TELSONIC
ULTRASONICS

Application example

Flange drive hub in data medium disc

PLASTIC WELDING | METAL WELDING | CUTTING | CLEANING | SCREENING

The application was flanged on a torsional SONIQTWIST®-TSP750 welding system with MAG generator and TCS5 controller or with corresponding components in a special system.

Task

A metal drive plate must be fixed to a plastic data medium disc. The hub must remain freely movable after the fixing process, and as few free particles as possible must be generated during the process. The reshaped plastic area must have a compact and homogeneous appearance.

Solution

Torsional SONIQTWIST® ultrasonics technology was used for this fixing process, which has various demanding requirements. For reshaping purposes, this offers some interesting advantages compared to conventional, longitudinal technology. With appropriate components of a torsional TSP750 welding system, the flanging process can be manufactured and monitored in a production system rapidly, reliably and fully automatically.

Configuration advantages

With torsional flanging technology, the ultrasonics are not introduced vertically into the component but tangentially, i.e. parallel to the joint plane. In this way the plastic is gently melted on the contact surface of the sonotrode, i.e. without "hammering in" of the plastic part. This prevents melting of the plastic in the deep part, which avoids unwanted jamming of the hub. Further, thanks to the torsional friction oscillation, the flange batch was melted and reshaped in a particle-free manner. Therefore, scarcely any particles are generated that would contaminate the surface of the disk.