

Laser Polymer Welding with Unlimited Applications

Industrial laser systems | Application development



Beam Shaping Excellence

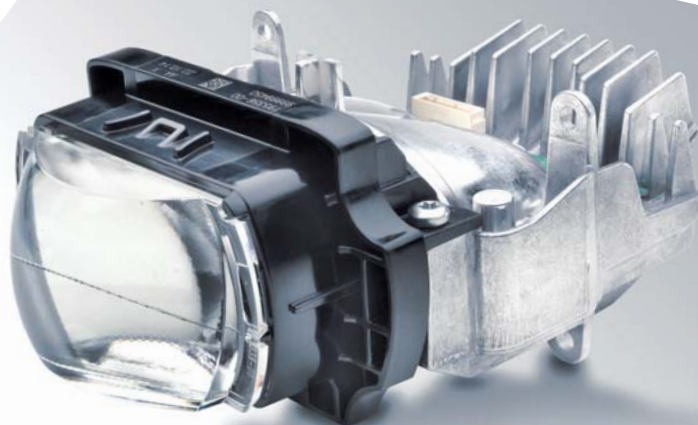
Countless applications. One solution. Plastic welding with LIMO laser technology

From automotive manufacturing to medical technology, plastics have become an essential part of industrial production. As the demands placed on this material grow, so do the requirements for the related production and processing technologies. LIMO delivers the capability of using micro-optics to distribute laser beams in circular form as well as in linear, rectangular and other custom geometries – for better and faster production processes.

The result is an entirely new way to process and enhance the properties of a wide range of different fiber-reinforced plastic components, for example. Specifically in the area of welding applications such as transmission welding, where flexible weld seams are created, LIMO delivers individual customer laser technology and extensive process know-how – the foundation of LIMO's success in tackling a wide range of application challenges together with its customers, for example from the automotive and medical industry.

Application areas

- Automotive components, incl. lightweight design
- Medical components (meeting FDA requirements)
- Foil welding with small process windows
(e.g., packaging industry, consumer electronics)
- Flexible weld seams with different geometries
(circle, rectangle, ring, line, etc.)
- Hermetically sealed welding (gas- and liquid-tight)



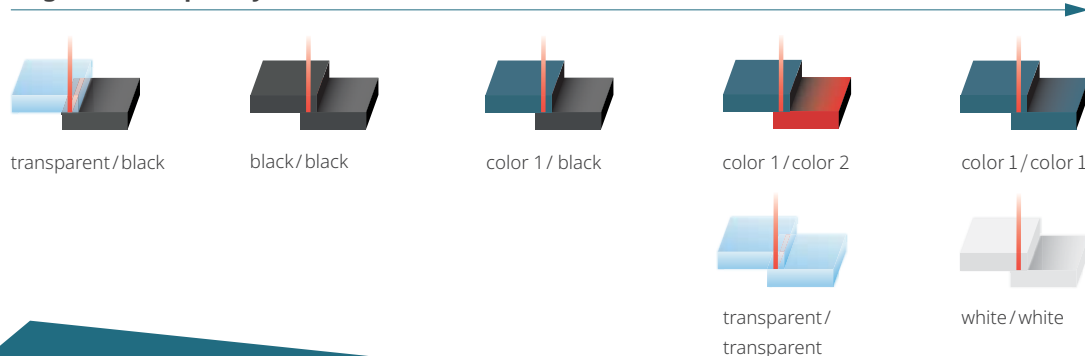


Solutions for different welding processes, with high-precision and quick turnaround

In plastic welding technology, the focus is on achieving an economical welding process. Here, LIMO provides the right optics and laser systems while also supporting the entire process: from creating a concept and defining the optimal economical laser process to designing and building the welding station, including its integration into the existing production line.

Whether it's contour welding, mask welding, simultaneous welding or quasi-simultaneous welding, all of our beam shaping solutions deliver superior precision and process stability thanks to the use of industrial process controls (e.g., pyrometric temperature measurement). This means that LIMO laser technology can be used for high-quality non-contact welds involving various plastic-based materials such as ABS, PMMA, PA, PC, POM, PP, for example. For cost-efficient welding processes with superior precision.

Degree of complexity



Your benefits with LIMO

- High productivity with consistent quality
- Process heads with integrated quality control (pyrometric temperature measurement)
- Welding of complex components (3D shapes)
- Flexible combinations of transparent and color materials
- Outstanding energy efficiency thanks to simultaneous welding



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