

Application example

Charging socket TE Connectivity CCS2

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 will 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 Centerbolt sonotrode and tools are tempered by liquid cooling for a stable series process.

Configuration advantages

Thanks to the ultrasonic process, no additives are required. The resulting, substance-to-substance 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 changing. 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 implemented on a torsional ultrasonic PowerWheel® system MT8000, power 10 kW, with the Telso®Flex control software.