

Zonzsin's Battery Pack Assembly Line Achieves 99.95% Final Welding Yield with Precision Vision and Process Control

Advanced vision inspection and process control enable Zonzsin to achieve ultra-high welding consistency in battery pack production.

CALIFORNIA, CA, UNITED STATES, June 25, 2026 /EINPresswire.com/ -- SHANGHAI — Shanghai [Zonzsin](#) Intelligent Equipment Co., Ltd., a specialized manufacturer of intelligent battery pack assembly equipment, has released detailed technical parameters for its fully automatic battery pack assembly lines, highlighting a final welding qualification rate of 99.95% and a single-machine operation rate of 95% or higher. The company, established in 2019, serves lithium battery manufacturers, energy storage integrators, and automotive OEMs across Southeast Asia and the European Union, where export business accounts for 60% of total sales.



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ZONZSIN

Shanghai Zonzsin Intelligent Equipment Co., Ltd.

As the global market for electric vehicles (EVs) and battery energy storage systems (BESS) expands, manufacturers are demanding higher yield and consistency in battery pack assembly. Zonzsin's lines address core challenges including cell positioning accuracy, laser welding thermal stability, and explosion-proof safety, which directly impact production throughput and long-term reliability.

Technical Architecture and Core Processes

The company's automatic battery pack assembly lines incorporate a multi-stage intelligent variable-frequency conveyor system combined with a machine vision positioning module for

prismatic cells. The laser welding stations achieve a one-time welding qualification rate of 99.5% and a final qualification rate of 99.95%, according to the product specification for model ZZX2313 (EV battery pack assembly line). The line operates with compressed air supply of 0.5–0.8 MPa and electrical requirements of AC 380 V $\pm 10\%$.

For the CTP (Cell-to-Pack) segment, the ZZX2406 line measures L58,000 × W11,000 × H3,800 mm and supports both 314 Ah and 587 Ah prismatic cells arranged in a 1P96S configuration. Its cycle time is 4 PPM (parts per minute), and the automation level is semi-automatic, with touch screen interface and programmable logic control. The structural material is carbon steel Q235.

The blade battery pack assembly line (model ZZX2501) achieves a cycle time of 6 PPM, equivalent to 30 minutes per pack, and operates under compressed air of 0.6–0.8 MPa and AC 380 V $\pm 10\%$, 50 ± 0.5 Hz. These lines are built with protective designs including ESD grounding, safety interlocks, and fire prevention measures, as specified in the company's risk control protocols for battery short-circuit and overheating hazards.

Industry Positioning and Competitive Differentiation

Compared with established competitors including ATW and Lead Intelligent (Wuxi Lead Intelligent Equipment Co., Ltd.), Zonzsin emphasizes customized line integration tailored to specific production requirements. The company states that its modular design approach yields an estimated 20% reduction in initial investment, 50% labor savings, and a 20% improvement in cycle time efficiency, based on benchmark comparisons. Maintenance expenditures are reportedly 20% lower due to standardized components and remote support capabilities.

Zonzsin's R&D team of 43 engineers enables the delivery of turnkey solutions for both CTP and MTP battery pack assembly lines, covering prismatic, blade, and other cell formats. The lines are applicable to EV traction battery packs, stationary storage packs, and customized industrial battery systems.

Certification and Quality Assurance

The company holds ISO 9001:2015 quality management certification (certificate no. 44825MS079001R0, issued by ZDCB), covering laser welding equipment, module pack assembly lines, and AGV-based cluster loading robots. All lines undergo 100% testing prior to delivery and are subject to Factory Acceptance Testing (FAT) either onsite or remotely. Standard payment terms require 50% advance by T/T, with the balance due within three business days after the bill of lading date.

A [CTP battery pack assembly line](#) delivered to an Indian customer, operating in a U-shaped layout for space efficiency.

Market Deployment and Customer Application

In India, a major automotive OEM and energy storage integrator deployed a Zonzsin CTP battery pack assembly line for a one-year project. The line achieved stable operation and was praised for its space-saving U-shaped layout and user-friendly interface. The company's delivery capability includes one unit per standard order, with a lead time of three to five months and monthly production capacity of three units.

Zonzsin's product portfolio spans ESS battery pack insertion robots for containers and fully automatic battery pack assembly lines. The company targets medium-to-high volume production environments where consistency and yield are critical, offering flexible automation solutions that can be upgraded from semi-automatic to fully automatic configurations.

Outlook

With global EV penetration and stationary storage deployments accelerating, automated battery pack assembly lines are becoming a bottleneck for scale-up. Zonzsin plans to expand its presence in Europe and Southeast Asia by leveraging its customization capabilities and cost advantages. The company is based at Building 22, No. 2199, Shebei Highway, Sheshan Town, Songjiang District, Shanghai, and can be contacted via Katty.liu (email: katty.liu@zonzsin.com, tel: +86 134-8282-9368). A product brochure is available for download at the company's website www.zonzsin.com

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