

The Osterrath and RMA Collaboration in Advanced Laser Welding



Introduction to RMA and Osterrath GmbH & Co. KG Collaboration

RMA is a leading provider of laser welding solutions for the battery industry, combining deep expertise in laser processing with a multidisciplinary engineering team.

Its high-performance, customized systems are designed to meet the evolving demands of battery manufacturing, ensuring precision, reliability, and efficiency.

The Battery Welder series offers exceptional efficiency, flexibility, and top safety standards. Each system is fully customizable for seamless integration into automated production lines.

Backed by a state-of-the-art welding laboratory, RMA provides comprehensive support to optimize processes and maximize results.



The collaboration between **Osterrath GmbH & Co. KG** and **RMA** merges premium connector solutions with advanced laser welding expertise. By integrating **Osterrath's** high-quality components with **RMA's** specialized process engineering, this partnership delivers welding results that meet the highest standards of strength, conductivity, and consistency.

Osterrath - Key Strengths of Connectors for the Battery Industry

Osterrath connectors, especially those designed for battery welding, stand out due to three core strengths:

- **Material Expertise & Precision**

Highly conductive materials such as copper alloys with optimized surface treatments ensure minimal contact resistance and maximum energy efficiency - a decisive factor in high-performance batteries.

- **Modularity & Adaptability**

The development team works closely with customers to **tailor connectors precisely to specific cell formats, pack designs, and thermal requirements**. This is especially crucial for emerging cell technologies, such as prismatic cells.

- **Automation & Process Integration**

Parts are **engineered not only for functionality but also for seamless integration with automated manufacturing processes** like laser welding, ultrasonic welding, and robotic assembly. This approach helps reduce production costs while enhancing quality.

Anticipating future challenges, like higher energy densities, new cell chemistries, and sustainability requirements - **Osterrath actively designs recycling-friendly materials**. Partnering with **RMA** accelerates bringing these innovations to market.

Materials and Production Standards as Guarantees of Quality and Durability

Osterrath's commitment to excellence stems from careful material selection and rigorous production standards:

- **Material Selection Functionality Meets Sustainability**

Focus lies on highly conductive materials such as copper alloys and clad copper materials, offering outstanding electrical properties and mechanical stability-critical for the lifecycle of battery composites under thermal and mechanical stresses.

- **Production Standards – Precision and Process Reliability**

Manufacturing adheres to automotive standards with the tightest tolerances, automated inline controls, and full digital traceability. This ensures consistently high quality, less waste, and reliable delivery performance.

Osterrath also develops specialized welding geometries that reduce heat during joining, ensuring long-term contact quality even under intensive charging cycles.

Benefits of Using Osterrath Connectors with Laser Welding Technology

From an end-user perspective, integrating Osterrath connectors with laser welding technology brings clear advantages:

- **Performance**

Laser welded connections deliver extremely low contact resistance, enabling less energy loss, higher charging and discharging currents, and improved overall battery module performance.

Contact geometries are optimized for energy distribution and thermal stability, enhancing efficiency even under heavy loads.

- **Safety**

Laser welding ensures reproducible, gas-tight connections that minimize risks of contact corrosion or thermal failures. Osterrath connectors are designed to withstand mechanical stress, vibrations, and temperature cycles safely-essential for automotive and industrial applications.

- **Durability**

Precise welding and premium materials result in connections with significantly longer service life, even with frequent charging cycles. End users benefit from reduced maintenance, extended warranty periods, and overall more reliable products.

Benefits of Using Osterrath Connectors with Laser Welding Technology

The Osterrath and RMA collaboration drives significant improvements in welding performance, especially in:

- **Joint Quality**

Combining precision - manufactured connectors with RMA's laser welding expertise enables optimized weld seam geometry, resulting in fewer microcracks, enhanced mechanical stability, and superior reproducibility.

Advanced surface structures under development improve energy distribution during laser welding, increasing seam strength while minimizing thermal damage.

- **Electrical Conductivity**

The quality of the welded joint directly impacts contact resistance. Osterrath’s highly conductive materials, when perfectly matched with RMA’s laser welding parameters, further reduce contact resistance. This leads to more efficient current flow, less heat generation, and enhanced battery module performance.

- **Process Consistency**

The collaboration ensures that connector geometries and material properties are fully compatible with automated laser welding workflows, supporting stable positioning, repeatable energy distribution, and reliable joint formation. This reduces scrap, increases process reliability, and guarantees consistent quality—even at high production volumes.

Scalability and Future-Proof Battery Production with Osterrath

As production volumes scale, Osterrath connectors help manufacturers meet the battery industry’s demands for:

- **Tight Tolerances**

High-precision stamping tools and camera-based inline measurement systems ensure tolerances within a few micrometers are consistently maintained.

- **Zero-Defect Quality**

A “zero defect” approach based on automated quality controls, digital traceability, and continuous process optimization ensures premium quality.

- **Scalable, Future-Proof Manufacturing**

Modular and flexible manufacturing processes enable rapid scaling without compromising quality. Continuous investments in automation, robotics, and digital production planning allow Osterrath to meet complex customer requirements swiftly and competitively.



Patrick Sassmann,
Head of Development at Osterrath,
highlights:

„Our connectors are engineered to support manufacturers in scaling production with uncompromised precision and quality, ensuring they meet evolving industry standards and market demands.“

He adds:

„The collaboration with RMA enables the integration of these components into highly automated lines, further enhancing process consistency and efficiency at scale.“

Conclusion: A Strategic Partnership Shaping the Future of Battery Manufacturing

The collaboration between Osterrath and RMA exemplifies how combining high-quality components with cutting-edge laser welding technology sets new benchmarks in battery production.

Together, they deliver **superior quality, performance, and safety**, offering end users **longer-lasting, more reliable batteries** while giving manufacturers the confidence to **scale production efficiently**.

Patrick Sassmann emphasizes:

„This partnership enables the production of battery modules that meet the highest standards in strength, conductivity, and consistency-critical factors for future battery technologies.“

He concludes:

„By integrating Osterrath’s connector expertise with RMA’s advanced laser welding systems, manufacturers are empowered to create scalable, precise, and reliable production processes ready to meet tomorrow’s challenges.“

This partnership truly powers the next generation of battery manufacturing—precise, reliable, and ready for the future.

RMA

