



LQ-Integration Laser plastic welding system for full integration into production lines

- Compact welding head with separate control cabinet
- Simple integration with comprehensive automation interfaces
- Highest process reliability and safety with integrated process control
- Versatile software and clamping technology

LQ-Integration Laser welding system featuring full integration into production lines

- Application change in less than ten minutes using standardized adapter
- Ultra short cycle times
- Designed for automatic operation

The LQ-Integration series features advanced plastic welding technology for seamless integration with production lines. LPKF's in-depth process expertise and many years of experience in mechanical engineering and automation technology makes this integration possible. LQ-Integration systems fully comply with the most stringent industrial specifications and meet or exceed the highest quality standard requirements.

LQ-Integration welds components as large as 210 x 210 mm. The welding system is designed for integration in a work carrier system or a rotary indexing table, and can be used for contour-based as well as scanner-based welding. It forms a complete system when combined with a work carrier, and offers the highest level of quality and safety due to the 100% integrated control system.

The basic system is completely customizable with optional accessories. Modular construction permits simple and cost-effective adjustment of the system to any type of application by selecting the optimum laser power and optical components. The clamping device is fast and efficient, perfect for a wide range of different components.

Because the control cabinet can be installed in a separate location from the integrated welding head, LQ-Integration systems easily fit into a pre-existing assembly setup. Comprehensive automation interfaces complete the task.



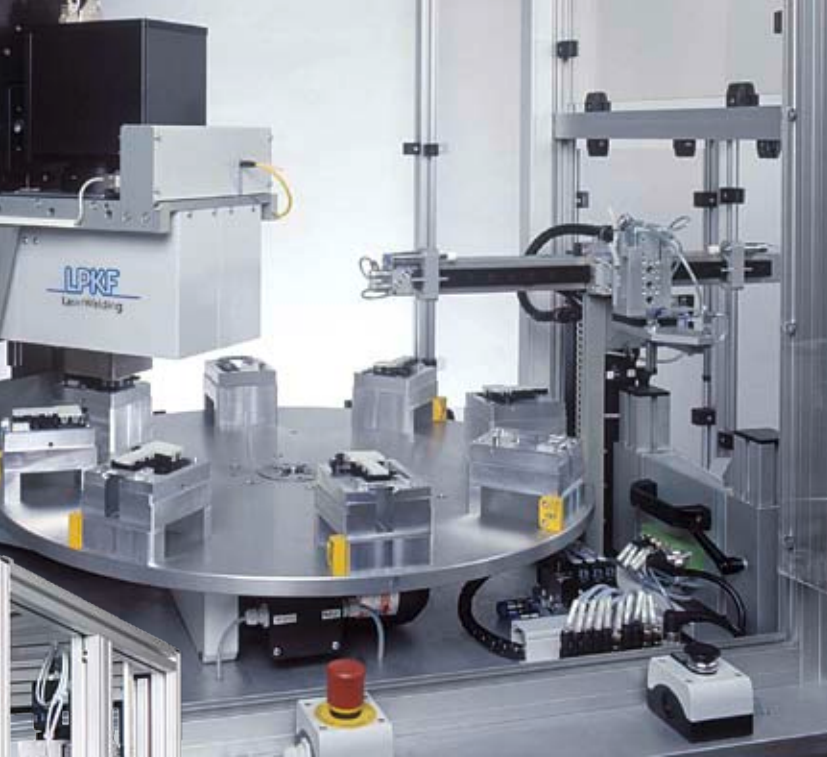
Automotive tyre pressure sensor



Shaver casing



Automotive clutch sensor



Interfaces

- Hardware (mechanical)
- Software
- Control interface
- Process data recording interface (optional)

Integration examples

- Installation on work carrier (see left side) or rotary indexing table system (see above).
- Compact installation

System components

- Fiber-optic diode laser
- Custom optics configuration available
- Galvanometer scanner
- "Dual Clamp Device" option available
- Protective housing

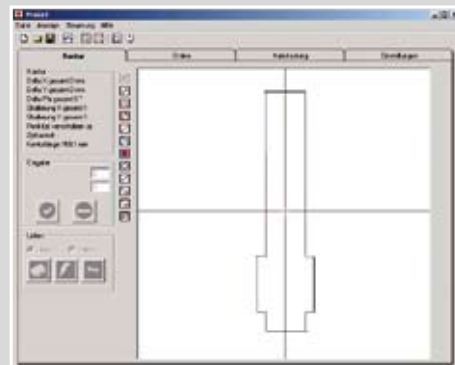
LPKF LaserWelding embodies the highest quality standards

Complete software support

- Intuitive menu-driven software behind a simple touch-screen
- Fully programmable
- Easy-to-set parameters
- Integrated online process control
- Available with Siemens touch panel PC

Simple process setup

- ProSeT: Intuitive software for simple "teach-in" of new welding contours
- Pilot laser for easy welding contour adjustment directly on the workpiece



Maximum machine uptime

- Siemens PLC components assure trouble-free operation
- High quality components by leading manufacturers
- Rugged engineering
- Designed for constant three-shift-production
- Mass production (> 10 million parts/year)
- Low-maintenance

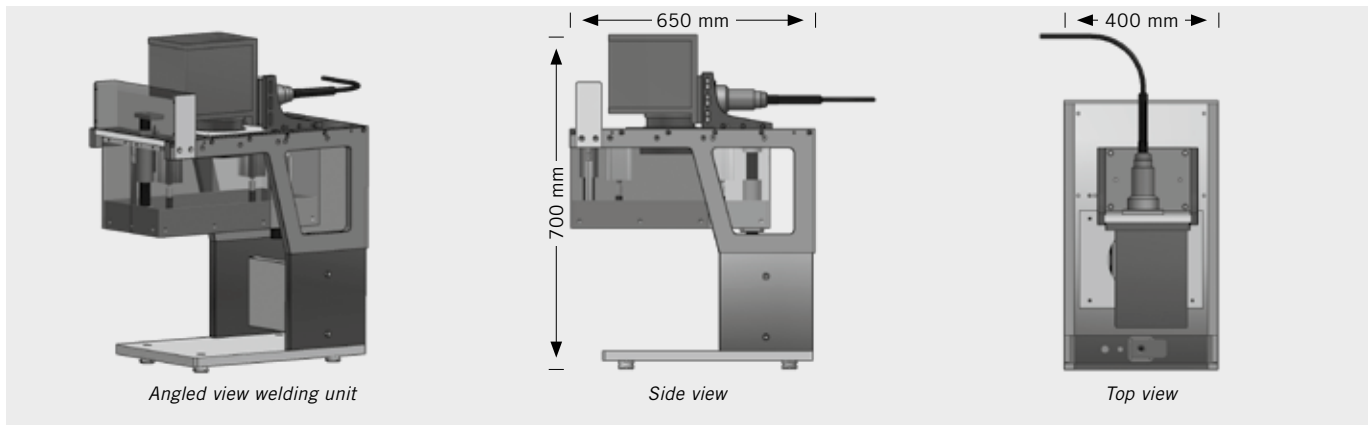
Easy maintenance

- All components integrated within the control cabinet
- All machine modules fully accessible
- No external cooling system needed
- Plug & Play modul

Advanced safety and ergonomics

- Class I laser (combined with a suitable work carrier)
- Certified to Class IV safety standards
- Laser protection fully adjustable
- CE machine certification

| Technical specifications LQ-Integration | |
|---|--|
| Laser beam source | Water-cooled fiber-coupled diode laser Wavelength: 980 nm (also available as 808 nm, 915 nm, or 940 nm) Laser power: 30–210 W (high power option up to 400 W) Fiber optic: 0.3 mm diameter (other diameters optional) Fiber optic with integrated connection, breakage, and temperature monitoring |
| Beam guide | Galvanometer scanner – aperture 20 mm (or 30 mm) |
| Working field | 45 x 45 mm (1.8" x 1.8"), 110 x 110 mm (4.3" x 4.3"), 154 x 154 mm (6.1" x 6.1") |
| Clamping technology | Pneumatic top-down clamping Electronic supervision of end positions Inductive measurement system to record the welding process Adapter plates for a variety of clamping tools |
| System control | Siemens 315 F failsafe CPU Siemens TP 170B touch panel controls Parameter management Industrial PC for process data archiving (optional) |
| Software | LPKF ProSeT software for programming the welding path |
| Online process monitoring | Process monitoring with: time control, process control, speed control |
| Interfaces | 24 V control I/O lines, Ethernet, RS-232, PROFIBUS, Anybus |
| Power requirements | Voltage: 400 V/16 A (Germany, others available) Current: max. 3 kW Air supply: 6 bar dry air |
| Environmental conditions | Maximum operating temperature: 40 °C (104 °F) Maximum humidity: 80% at 25 °C (77 °F) |
| Cooling system | Integrated water/air cooling unit Integrated water heat exchanger (optional) |
| Options | Clamping tool encoding Air-cooled clamping tools (patent pending) Advanced burn detection (patent pending) Remote maintenance option |
| Dimensions (W/H/D) | |
| Control cabinet | 800 x 800 x 2,000 mm (31.5" x 31.5" x 78.7") |
| Welding unit | 400 x 700 x 650 mm (15.7" x 27.6" x 25.6") |



This machine is designed as a Class I Laser Product.

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