

Application example

Charging socket for DC fast charging (CCS1, CCS2, GB/T, CHAdeMO)

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SIEVING



Task

For an electrical charging socket with very limited interior space, a copper plug contact with a copper cable and a cross section of 95 mm² with excellent electrical conductivity and minimal contact resistance needs to be connected. The plug pins can have different outgoing directions, which is why a modular tooling concept is essential for fast product changeover.

Solution

The ultrasonic method is used for this demanding contacting task. Due to the large cable cross section and a required welding width of 18 mm, the application is realized on a torsional PowerWheel[®] welding system with modular tool design and sensor-monitored terminal fixtures. The sonotrode and tools are tempered by liquid cooling for a stable series process.

Advantages of this configuration

Thanks to the ultrasonic process, no additives are required. The resulting, firm bond is characterized by minimal contact resistance. The PowerWheel[®] technology allows smaller welding widths with greater node thicknesses and is therefore ideally suited for narrow installation spaces. The temperature control of the tools ensures a stable process, and the modular tooling concept enables quick product changes. The combination with monitored terminal recordings as well as welding data control supports the Poka-Yoke principle with the goal of zero-defect production.



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