



Manz introduces flexible production platform for safe lithium-ion battery cells

- **Modular production solution BLA for laminated and stacked cells presented in May 2019 at the Battery Show Europe and at Intersolar/EES**
- **Production technology of the high-tech equipment manufacturer facilitates particularly safe battery cells**
- **BLA series with high productivity for high-performance Hard Case and Pouch batteries for electric and hybrid vehicles or stationary energy storage systems**

Reutlingen, May 7, 2019 With the newly developed production platform of the BLA series, Manz offers manufacturers of lithium-ion batteries a highly efficient solution for producing safe Hard Case or Pouch battery cells. Both cell types are preferred by many manufacturers of high performance electric and hybrid vehicles or stationary energy storage systems: together the two formats have a higher market share than cylindrical battery cells, which currently dominate consumer electronics.

With the BLA production system, individual modules can be combined for different production steps in the manufacturing. This includes, for example, unwinding of previously notched raw material for anodes and cathodes, cutting these electrodes and placing them between the separator, thermal and press lamination, all testing steps or stacking on a workpiece carrier. The BLA system can be freely configured and can be used both as a pilot system and in automated mass production: This makes cell production very flexible for battery manufacturers. Battery sizes and configurations can be varied easily using the equipment from Manz. For example, mono-cells or even bi-cells can be manufactured both in an axial and a radial cell configuration.

Fastest laminating and stacking process on the market, currently unique

"With the BLA method from Manz, the separator is not folded in a Z-shape, but instead the anode and cathode are placed from above and from below on to the separator inserted in the middle. The mono-cell or bi-cell manufactured in this way is then laminated, cut and stacked shrink-stable. Our production method is currently unique in the market, the lithium-ion batteries produced with it offer a significantly higher level of safety than non-laminated cells,



especially against voltage flashovers," says Tamara Sonatore, Head of Sales Energy Storage at high-tech equipment manufacturer Manz.

With a material speed of up to four hundred millimeters per second, the BLA series from Manz is at least twice as fast as alternative stacking systems. Alongside the high process speed, a very high positioning accuracy for the electrodes and integrated optical and electrical test systems after the individual production steps ensure high equipment productivity and maximum quality of the finished battery cells. As a result, defective material is rejected directly from the production process and is not processed further.

Manz already has more than 20 years' experience with laminating technology for battery cells: Europe's leading manufacturer of production equipment for lithium-ion batteries introduced the first laminating machine for lithium-polymer batteries back in 1996. The newly developed BLA series now serves the growing demand for high-performance mobile and stationary energy storage solutions, above all from battery manufacturers in Europe and Asia.

Photos:

Image 1:



Flexible configuration: The laminating and stacking equipment of the BLA series for laminated and stacked lithium-ion battery cells

Image 2:



Hard Case and Pouch battery cells are increasingly in demand for electric vehicles and stationary energy storage systems because they facilitate more power compared to cylindrical batteries.

Further information on the BLA-series as well as a video can be found on our website at <https://www.manz.com/en/product-detail/bla-series/9145/>.



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 Asia 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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