Economical Production with Top Quality

Plastic Welding with LPKF PowerWeld 2000 Systems

LPKF
Laser & Electronics

Precise welds for
microfluidic components

Growing with the Responsibilities ...

Laser plastic welding excels at creating highly precise weld seams following any contours, without harming the surrounding material. This technology is establishing itself in more and more areas of application: from automotive and medical technology, to electronics and consumer goods. The systems in the LPKF PowerWeld 2000 product line – represented by the PowerWeld 2000 and the PowerWeld 2600 – can be used universally thanks to the flexible laser technology.

Built-in Productivity

The LPKF PowerWeld 2000 has a range of systems to satisfy different customer specifications. Whilst the PowerWeld 2000 is specially designed for manual placement, the PowerWeld 2600 boasts a rotary table to reduce downtimes. Optimal workpiece quality and productivity are ensured by the reliable and proven system architecture, combined with efficient, high-performance controls and process monitoring. Both systems can be equipped with different types of laser sources.

More than just Systems

LPKF boasts a great deal of experience in laser welding. A specialized Application Center assists interested clients with their product layouts, process designs, and with job-shop production during production peaks for instance.

Clients benefit from an enormous amount of expertise – integrated within efficient, high-performance software specially developed for plastic welding.

- Productive, economical and flexible
- Secure welding results
- Integrated quality control

Possible Applications

Rugged RFID transponder with integrated sensor system

Valve unit for car-making applications

Secure joining of consumer products

Safety for Product and Production

The LPKF PowerWeld 2000 laser systems satisfy a range of different criteria for plastic welding. High-quality components within a compact housing maximize machine availability, whilst integrated online process monitoring assure product quality. The systems require no additional cooling, are CE safety certified, and use Class IV safety components.

The systems are operated intuitively via a touch-panel. Siemens PLC components ensure problem-free series operation. The ProSeT software comes as standard for the rapid setup of welding contours, and a pilot laser visualizes the weld contours.

Process Optimization and Tool Production

More than just machines: The LPKF Application Center provides assistance for process layouts and tool production – to shorten time-to-market, and optimize production throughput. LPKF supplies welding systems upon request with pre-set processes, or jointly optimizes them on site for perfect integration in the production setup.

Optimized Throughputs

A specially developed clamping module ensures reproducible welding positions, and the ergonomic loading and unloading of the subassemblies. The LPKF PowerWeld 2600 has a rotary table to reduce downtimes: fill one tray, weld one tray: whilst components are positioned outside of the welding cabinet, production continues inside the machine.

Monitored Quality

Even the basic model is equipped with the means to communicate with an MES. A melt-travel monitoring system verifies successful welding on the basis of a time-travel diagram. In addition, the transmission properties of the upper joining partner can be tested by the LPKF TMG 3 transmission tester.

Greater Productivity and Speed

24/7 in an industrial environment – no problem for LPKF's tried and tested laser welding technology. Well trained service staff are available around the world for commissioning and customer care services, not to mention an Application Center to help prepare feasibility studies and machine concepts, job-shop production to tackle production peaks, or ramp up of batch production. More than just laser welding. LPKF creates solutions – together with its clients.

Technical Data: LPKF PowerWeld 2000 / 2600

Laser class	1
Laser beam source / laser power	120 W, 250 W
Laser wavelength	980 nm
Processing field	150 mm x 110 mm (5.3" x 4.3")
Power supply	400 V – 3 phases/N/PE, 16 A, max. 3 kW
Air supply	Min. 4.5 bar, max. 10 bar
Ambient conditions	Max. operating temperature: up to 35 °C (95 °F) Max. humidity: up to 80% at 25 °C (77 °F)
Cooling system	At 120 W external water cooler, at 250 W internal air cooler
Configuration	Remote maintenance Automatic clamping tension control unit Process data capture and analysis (collapse distance) Coding (tool coding) Traceability data via fieldbus interface Optional: Data acquisition computer including additional software ProSeT
Main dimensions (W x H x D)	840 mm x 2200 mm x 1000 mm (33" x 87" x 39"); at PowerWeld 2600: 840 mm x 2200 mm x 1300 mm (33" x 87" x 51")
Weight	500 kg (1102 pounds)

LPKF Laser & Electronics

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Photos may also show optional accessories.

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