

Application example

Medical compresses with sealed edge zone

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



Task

Medical compresses are frequently applied to wounds and are usually made from several layers of fabric (non-woven and woven materials of various kinds, sometimes with special absorbent properties). Consequently, it is very important to ensure that the edge zone is perfectly sealed to prevent fibres from migrating into the wound. Ideally, the shapes should be cut out and the edges sealed in a single operation.

Solution

The ultrasonic cut and seal process provides the ideal basis for solving this demanding task. With the help of hardened, wear-resistant sonotrodes and anvils with appropriate contours, any shapes can be cut out and simultaneously welded all along the edge zone using ultrasonics. In accordance with the size of the parts and the level of force/power required, various pneumatic systems from the USP series are used along with a MAG generator and the TCS5 process controller.

Configuration advantages

The ultrasonic cut and seal process is extremely reliable and cost-effective, and the cost of investment can be recouped in next to no time. Compared to the thermal method of cutting out the shape and welding the edge zone, the ultrasonic method results in a much cleaner cut and an aesthetically appealing sealed edge. The hardened tools can be cost-effectively reground multiple times. The TCS5 process controller offers various monitoring and quality assurance options. With its range of selectable ramps, the MAG generator even allows smooth and gentle power-up and vibration processes for large sonotrodes.



The applications were solved using ultrasonic systems from the USP series, the TCS5 process controller and hardened sonotrodes made from wear-resistant special-purpose steel.