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Pulsed Laser Spot Welding Machine

WS series laser spot welding machines are used for perforation and spot welding of sand hole for gold and silver jewelleries. Laser spot welding is an important application of laser materials processing technology. Spot welding is thermal conduction, namely, the laser radiates the surface of the part, and the heat on the surface expands inside through heat conduction. By controlling parameters such as laser pulse width, energy, peak value and repeating frequency, the part will melt, and thus forming specific molten pools. Due to its unique benefit, the product has been successfully applied to gold and silver jewelleries processing, and welding of small-sized parts.

Characteristics

- Energy, pulse width, frequency and focus can be adjusted within a wide range to achieve different welding effects.
- Ceramic reflector used in the laser pump chamber is imported, which is corrosion resistant, high temperature resistant, high electrical/optical conversion.
- World-leading automatic light shielding system is employed to remove harmful lighting on eyes during operation.
- 24-hour continuous operation, with stable operating performance, and free of maintenance within 10000 hours.
- Personalized design in compliance with ergonomics principles.

Advantages

Fast, efficient, deep, little distortion, little affect area, quality welding, welding points free from pollution, and energy saving.

Model	WS100	WS150	WS200
Max. average power	100	150W	200W
Laser wavelength	1064nm	1064nm	1064nm
Focused beam diameter	0.1～3.0mm	0.1～3.0mm	0.1～3.0mm
Pulse repetition rate	0.5-40Hz	0.5-40Hz	0.5-40Hz
Pulse duration	0.5~20ms	0.5~20ms	0.5~20ms
No. of assistant gas channel	1	1	1
Input electricity	220Vsingle phase50Hz/30A	220Vsingle phase50Hz/40A	220Vsingle phase50Hz/60A
Dimensions (LxWxH)	1000X480X1080mm	1000X480X1080mm	1000X480X1080mm
Dimensions (LxWxH)	400X350X880mm	400X350X880mm	400X350X880mm

ST-WY180-MK Multi-purpose Laser Welder

The multi-purpose laser welding system (also called as laser mould welder, mould repair) is specially designed for the mould industry and used in repairing of precision moulds, such as mould manufacture for digital products, mobile phone, toy, automobile and motorcycle, and moulding industry. Through the repairing of moulds, it is possible to reuse the moulds, save the production cost and improve the working efficiency significantly. This technology can also be used to modify the design or size of moulds to reduce the development period.

Features

The working principle of this laser deposition welding system is to use laser high thermal energy and the melting technology in spot to process the welding and repairing of minute parts. It makes up the shortage of traditional hydrogen arc welding in repairing precision surfaces, avoids the two difficulties of thermal strain and after-treatment, and saves the production period of mould.

Advantages

It is specially designed for the mould industry and the technology is imported from Germany. With unique structure design, it is suitable for repairing of large, medium and small moulds.

1. Ceramic converging cavity is imported from the Britain. It is corrosion resistant and high temperature resistant, and has 8-10 years service life. The life of xenon lamp is more than 8 million times.
2. Use the most advanced light shielding system to eliminate the irritation to eyes by light during working.
3. The laser head and optics part can be rotated for 360°, upward/downward lifting and forward/backward pushing, suitable for repairing of large, medium and small moulds.
4. The parameters are controlled by intelligent remote controller, which is simple and convenient.
5. The work bench can be lifted, and moved in three dimensions.
6. The size of light spot can be adjusted.

Suitable materials

The materials that can be welded are extensive: cold work alloy steel, hot work alloy steel, nickel tool steel, high grade steel, steel alloy, high tenacity aluminum alloy, etc.

Technical parameters

Model	ST-WY180-MK
3-axis stroke of work bench	X=300mm, Y=200mm (X, Y can be adjusted manually and Z-axis can be manually motorized to lift maximum 250mm.)
Bearing of work bench	≤200kg
Device weight	300kg
Power supply	220V±10%/50Hz or 380V±10%/50Hz
Laser parameters	Laser parameters
Laser type	Nd:YAG pulse
Adjusting range of light spot	0.1-0.3mm
Size of light spot	0.2-3.0mm
Laser wavelength	1064nm
Pulse width	≤20ms
Maximum laser power	180W
Pulse frequency	≤50Hz
Laser output focus length	50mm/100mm/120mm (optional)
Laser cooling	Water cooling
Observing system	Microscope (360° adjustable)
Protection gas	One line (xenon)
Welding wire diameter	0.1mm-0.8mm

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