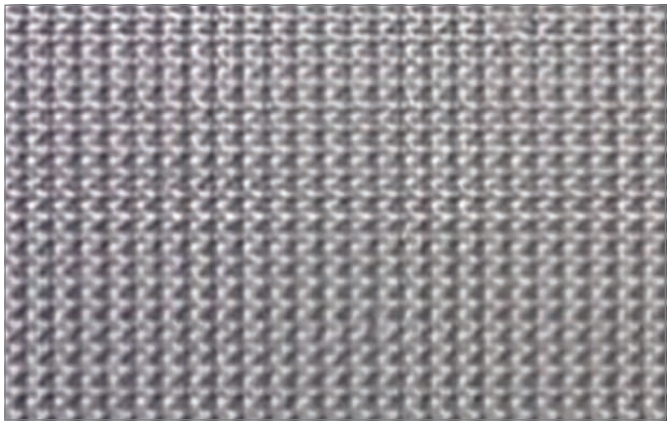
TELSONIC
ULTRASONICS

Application example
Cutting fabric

PLASTIC WELDING | METAL WELDING | CUTTING | CLEANING | SCREENING



The application was solved using 20 kHz components, which were incorporated into a special system: sonotrode with interchangeable knife points, MAG generator and tightly sealed converter.

Task

Fabrics for all kinds of applications are woven as a wide web of material. The fabric then has to be cut to size on an individual basis before undergoing further tailoring. In many applications, it is very important to seal the cut edges to prevent fraying. It is not just straight cuts that have to be made, but all sorts of other shapes as well.

Solution

In contrast to cutting methods that are purely mechanical, ultrasonic cutting generates heat locally, causing the thermoplastic material to melt in the cutting area at the same time and thereby sealing the edge. The 20 kHz ultrasonic components can be easily integrated into x/y systems or 3D robots, making any cutting contours possible.

Configuration advantages

Interchangeable knife points mean that all sorts of materials and shapes can be cut reliably, with simultaneous sealing of the cut edge where applicable. The state-of-the-art MAG ultrasonic generator can be integrated into systems without difficulty. The amplitude is stabilised to within +/–3 % to ensure consistently high cutting quality. The following advantages are equally important: the ability to respond rapidly to alternating resonance and load conditions, and the constant power and amplitude across a wide voltage range of 180 to 260 V. The converter is tightly sealed inside a corrosion-resistant steel housing and can be cooled with air if required.

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