

Application example

Connections on delicate ceramic printed circuit boards

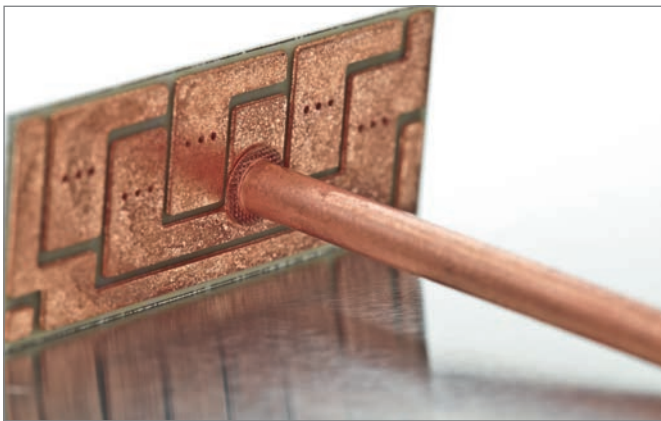
PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



Task

A highly sensitive ceramic circuit board with copper conductor tracks needs to be connected to a high pin. The electrical contact resistance must be as low as possible and the ceramic must not be damaged. Not even the tiniest cracks are permitted.

Solution

With torsional SONIQTWIST® ultrasonic welding technology, you can reliably weld high quantities of these contacts in a fully automatic process. The pin is designed to have a collar, the point to which the sonotrode can transfer its torsional oscillations. Ultrasonics enables metals to be welded together with very low electrical contact resistance, resulting in very few losses.

Configuration advantages

With torsional SONIQTWIST® technology, ultrasonic oscillations are not applied to the component vertically but instead tangentially, meaning that hardly any of the oscillations reach the sensitive ceramic to damage it. Other brittle, sensitive materials such as glass can be reliably combined to other materials using torsional technology. The 40 mm pin cannot be welded using conventional, linear ultrasonics. The only way to do it is with SONIQTWIST® technology.



This application was produced using a 1.2 kW torsional TSP750 SONIQTWIST® system and TCS5 controller, as well as using a special system with corresponding components.