

ATTACHING SENSOR HOLDERS BY WELDING

**■ The task**

A modern, thin-walled car bumper (wall thickness 2.8 – 3.0 mm) has been pre-punched with the holes for the sensor holders. The task is to weld the holders for the sensors into the holes.

The bumper has already been paint-finished, and is very delicate; at the same time, the welding is expected to be very firm and secure without producing any visual blemishes to the face of the bumper.

■ The solution

The task was reliably accomplished using torsional technology. The application runs fully automatically, either in a special machine with all four welds carried out simultaneously or with a freely programmable robot.

■ The advantages

With torsional ultrasonics it is possible to achieve very strong welds on body parts even with walls that are only 2.5 mm thick. As the sonotrode does not penetrate into the base material, the weld takes place only through friction between the holder and bumper contact surfaces.

This means that the holders can be smaller than hitherto because only ring-shaped welding has to be carried out.

This produces welds which easily and reliably comply with the normal strength requirements (250 – 300 N). The process does not produce any visual marks.



The application was carried out on a TSP3000 using additional components for the special rigging.

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