

Ultra-precision YAG Laser Mold Padding Welder

SANWA

WELD PRO

SW-FL50

*Ultra-High-Precision! High Quality! Operability!
All are new dimensional!*

Optical Fiber YAG Laser Welder



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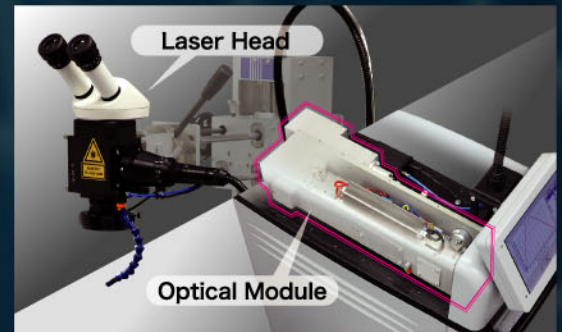
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SW-FL50

Stable Optical Axis!

Separate Optical Module Type of Laser Head

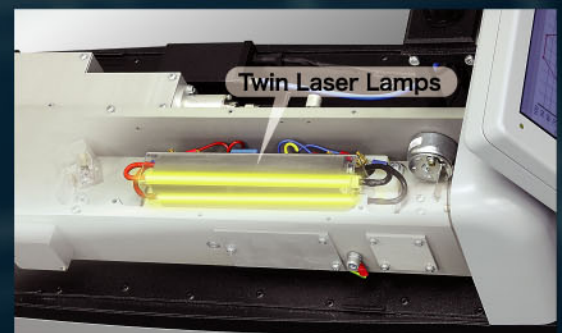
Unlike a conventional YAG laser welder, the optical module and laser head (laser radiating unit) in the SW-FL50 are separate components. An optical fiber cable that conducts energy efficiently connects the two components. Since the optical module is installed in the stable main unit cabinet, the module is protected from impacts and vibrations, while the laser head moves freely, thereby almost perfectly preventing deviation of the optical axis. Furthermore, separation of the components allows miniaturization and weight saving of the laser head resulting in a flexible system layout.



High Power & Less Electricity!

Twin Laser Lamps

Twin laser lamps with a total of 50 W have been adopted. High power in the 120 W class has been materialized with minimal consumption of electricity. A laser welding machine in the 120 W class consumes approximately 45-50 A, whereas SW-FL50 can deal with welding materials of ϕ 0.2-0.6 mm with less electricity. In addition, the load on each laser lamp has been eased, realizing high product durability. Thus, the product can be used economically and inexpensively.



Layout-Free!

Micro-Component

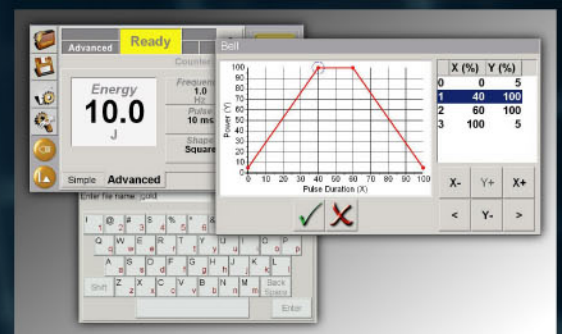
The main unit cabinet of the SW-FL50 efficiently accommodates the optical module, power supply unit, and cooling unit, which allows the easy relocation and free location of the system within the factory. Because the optical module is protected in a strong aluminum box, and it is supported by the damper, it is a structure that the impact when moving and the influence of the vibration are not received easily. Welding can be done where required without moving heavy, sizable molds.



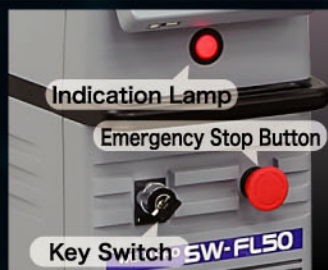
Making up pulse waves is possible!

Color LCD Touch Panel

A 7-inch color LCD touch panel has been employed. All settings are easy and intuitive to adjust and operate for the power, pulse, and frequency necessary for precision welding. The memory feature in the product makes it easy to select frequently used settings or other settings appropriate for each welding location or material. Furthermore, it is possible to finely adjust the various laser controls materialized by the twin laser lamps while confirming the visibly displayed pulse waveforms. The product can freely handle a variety of different materials and welding locations.



Enhanced Safety Features



Indication Lamp & Safety Switches

When laser emission is ready, the indication lamp lights to notify the operator that the machine is operating. The key switch is used to turn the machine on/off, which prevents abuse by people other than the operators and contributes to safety control. In addition, the emergency stop button is located in an easily accessible position, which is helpful in preventing accidents. The protective filter of the laser prevents the reflected laser beam from intruding into the microscope, the LCD shutter prevents exposure during work, and the mechanical safety shutter blocks the emitted laser except when working—all components are mounted. The increase and enhancing the safety mechanism are also possible because it equips with the terminal of interlock.

Basic Equipments



Indication Beam



LED Ring Light

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*It is possible to work flexibly on mold repair of various sizes
with different kinds of jigs and tables!!*



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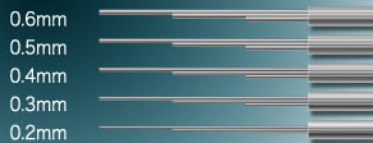
Configuration (Include option)



- ① Toolbox
- ② Foot switch for laser emission
- ③ Tinman's shears
- ④ Protective goggles against YAG laser
- ⑤ Welding Materials
- ⑥ Gas pressure gauge
- ⑦ Coolant (purified water)

Wire rod for laser welding machine

This is a straight-rod welding material suitable for laser welding machines. The rod, which is not wound around a reel, can be used as a straight rod. It is convenient for micro welding.



Broad Application Range

- Aluminum mold ● Plastic mold ● Die casting mold
- Glass mold ● Press mold ● Rubber mold ● Copper alloy mold

Diverse Purposes

- Parting line part, slide edge areas where shocks are applied
- Pin-gate areas, tunnel-gate areas
- Repair of ejector-holes, thin edge areas
- Smoothing pinholes and surface depressions after welding
- Padding after electric discharge machining, nitriding, and tufftride processing

Specifications

Laser beam	Nd : YAG		
Laser wavelength	1,064 μm	Pulse duration	0.5~40ms
Average power	55W	Pulse frequency	0~10Hz
Max. Energy Value	30 J/20 ms	Beam focal spot size	φ0.45~1.125mm
Cooling Method	Water-cooling/air-cooling integrated type		
LCD Screen	7-inch touch panel system		
Power	220~240 V (10A 50/60Hz)		
Power Consumption	1,500 W max		
Dimensions	660 (D) x 235 (W) x 650 (H) mm		
Weight:	43kg		

● The specifications and the external shape may change without advance notice due to revisions and enhancement of the product.

Safety Remarks

The operation, maintenance, and inspection of this product must only be conducted by a specialist thoroughly familiar with the product.

Welding materials

	Shape/ Length	● – Straight rod / 250mm x 20 (5m) ▲ – Reeled / 5m					Hardness after welding HRC
		Thickness	φ0.6	φ0.5	φ0.4	φ0.3	
Plastic mold	NAK-80	●	●	●	●	●	40~42
	STAVAX	●	●	●	●	●	52~55
Die cast mold	MAS-1	●	●	●	●	●	28~30
	QRO-90	▲		▲	▲	▲	50~53
Press mold	SKH-51	▲		▲	▲	▲	60~62
	SKD-11	▲		▲	▲	▲	55~57

※ These items may partially change depending on the contents of the customer's work.

Optional materials

Plastic mold	NAK-80	●	●	●	●	●	40~42
	NAK-55	●	●	●	●	●	40~42
	HPM-50	●	●	●	●	●	40~42
	HPM-38	●	●	●	●	●	52~55
	HPM-2	▲		▲	▲	▲	28~31
	STAVAX	●	●	●	●	●	52~55
	RIGOR	▲		▲	▲	▲	52~55
	IMPAX	▲		▲	▲	▲	30~33
Die cast mold	NICKEL	▲		▲	▲	▲	15~20
	S50C	▲		▲	▲	▲	28~32
	SKD-61	▲		▲	▲	▲	40~42
	ORVAR	▲		▲	▲	▲	40~42
	QRO-90	▲		▲	▲	▲	50~53
Press mold	MAS-1	●	●	●	●	●	28~30
	SKD-11	▲		▲	▲	▲	55~57
Others	SKH-51	▲		▲	▲	▲	60~62
	For nitriding	▲		▲	▲	▲	18~20
	For copper alloy	▲		▲			

Manufacturer
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