



Manz Uses Laser for Water-Tight Sealing

- **High-tech equipment manufacturer previews new laser applications at the LASER World of PHOTONICS trade show in Shanghai (China)**
- **Trade show highlight: Air- and water-tight seal of mobile devices using laser activation**
- **Manz is focusing on integrating various laser processes into fully automated production lines**

Suzhou, March 20, 2019 Manz AG, a German high-tech equipment manufacturer, presents its current portfolio of laser process applications for the electronics and energy storage industry at this year's LASER World of PHOTONICS CHINA in Shanghai from March 20 - 22, 2019. This year's trade show highlight is the water-tight adhering of mobile touch displays using thermal laser activation of the adhesive element. This provides a more reliable seal against water and moisture, as well as sweat, shampoo and chlorine for smartphones, smartwatches and fitness trackers. The entire adhesive process is fully automated from cleaning the metal or plastic housing and the display glass to assembling the components and supplying the adhesive element and its thermal activation.

"Since mobile devices currently come in a wide variety of sizes and shapes and new models hit the market yearly, it's important to the survival of the manufacturers to keep their production processes flexible while also accelerating them," explained Timo Dengler, Vice President Sales of Electronic Devices at Manz in Reutlingen (Germany). "Our laser and years of automation expertise come into play here: For instance, we configured our new modular assembly line for laser activation of adhesive elements, which is based on the LightAssembly platform, for the first hardware manufacturers using three parallel-running process units. Thus, we significantly increase the throughput per hour."

Integratable solutions using lasers for joining and separating are also possible

For several years, Manz has used modularization of individual components in their process equipment for uncomplicated integration into existing production lines of manufacturers' of hardware, electronics and batteries. The equipment can be configured modularly based on



the requirements for different laser processes. Their laser parameters can be adapted for daily use via software controls, thus dispensing with time-consuming refitting. Using the laser process equipment from Manz, optical and physical inspection systems can be integrated, such as in innovative 3D lambda kinematics for loading and unloading individual process chambers of an integrated assembly line.

In addition to laser activation of adhesive elements, Manz is presenting two additional laser applications in Shanghai that are already in use in industry: laser welding of different or reflective materials to housings of lithium-ion batteries and laser cutting of brittle materials—specifically microscope slides for medical technology.

Using laser welding in battery cells, among other things, with the BLS 500, Manz developed a solution with which the battery manufacturers can increase the performance of their batteries, reduce their charging times and lower their weight. The prerequisite for this is to use lighter and more conductive materials for the conductor contacts, such as copper and aluminum instead of steel sheet. The newly developed laser welding method in combination with a new scanner solution ensures very homogeneous weld seams or spots while minimizing undesirable mixing of materials to create stable, adjustable welding depths. BLS stands for Battery Laser System and can be configured modularly also for fully automated laser marking, drilling, cutting or removing of layers of material.

The freely configurable DLC 820 laser cutting system was specially developed for the fully automated production of wafer-thin microscope slides. The technology is based on Manz's proprietary M-Cut laser cutting process, which has proven itself in the production of cover glass for smartphones and tablet computers. M-Cut stands for *modification cut*: An ultra-short pulsed picosecond laser thinly modifies the glass substrate to be processed along a line that is only two microns thick – similar to a perforation. Specimen slides and cover glass can then be cut out mechanically in variable geometries.

Photos:



Image 1: Touch displays on smartwatch housings are sealed water-tight. The red adhesive element is fed fully automatically and is laser-activated.



Image 2: Cost-efficient mass production only via automation: welded copper conductors with nickel coating on lithium-ion battery packs.



Image 3: Specimen slides, lenses and displays: The M-Cut laser cutting process knows no limits when it comes to workpiece geometry.



Company profile:

Manz AG – passion for efficiency

Founded in 1987, Manz AG is a global high-tech equipment manufacturing company. Its business activities cover the areas of Solar, Electronics, Energy Storage, Contract Manufacturing and Service.

With many years of expertise in automation, laser processing, vision and metrology, wet chemistry and roll-to-roll processes, the company offers manufacturers and their suppliers innovative production solutions in the areas of photovoltaics, electronics, and lithium-ion battery technology. The company's product portfolio includes both customer-specific developments and standardized single machines and modules, which can be linked to create complete custom systems. Manz AG offers high-quality, needs-based solutions that can be integrated early into customer projects to contribute significantly to customer success.

The company, listed on the stock exchange in Germany since 2006, develops and produces in Germany, Slovakia, Hungary, Italy, China and Taiwan. It also has sales and service branches in the USA and India. Manz AG currently employs roughly 1,600 workers worldwide, around half of whom work in the Asian region, which is key to the company's target industries. Manz Group revenue in the 2018 financial year totaled around 297 million euros.

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