

Application example

## Screw-on solution for aluminum busbars

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SIEVING



### Task

An aluminum busbar with a cross-section of 120mm<sup>2</sup>, which is designed for high currents, should be provided in an electric vehicle as the connection to the traction battery. The challenge in this case is to weld a nickel-plated brass sheet to this busbar with a screw which has already been pressed in. The complexity results from the curved shape of the contact part, which considerably restricts accessibility to the welding point. The press-in screw can also fall off due to vibrations which can occur.

### Solution

PowerWheel® technology is utilized in view of the large joint area, which requires extensive welding power. This technology enables the transmission of high power and, in combination with a damping device, thereby welding without damaging the press connection. The welding between the aluminum busbar and the nickel-plated brass contact functions reliably in series.

### Advantages of this configuration

Ultrasonic welding enables a reliable and permanently stable connection of different metals, whereby the electrical contact resistance is minimized.

Integrated monitoring of the welding process ensures a consistently high quality of the welded joints. When compared to other welding processes, ultrasonic metal welding is significantly more energy-efficient, which therefore makes the technology particularly valuable.



The application was welded using torsional PowerWheel® technology. Above, the Telso®Terminal TT7 with a maximum welding power of 14.4kW.