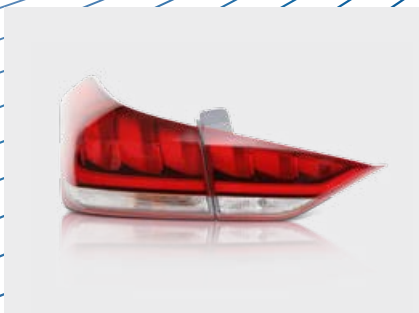
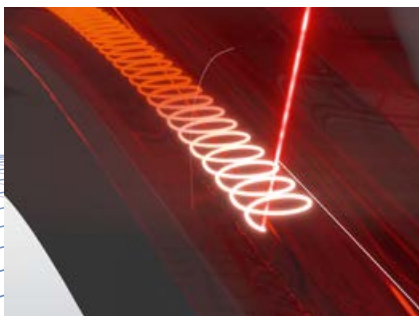


# Welding Large 3D Components with Quality Control

## The New LPKF PowerWeld3D 8000

- Laser plastic welding with variable weld seam widths
- Integrated melt travel monitoring
- Tolerance compensation
- High performance, short cycle times



# Laser Plastic Welding in a New Dimension

The LPKF PowerWeld3D 8000 is a high-performance welding system for large 3D components up to 1000 mm x 750 mm using an innovative technology. Especially remarkable is the flexibility in the Z direction: This welding system can handle height differences of up to 400 mm, as well as controlling the welding process with an integrated melt travel monitoring system.

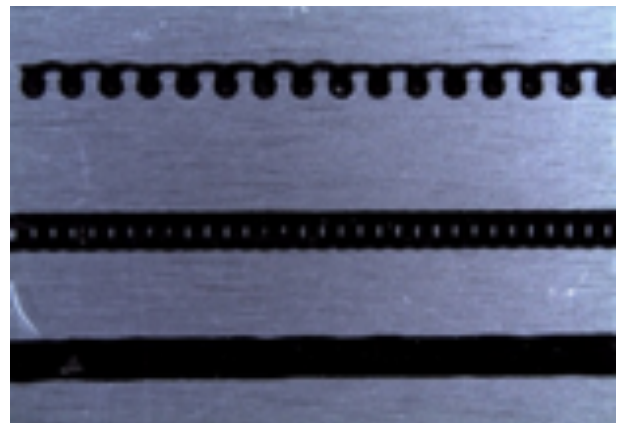
The LPKF PowerWeld3D 8000 is designed for the series production of large plastic components, which for example are increasingly used in the automotive sector: A, B and C pillars, fenders, sun roofs, and especially, tail lights.

A unique feature of this system is the wobble welding: In this quasi-simultaneous method, additional amplitudes are superimposed onto the laser beam orthogonal to the feed direction. This allows easy adjustment of the width of the weld seam between 1 mm and 5 mm – which have a particularly homogeneous temperature distribution. This leads to a very short cycle time, and a robust process. Eight independent servo drives for clamping can compensate for local tolerances during welding. The system is capable of welding large components with maximum dimensions of 1000 mm x 750 mm x 400 mm (X/Y/Z), and the quality is safeguarded by melt travel monitoring.

The LPKF PowerWeld3D 8000 is controlled by a Soft PLC. This enhances flexibility and simplifies system connection to the client's own MES. The PowerWeld3D

8000 is supplied with the intuitively operated WeldPro system software, and LPKF ProSeT 3D for fast project set up. Both programs automatically control the wobble function, and determine uniform energy inputs, even when the height of the weld parts changes.

The experts at the LPKF Application Center in Fürth, Germany, engage potential customers by offering to process custom samples.



The variable wobble contour produces a homogeneous weld seam

## LPKF PowerWeld3D 8000

|   |                                 |
|---|---------------------------------|
| <b>Laser class</b>                            | 1                               |
| <b>Laser parameters</b>                       | Power: 400 W; spot: 1 mm – 5 mm |
| <b>Clamping pressure range</b>                | Up to 20 kN                     |
| <b>Max. working area (W x D x H)</b>          | 1000 mm x 750 mm x 400 mm       |
| <b>Welding machine dimensions (W x D x H)</b> | 1800 mm x 1700 mm x 3600 mm     |
| <b>Power supply</b>                           | 400 V, 32 A                     |
| <b>Compressed air</b>                         | 6 bar                           |
| <b>Weight</b>                                 | ~ 2500 kg                       |
| <b>Ambient temperature</b>                    | 18 °C – 35 °C                   |

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