

Application example

Switch assembly with copper wire on a contact

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



Task

The individual components in a switch assembly (made up of a fine, braided copper wire plus two perforated/bent contacts also made of copper but with a silver-coated collar) need to be reliably connected together in a way that ensures good electrical conductivity. The braided wires have already been compacted at both ends.

Solution

The application was resolved using a linear 20kHz MPX ultrasonic metal welding system with a quadruple multi-sonotrode. The sonotrode has four different welding surfaces and can be used for a variety of different assemblies. Welding pre-compacted wires makes things a lot easier for the anvil mechanism. The state-of-the-art TCS5 process controller monitors and ensures the quality of the weld.

Configuration advantages

Thanks to ultrasonic technology, even coated components can be welded with ease. Of course, the various materials have to be compatible with one another and the coating must be capable of adhering to the base material without issue. The use of multiple sonotrodes enables tooling costs to be kept to a minimum. Compacting the ends of the wires in advance means that you no longer need to use complicated anvil mechanisms with flex support on both sides. The TCS5 process controller comes with a range of quality windows for a number of welding parameters.



The application was welded on a linear 20 kHz MPX ultrasonic welding system with a TCS5 process controller, MAG generator and quadruple multi-sonotrode.