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Innovative Solutions for Medical Device Manufacturing Provided by the World's Largest Laser Manufacturer

Gilching, March 2017 – At the upcoming Medtec 2017 exhibition, COHERENT and ROFIN, who have recently merged to become the largest laser manufacturer globally, with more than 20,000 customers, will showcase tailor-made laser processing solutions for manufacturing implants, instruments and consumables. These include precision cutting solutions as well as CNC- and joystick-controlled fine welding applications and efficient UDI marking solutions. Come and see COHERENT-ROFIN at booth C18 in hall 3 on April 4th – April 6th.

Reliable, GS1 compliant UDI marking

Implementing the Unique Device Identification standard for all medical devices, covered by the FDA, places new demands on laser marking processes. From 2018, products such as instruments, implants and medical consumables have to bear an unique industrial code. This is achieved with a square or rectangular shaped GS1 data-matrix code, which contains the GTIN (Global Trade Item Number). The GTIN ensures traceability of medical products, and creates opportunities for streamlined production processes and it considerably improves patient safety.

COHERENT-ROFIN offers a wide range of laser marking solutions for applying the UDI mark onto the medical device. The emphasis is placed on biocompatibility (when substituting inks) and corrosion resistant direct marking on medical-grade stainless steel. The commonly used annealing process reduces corrosion resistance, and downstream passivation steps show negative influence on the marking contrast. With the ultrashort-pulse laser PowerLine NX, COHERENT-ROFIN offers an innovative alternative solution for direct marking on stainless steel alloys such as 1.4021, 1.4305 and 1.4301. The ultrashort pulse laser process doesn't introduce any significant heat, and produces a high quality, high contrast mark regardless of the viewing angle.

The laser as an alternative for marking medical consumables

While some processes in medical device manufacturing are simply not possible without lasers there's still a multitude of applications which could positively benefit from laser material processing. For instance by using a laser marking solution to replace pad printing in bulk production of medical consumables. Despite the higher initial investment, the total cost of ownership is lower across the life of the process. Significantly improved manufacturing quality with less production waste, and considerably reduced personnel and maintenance costs outweigh the higher investment in a short time.

Precision cutting of implants and instruments

A wide range of medical devices are manufactured using automated processing of tube material. This goes for precision cutting of medical instruments and implants, as well as removing coatings on guidewires or hypotubes. COHERENT-ROFIN offers customer-tailored solutions for these processes and others. Tube Cutting applications are based on the market-leading StarCut Tube system which is now complemented by autoloader solutions. All these products have been developed in long-term cooperation with leading manufacturers of medical instruments, endoscopes, stents and hypotubes. COHERENT-ROFIN's focus is always on top quality processing results, along with machine reliability and optimized productivity. A 5th generation StarCut Tube system currently sets the record with a clock time of more than 120,000 hours and a machine uptime greater than 95%.

For precision cutting of scalpels, saws or even minuscule Nitinol parts COHERENT-ROFIN offers a powerful and flexible workstation as well: The preconfigured MPS cutting system with its high-precision motion systems.

Performance Unlimited: maximum flexibility but still laser class I compliant

The Performance Unlimited provides a freely accessible working area, compliant with the strict German laser class I safety standard. A textile curtain and a rocking hand rest simplifies the processing of long or bulky parts, such as surgical instruments or endoscopes. Additional laser safety precautions are no longer necessary.

Besides its workstations, optimized for manual welding, COHERENT-ROFIN offers a comprehensive range of partly automated solutions to meet every user requirement. Starting with the Select, a manual laser welding workstation with integrated CNC to the MPS, a semi-automated all-in-one system.

Process know-how, laser technology and mechanical engineering from one source

Effective solutions not only require optimum laser systems but also customer-tailored workholding devices and efficient solutions for parts loading and removal. COHERENT-ROFIN is one of the few worldwide operating laser manufacturers which covers all relevant competence areas. Application evaluation and development is available on request, and the world-wide and local service network ensures instant support.