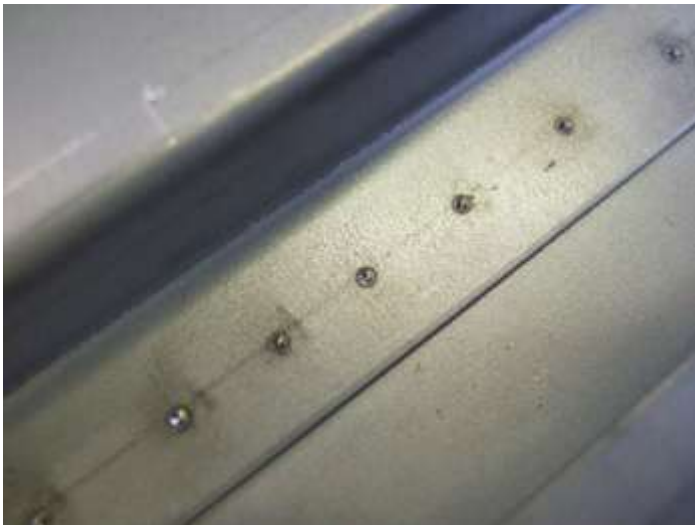
Angle welding on box-type 0.6-mm stainless-steel workpieces Achieves bonding with little distortion.

Cross section of penetration portion



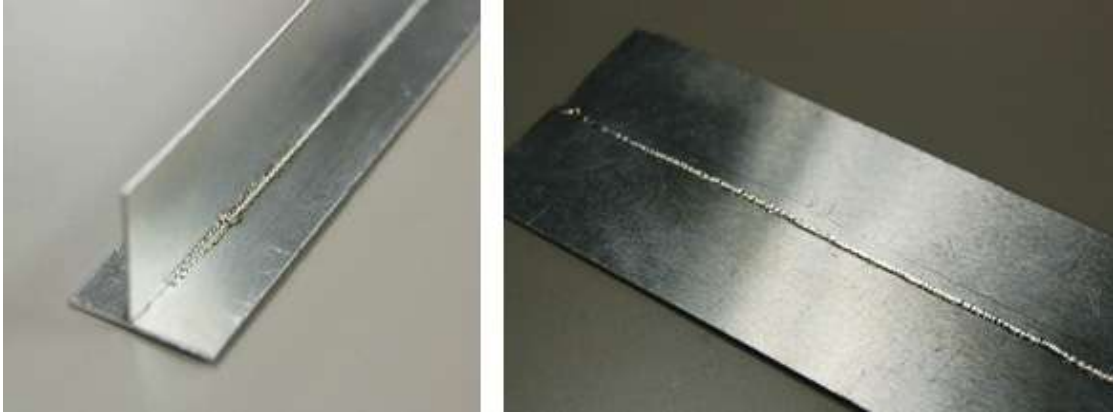
Cross section of 1.0-mm stainless-steel materials bonded by lap welding with the ML-2550AH Lap welding achieves deep penetration across each material as thick as 2 mm.

Example of spot welding



Example of lap spot welding on iron-based material

Example of welding aluminum materials



Examples of 0.5-mm fillet and butt welding