

Application example

Outlet for coffee machines

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



Task

The two-part outlet chamber of a coffee machine must be welded in a reliable and liquid-tight way. The welding system should also be able to weld additional applications without long retooling times. For quality tracking, the welding system must be able to record all relevant process parameters and, if needed, log and analyse them.

Solution

The joining task problem is solved with the ultrasonic welding process. When welding parts with complex geometries, ultrasonic-compliant design is crucial with regard to joining zone and noise exposure, taking into account the plastic used and the weld connection requirements. The application was welded on a USP3000, frequency 20 kHz, 3.6 kW output. The TCS5 controller monitors the welding process.

Configuration advantages

The universal USP3000 ultrasonic welding system allows rapid retooling to other applications. Both the sonotrodes and the fixtures can, if necessary, be implemented with a quick-change option. The TCS5 controller offers clear program management for the selection of the corresponding application parameters. During retooling, these can be selected and loaded manually or automatically. Quality tolerance windows for a variety of welding parameters ensure high and constant welding quality. In this way, errors are immediately detected and can be rectified.



The application was created on a USP3000 20 kHz ultrasonic welding system with MAG generator and TCS5 controller with data record management and process monitoring.