

Application example

Filter membrane in housing component

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



Task

A pressure equalising port with a filter membrane is to be tightly sealed on an electronics housing part for automotive construction. Special laminated barrier membranes are used to make sure that no dirt particles or moisture get into the housing and that the pressure can be equalised. These laminates are very delicate and it is difficult to weld them reliably using longitudinal ultrasonics without damaging them.

Solution

The task was performed reliably with torsional SONIQTWIST® technology. The application runs fully automatically in a production line with integrated torsional components.

Configuration advantages

Torsional ultrasonic technology makes it possible to weld membranes reliably and tightly to different materials – even those with high glass content – without causing damage. When equipped with vacuum technology, the sonotrode can remove the prepunched membrane from a stack and weld it into the part. This means there is no need for a handling device and the process is extremely reliable and efficient. The sonotrode can also cut the membrane directly from a strip and weld it into the part at the same time. This is possible if the sonotrode is equipped with a ring-shaped cutting contour.



The application was successfully produced with torsional 20 kHz/1200 W SONIQTWIST® components, integrated in a fully automatic special system (torsional SE2010 TC converter, MAG generator with bus module and TCS5 process controller).