Reliable joining of plastic components using laser technology

Strong and reliable from micro to maxi

Laser technology has acquired an excellent reputation for joining plastic components. It efficiently creates plastic joints that are second to none in terms of quality and cost-effectiveness. At the K trade fair, which will take place on October 16–23, 2019, in Düsseldorf, LPKF will present in hall 11, booth E04, the possibilities offered by laser plastic welding for a wide range of applications.

With LPKF machines, both very small and large components can be joined safely and reliably – with weld seams that are only a few tenths of a millimeter wide for small parts and significantly wider for larger parts. This will be demonstrated using application examples ranging from medical technology to automotive and consumer applications. A special eye-catcher will be a truly luminous application example: ultraflat lighting modules that transform glass mosaics into fascinating lighting experiences. Here, laser welding ensures tight connections between the plastic components protecting the sensitive electronics.

Another application – a medical wound cleansing device – proves that thanks to laser plastic welding, even demanding joining tasks with special requirements for weld seam hygiene, tightness, purity, and thickness can be fulfilled.

Fig.: Joining automotive taillights with the LPKF PowerWeld 3D 8000 laser system

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07.11.2019 – PI_1926_WQ_K-Messe
LPKF will present a new machine at the K trade fair: The powerful LPKF InlineWeld 2000 laser system enables round or nonrotatable workpieces to be joined and enables a wide range of applications to be implemented without great effort. The machine is extremely compact and features low investment and maintenance costs.

The technology company will also present the universally applicable, standardized LPKF InlineWeld 6600 laser system. This system is used in particular when efficiency and minimization of costs are priorities, but quality must be ensured at all times. The LPKF PowerWeld 3D 8000 laser system is available for large, three-dimensional components such as automotive taillights.

All laser systems combine established process technology with integrated quality assurance and extensive interface options. The sophisticated LPKF software takes over the CAD data, calculates the optimum welding contours, and transfers the information directly to the machine controller. This makes setup of the respective machine very quick and easy.

Thanks to the LPKF machine calibration, the user can achieve identical quality at the touch of a button. With a single data set, calibrated machines deliver reliable, repeatable results worldwide at any time. This eliminates the need for multiple manual machine adjustments!

The technology company LPKF has many years of experience in laser plastic welding. The products are used worldwide for a wide variety of applications. The right models are available for all production environments: standalone systems as well as inline systems for continuous production lines.

About LPKF
LPKF Laser & Electronics AG manufactures machines and laser systems used in electronics fabrication, medical technology, the automotive sector, and the production of solar cells. Around 20 percent of the workforce is engaged in research and development.