

Application example

Coffee machine swirl chamber

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



Task

A cylindrical, stepped inlet part is to be welded to the swirl chamber of a coffee machine. The connection must be liquid-tight and should not require additional seal elements. Both plastic parts are made from an amorphous thermoplastic structure.

Solution

The joining task is carried out using a far-field ultrasonic welding process. Far-field welding refers to a process where the distance between the sound application position and the joining plane is more than 6 mm. Due to its scale, the application is produced with a USP750 ultrasonic welding system (35 kHz/1200 W), MAG series generator and TCS5 welding process controller.

Configuration advantages

The ultrasonic welding process creates tight connections without additional seal elements. Amorphous thermoplastics can be tightly welded without any problems even in far-field processes if the joining seam is designed correctly. The modern, modular MAG ultrasonic generator provides constant power and amplitude over a voltage range of 180 V to 260 V, which ensures constant welding quality. The process controller offers various trigger and welding modes as well as extensive options for the statistical evaluation of process data.



The application was produced on a USP750 35 kHz ultrasonic welding system and TCS5 process controller, or with corresponding components integrated in a special system.