

CASE STUDY

Power in Partnership:

How STANLEY Led an Auto OEM and Tiers to a Successful Battery Pack Assembly Launch



When a leading original equipment manufacturer (OEM) in the automotive sector encountered significant fastening challenges during their North American battery assembly launch, they turned to STANLEY Engineered Fastening (SEF). With the continued rise of electric vehicles (EVs) in the global market, specific hurdles were presented due to the need for both aluminum and steel joining solutions. SEF was able to partner in the early development stage, providing expertise in both self-pierce riveting (SPR) and diverse capability with mixed-material stud welding to lead to a comprehensive fastening strategy.

Moving into high-volume electric vehicle (EV) production, the OEM required advanced welding and fastening solutions for aluminum materials-a new development in their assembly processes. SEF had prior long-standing relationships within the company, and this EV joint development marked a substantial shift toward more complex fastening solutions for mass-production battery assembly.

They needed a trusted partner who could navigate through these technical challenges working through their Tier suppliers, while additionally understanding and driving technical approvals through the OEM ranks. Ultimately, through vast SEF global development with the OEM engineers and Tiers, STANLEY has been solidified as the go-to experts with fastening and equipment solutions while ensuring seamless integration across diverse materials and assembly components. As a result, STANLEY is now providing over 350 fasteners on each of the OEM's large battery assembly comprised of stud welding for both steel and aluminum, self-piercing rivets (SPR), POP[®] rivet nuts and threaded screws.

STANLEY has been able to provide our OEM/Tier customers immediate domestic production support wherever their build locations may be. This has allotted STANLEY to cut global sourcing costs, be in compliance with domestic market condition requirements and allow our customers to take advantage of having fasteners readily available in each region – making local assembly seamless wherever their teams are working around the world.



Daily Engagement Ensures Seamless Project Progress

Once the fastener scope was confirmed, SEF embarked on developing a comprehensive strategy to meet the customer's needs, focusing on five key areas:

#1. Collaboration and Understanding:

SEF worked closely with the OEM to gather all necessary part numbers, technical drawings, and specifications. SEF clearly understood the joint requirements, enabling them to provide fastener solutions aligned with their customer's engineering expectations.

#2. Hands-On Support:

SEF engaged early and often with the OEM and Tier suppliers. This involved regular on-site visits to support prototype builds to fully comprehend the fasteners and joints used within the battery assembly application. This proactive approach ensured that SEF could recommend the right tooling solutions to install the fasteners effectively, while providing collective technical and commercial support globally.

#3. Validation and Testing:

SEF conducted rigorous joint validation by taking the materials planned for production, testing them, and providing the OEM with invaluable data. This ensured the integrity of the fasteners and allowed their customer to proceed confidently, knowing that SEF's solutions would support both the steel mating beams and the aluminum battery tray covers.

#4. Daily Engagement and Guidance:

By constantly communicating with the OEM and their suppliers, SEF provided ongoing support and guidance, keeping the project on track during their pre-production build events. This consistency allowed their customers to understand the depth and diversity in STANLEY's product offerings and solutions.

#5. Overcoming Challenges:

SEF had various challenges in launching this depth of components for this assembly – this entailed STANLEY to not only work through the OEM's engineering team in development but also obtaining commercial agreements and deliverables though the Tiers in the USA, Europe, Mexico and Asia – which took a globally diverse collective effort.



Delivering High-Value Data, Ensuring Effective Production

SEF's collaboration with the OEM resulted in a successful and seamless fastening solution for the battery assembly project. SEF's global support and competitive pricing allowed them to win both the POP Nut and aluminum stud business with the leading Tier supplier.

Every step of the way, SEF's deep expertise in fastening solutions gave the OEM valuable insights into the product lines, offering features and capabilities they were previously unaware of that would best benefit their project.



Clear, Consistent Communication

Consistent communication and hands-on guidance throughout the project gave both the OEM and their suppliers the confidence that their fasteners and tooling would support the complex battery assembly process, ensuring a seamless transition from prototype to mass production. By providing continuous support and sharing critical information, SEF became the OEM's go-to partner when facing challenges with fasteners.

This trust has carried over to future projects with the customer for both EV and ICE vehicles. The success of the battery assembly project led to SEF securing an extended role in the company's North American global production lines, as they now operate two key NA battery assembly projects for SUV and Truck production, and SEF was able to transfer these validated products to both applications.



Why Choose STANLEY Engineered Fastening?

SEF's ability to navigate complex engineering challenges, provide ongoing support, and deliver validated solutions made it the ideal partner for this project. Their dedication to understanding the customer's unique needs and their global expertise in fastening and tooling positioned SEF as a trusted, long-term collaborator in the growing EV market.

Working with SEF ensures that you'll have a partner who can tackle the most demanding production challenges, driving innovation and delivering results that matter.

Benefitting from Single-Supplier Sourcing

STANLEY's diversity in product development, engineering and equipment solutions made the OEMs development path much easier moving into EV's. SEF is the ideal partner to work with, not only does a wide portfolio of fastening allow them to rely on an all-in-one single supplier, but the internal attributes are what keeps driving various other application developments on this program – superior customer service, elite technical knowhow in joint and product development, immediate quality control and responsiveness, ability to connect equipment tooling to fastener installation and collective global support.





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STANLEY ENGINEERED FASTENING FAMILY OF BRANDS

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