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LPKF Patented Reflecton Diagnosis for Laser Plastic Welding

July 2010, Erlangen, Germany – Although laser plastic welding generally produces fewer errors, absolute reliability requires dependable verification. LPKF LaserWelding division now adds reflection diagnosis to its existing range of quality assurance methods.

“Reflection diagnosis gives us an innovative measurement tool to verify successful welding.” Frank Brunnecker, Vice President LaserWelding at LPKF Laser & Electronics AG. As of autumn 2010, reflection diagnosis will be available as an option on LPKF welding systems. (The company will present the method at the K show in Germany in Duesseldorf, October 27 to November 3, 2010 – Hall 11, Booth# E04).

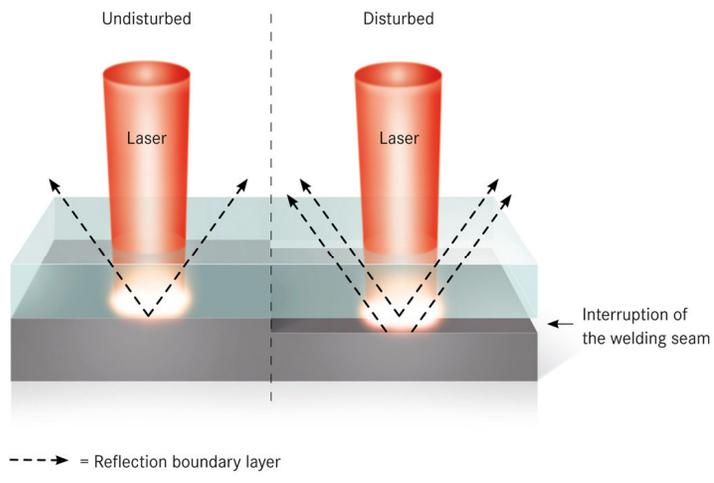
Reflection diagnosis makes use of the physical effect of light reflection at boundary surfaces. Before welding there are in effect two boundaries between the components. When light – also laser light – impinges on these boundaries, a certain amount of light can be reflected. Areas which have been welded together have no such double boundary and the amount of reflected light is reduced.

This method also allows the quality of a welded seam to be evaluated during the actual welding process. The integration of the reflection diagnosis system into the laser head gives the LPKF LQ-TwinWeld3D hybrid welding system a key advantage in the marketplace for sensitive components; such as for car tail lamps and solar panels. LPKF can effectively help reduce reject rates and deliver robust quality documentation for each individual component.

Reflection diagnosis complements existing quality assurance systems, such as melt travel monitoring, pyrometer testing and burn detection. Depending upon the specifics of each product, the various methods can be implemented to allow full tracking and tracing of individual components.

About LPKF

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



Picture: In the case of incomplete welding, LPKF measures higher reflection values

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