PRESS RELEASE

Oscillating Laser Beam Boosts Cutting Accuracy

High-dynamics scan head offers clear process advantages for laser welding and cutting

Puchheim, Germany – May 10, 2017 – As an innovative manufacturer of OEM components for laser processing machines, SCANLAB GmbH has developed a scan system for oscillating-laser-beam cutting and welding. The new wel*DYNA* scan head unites the advantages of higher laser powers and maximum dynamics. Considerable process benefits are gained by welding and cutting with high-frequency beam oscillation, particularly in macro material processing of larger components. For example, thick metal sheets and fiber-reinforced plastics can be cut more quickly and cleanly. Diverse materials of poor weldability can be robustly bonded, too.

For numerous automotive industry applications – particularly in the electro-mobility segment – a substance-to-substance bond between different materials (e.g. between copper and aluminum) is of interest as an alternative to mechanical joining. Advantages include improved electrical conductivity, more homogenous heat transfer and higher mechanical strength. Fabrication of devices and fittings likewise often calls for pressure-tight bonding of the same or dissimilar material types; e.g. in heat exchangers or cooling units. This is precisely where the new wel*DYNA* 2D scan system shines: Overlapping laser beam motions relative to the seam geometry enable tear-resistant welds of diverse materials, even for joining partners with poor weldability.

This technology already has proven merits for laser beam cutting, too: High-dynamics beam oscillation allows much faster cutting speeds, along with improved cutting quality. Key factors are the high ‘wobble motion’ frequencies of several kHz and the availability of freely definable scan patterns. Together, they deliver far superior process parameters compared to other laser methods. Applications show considerably reduced splatter formation, making weld seams and cut edges clearly smoother while also slowing down optics wear.

The new scan head is designed for multi-kW lasers of high beam quality and features digital servo control, an integrated sensor system for real-time monitoring, and water and air cooling in a robust, industrially-suitable housing. It can be easily integrated or installed with collimation and focusing modules of commercial fixed optics. Particularly in sectors such as aerospace or mechanical engineering and metal processing, where thick

metal parts and composite materials must be cut, this new scan solution opens up countless interesting new application possibilities.

Print-quality images can be downloaded at
http://www.scanlab.de/en/news-events/image-library

Current Tradeshow Calendar:
LASER World of Photonics 2017 from June 26 - 29, 2017 in Munich, Germany – Hall A2, Booth 215.

About SCANLAB:
With over 20,000 systems produced annually, SCANLAB GmbH is the world-leading and independent OEM manufacturer of scan solutions for deflecting and positioning laser beams in three dimensions. Its exceptionally fast and precise high-performance galvanometer scanners, scan heads and scan systems find application in industrial materials processing and the electronics, food and beverage industries, as well as biotech and medical technology.
For over 25 years, SCANLAB has secured its international technology leadership through pioneering developments in electronics, mechanics, optics and software, as well as the highest quality standards.

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