

Case Study

Vibration-Resistant Mounting Solutions for EV Chassis

HV System Assembly



1 Challenge

Pain Point Discovery

Conventional bolts provided minimal vibration resistance, leading to:

- Short-circuit and system failures
- Component loosening
- Expensive repairs / replacements
- Increased maintenance & downtime

Application Understanding & Analysis

Worked closely with the customer to identify:

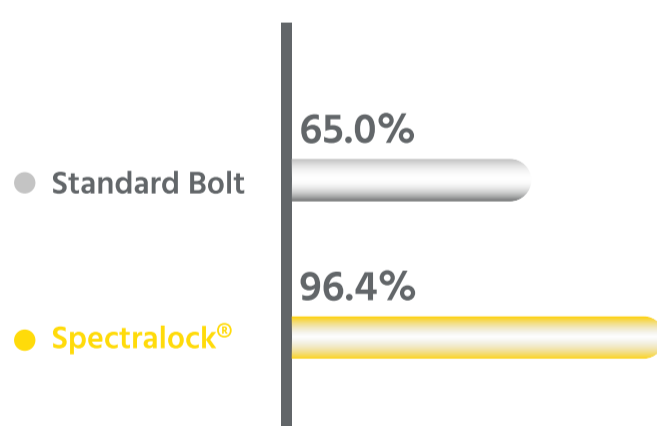
- Specific requirements for application areas
- Test criteria to validate solutions

2 Solution

Development & Prototype Testing

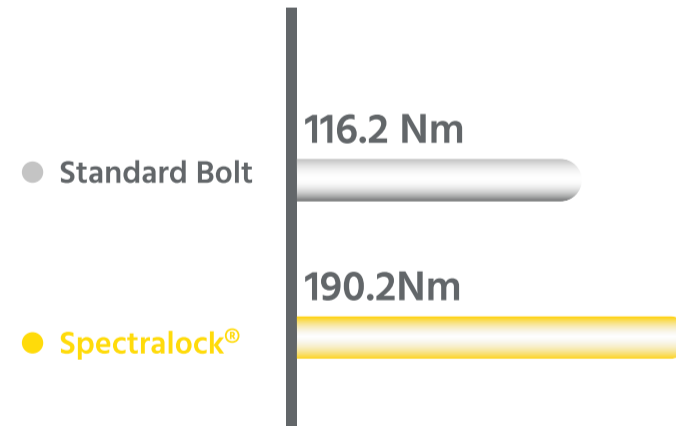
- Global collaboration on design and optimization
- Samples developed and tested with vehicle-level validation in our R&D labs

Junker Test



0.5x higher pre-load retention

Drive-To-Failure Test



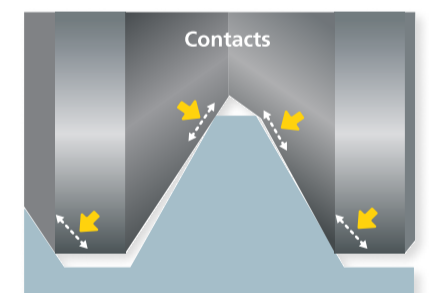
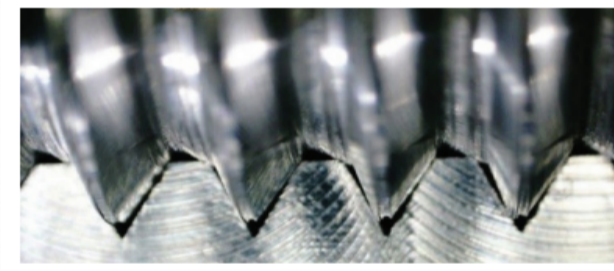
1.6x higher torque to failure

Providing Superior Mechanical Solutions

Spectralock® Fastening Solutions

Seven bolt variants recommended for better thread engagement and vibration resistance for:

- Cradle assembly
- Battery mounting structure
- Drive motor mechanism



Innovative locking thread form



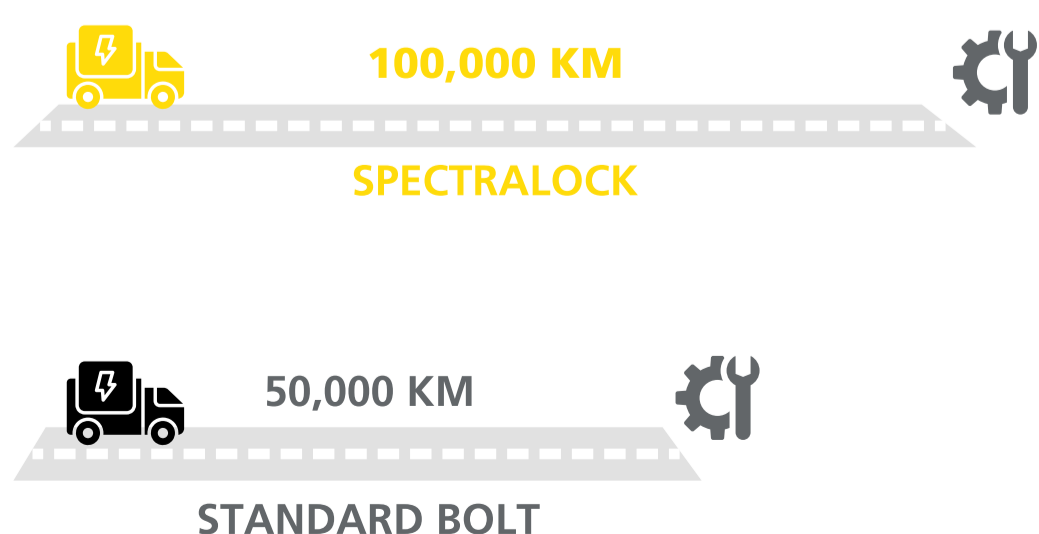
Diameter: M12



Length: 30mm to 100mm

3 Results

Reduced Maintenance Downtime



Lower Total Cost of Ownership

- Improved vehicle reliability
- Eliminating risk of failure
- Lowering product fatigue
- Increasing run times