

Application example

Dosing cap

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



Task

Due to its shape, the dosing cap for liquid fertiliser cannot be produced in the injection-moulding process and must therefore be made in two parts. Both parts of the cap made from an amorphous plastic must be joined in a liquid-tight way. The arched surface may not have any markings.

Solution

Both individual parts of the dosing cap are welded with a USP3000 ultrasonic welding system, 20kHz frequency, 2400W, in the induction field. With amorphous plastics, the joining seam is generally implemented as a universal energy director. The sonotrode and the holder are milled with the CAD data of the part shape, taking shrinkage of the 3D mass into account. The ultrasonics are triggered after reaching a programmable sonotrode exposure force.

Configuration advantages

The ultrasonics welding process allows plastics to be joined together in a cost-effective and environmentally-friendly way without the use of adhesives or solvents. Welding components with arched surfaces require great fit precision in the tools. The adjustment of the sonotrode contact surface by 3D milling, taking component shrinkage into account, optimally meets the high fit precision requirements. The TCS5 controller offers comprehensive programming options in relation to trigger and welding modes as well as quality monitoring.



The application was created on a 20 kHz USP3000 ultrasonic welding system with MAG generator and TCS5 controller.