

## Application example

### Riveting metal conductors in a housing

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



#### Task

In an electronics housing for the automotive industry, two punched electrical PCB tracks with fuse holders on both sides are to be fixed in place in several positions with a total of 20 rivet heads. The connection must be reliable and as free from play as possible.

#### Solution

The ultrasonic riveting process was selected for this connection task. As both metal conductors need to be fixed in multiple places as simultaneously as possible, a waffle structure is used as the rivet head shape. The application is carried out on a USP3000 ultrasonic system and three spring-loaded ultrasonic systems with a mechanical-electrical welding path limiting system.

#### Configuration advantages

As the individual riveting points are spread over a relatively large surface, they cannot be processed reliably with a single ultrasonic system and a sonotrode. Combining the riveting points into three groups, each with a separate ultrasonic system, makes it possible to set and optimise each group individually. Monitoring each system with a welding path limiting device with relative parts scanning ensures perfect riveting quality by limiting the ultrasonics individually in each case. The large number of riveting points can be perfectly formed with a non-position-critical waffle pattern.



The application was produced on a USP3000 ultrasonic welding system with TCS5 controller, or with corresponding components in a special system.

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