

Application example

Aroma protection valve

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



Task

Aroma protection valves are required to compensate for climatic fluctuations (such as air pressure, temperature and humidity) in tubular bags for products such as coffee without losing the aroma. The injection-moulded valve carrier is inserted into the tubular bag once the filter membrane has been attached. The membrane has to be securely attached to the valve carrier without sustaining any damage.

Solution

Ultrasonics can be used to cut membranes, film material, fabric and so on out of base material while simultaneously welding them onto a plastic part. To meet the stringent requirements of this application, the torsional SONIQTWIST® technology is used. In contrast to conventional linear ultrasonic methods, the vibrations are transferred to the component tangentially rather than vertically.

Configuration advantages

The torsional SONIQTWIST® technology can be used to cut flat moulded parts out cleanly and weld them onto a plastic part without causing damage such as cracks. In spite of the high production rates and short cycle times, quality can still be assured because the TCS5 controller offers comprehensive functions for process data acquisition and evaluation. Thanks to the modular design, the ultrasonic components can be integrated into a production line and connected up easily without any hassle.



The application was solved using torsional SONIQTWIST® components from a TSP750 20 kHz/1200 W welding system, a MAG generator and a TCS5 process controller, which were integrated into a special system.