

Silvertech[®] RBH

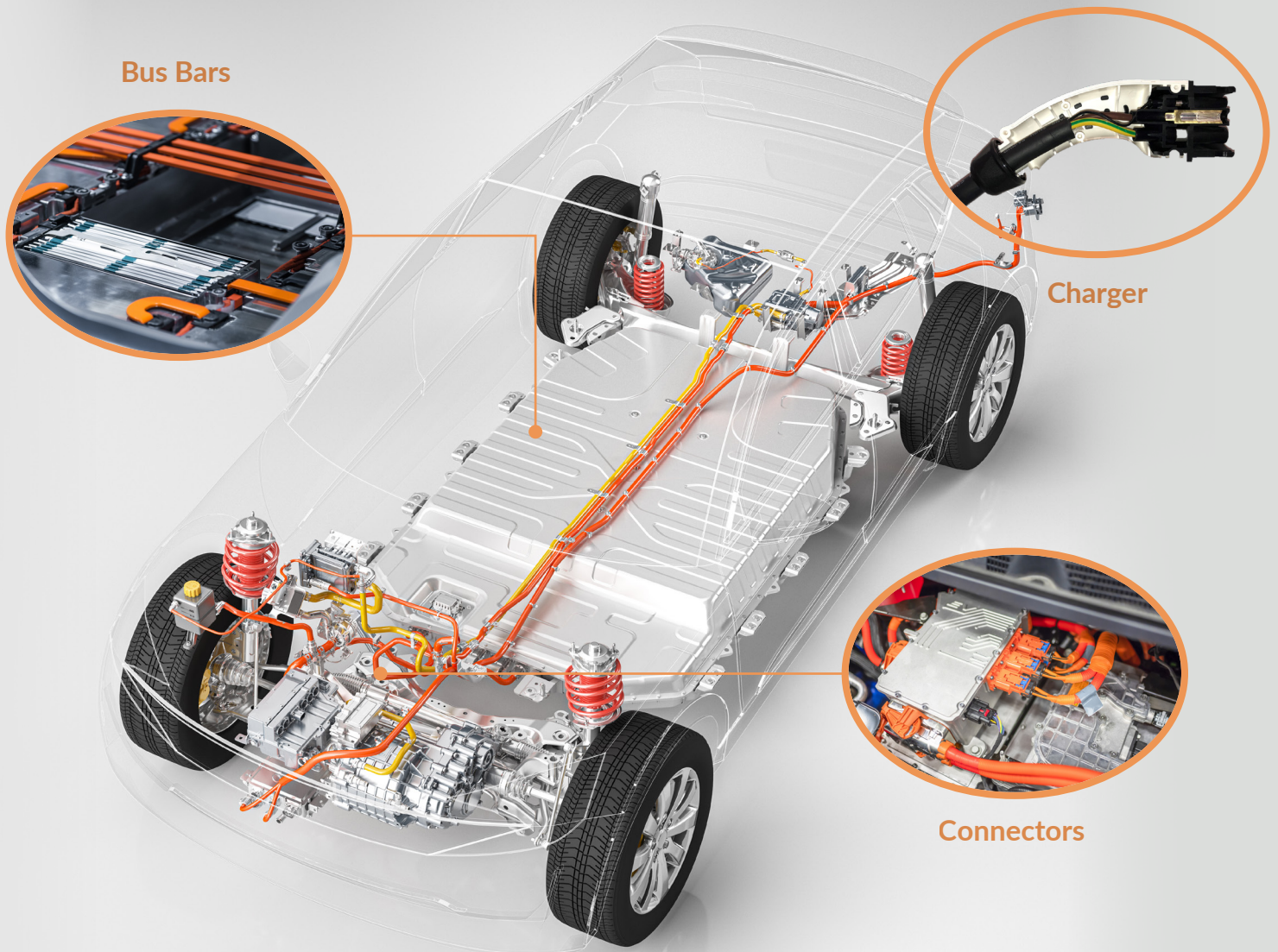
Hard silver plating



Electronics

Functional electronic coatings

atotech.com



Silvertech[®] RBH

Silvertech[®] RBH is a new plating process that deposits a hard silver layer on bus bars, connectors, and chargers. Its hardness of about 180 Hv and low contact resistance make it an ideal match for the needs of electrical vehicles. The process is designed to run in Rack and Barrel tools and exhibits an exceptional process stability. It can be combined with our Cr (VI) free anti-tarnishes to preserve its layer properties.

Silvertech® RBH – Hard silver plating process

Deposit characteristics of Silvertech® RBH



Figure 1: Deposit characteristics of a 35 µm Ag layer for fresh and aged electrolytes

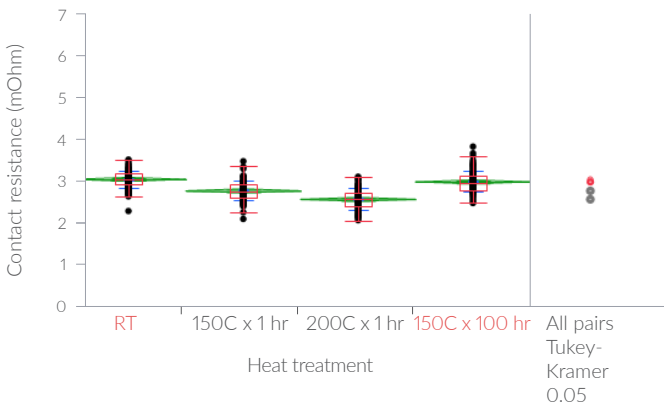


Figure 2: Contact resistance after heat treatment

Exceptional process stability

Consistent deposit properties over the life time of a process is a must. Silvertech® RBH is fulfilling this demand in a perfect way. Be it hardness, contact resistance, or coefficient of friction, all these crucial parameters stay within a narrow range over a long period.

The fine grained microstructure results in a hardness of >180 HV₂₀ and ensures an improved wear off behaviour whereas the low contact resistance is the perfect match for the high voltage/power connections within the power train of e-vehicles. Moreover, the low coefficient of friction allows for low mating forces which is essential for multi pin connectors.

To maintain properties over a long period of application we propose to protect the silver surface with our Cr(VI) free anti-tarnish Argalin® XL.

Temperature stability

Silver deposits have to withstand high temperatures during operation. Silvertech® RBH deposits withstand long periods at elevated temperatures without delamination from the underlying nickel or copper base material. It keeps its good contact resistance and low coefficient of friction and maintains a hardness value well above 120 HV₂₀ even after 1,000 h at 150 °C, a significant difference to pure silver deposits (60 HV₂₀).

Operating parameters and performance

- Current density: Up to 5 ASD
- Single additive system for simplified process control
- Hardness: 180 HV₂₀
- Contact resistance : 3-4 mOhm, heat stable
- Purity: ASTM B700-20 type 3, grade B, D
- Appearance: Technical brightness
- Good solderability

