Press Release

LASER trade fair: TRUMPF presents particularly versatile fiber laser

Well suited for applications in e-mobility and hydrogen fuel cells // Reliable processing of copper, aluminum and steel with new beam shaping technology // Precise thanks to small spot size

Ditzingen/Munich, 16 June – The high-tech company TRUMPF has developed a particularly versatile fiber laser range for electric motors and hydrogen fuel cells. "With the new TruFiber P fiber lasers, users can manufacture core components of electric drives and hydrogen fuel cells quickly and particularly reliably," says Mark Richmond, product manager responsible for fiber lasers at TRUMPF. The high-tech company is presenting the TruFiber P at the world's leading trade fair LASER – World of Photonics in Munich.

TRUMPF fiber laser portfolio grows in breadth

The high-tech company now offers the TruFiber P in low-power versions from 500 watts to 2000 watts, including single mode variants, to complement the existing high power multi-mode versions. "With this, TRUMPF's portfolio of fiber lasers is growing in breadth," Richmond says. In each version, users can combine the fiber laser with TRUMPF's complete laser system technology. This includes programmable focusing optics or condition monitoring solutions. The single-mode fiber, which can be up to ten meters long, allows users to design their precision production more flexibly, as the beam source does not have to be located directly next to the laser cell.

Fiber laser welding for new electric vehicle power sources

Manufacturers must weld the core components of fuel cells, ultra-thin bipolar plates made of stainless steel, very precisely and with a hermetic seal. Hydrogen, the smallest molecule in the world, must not escape under any circumstances, otherwise, the entire fuel cell would be unusable. With a core fiber diameter of only 25 micrometers, the single mode fiber laser allows this high degree of precision. "The TruFiber P is particularly well suited for processing these delicate

hydrogen fuel cell components," Richmond says. This is made possible by the high beam quality in single mode operation.

Fiber laser welds copper joints of electric motors

Electric drive manufacturers also benefit from the TruFiber P with the new additional beam shaping technology BrightLine Mode, enabling the fiber laser to weld copper without spatter. For example, with the new BrightLine Mode feature the fiber laser is well suited for welding the copper hairpins of electric motors. "The TruFiber P always delivers consistently good quality. Manufacturers save material and thus costs because they have fewer rejects," says Richmond. This is made possible by the optimised beam profile of BrightLine Mode providing a very stable keyhole during the welding process. Users can also weld mild steel, stainless steel or aluminum with the fiber laser quickly, reliably and without spatter, producing excellent weld quality.

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TruFiber P with the BrightLine Mode option.
With the new beam shaping technology, the fiber laser is ideal for welding copper, for example.

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About TRUMPF

TRUMPF is a high-tech company offering manufacturing solutions in the fields of machine tools and laser technology. The Company drives digital connectivity in the manufacturing through consulting, platform products and software. TRUMPF is a technology and market leader in highly versatile machine tools for sheet metal processing and in the field of industrial lasers.
In 2021/22, the company employed some 16,500 people and generated sales of about 4.2 billion euros. With over 80 subsidiaries, the TRUMPF Group is represented in nearly every European country as well as in North America, South America and Asia. The

company has production facilities in Germany, France, the United Kingdom, Italy, Austria, Switzerland, Poland, the Czech Republic, the United States, Mexico and China.

Find out more about TRUMPF at www.trumpf.com

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