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FIGURE *Sectional view of a universal ultrasonic vibrational system with piezoelectrical ring actuators, heatshrink holder and HSK63 fitting*

VIBRATIONAL SYSTEMS FOR INCREASED PRODUCTIVITY IN MACHINING

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Challenge

The massive tool wear during the machining of fiber composites and hard materials (C/C-SiC) results in a low productivity and high costs. The efficiency of the cutting processes is limited even by long and difficult to extract chips in machining of ductile materials.

Innovation

High performance machining with vibrational assistance by means of tool excitation with ultrasonic vibration

Example of use

Universal and robust vibrational systems such as tool holders for machining

Advantages

Increase of machining quality and productivity

- Process forces reduced by up to 60 percent
- Increase of part quality by avoiding fiber pull-out, delamination and burr formation
- Increase of tool life by approx. 50 percent (CFRP)
- Reduction of machining time by 50 percent (hard materials)
- Avoiding formation of built-up edges
- Optimization of chip removal

Our range of services

- Provision of pilot series prototypes for testing in customized processes
- Adaptation and design of vibrational systems based on individual circumstances and requirements