

## Application example

**Cleaning of exhaust systems**

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING

**Task**

Surface-treated components from all kinds of industries – exhaust systems for the automotive sector, for example – are subject to high cleaning requirements. These requirements must be met in a fully automated, reliable manner with reproducible results. Dirt deposits must not impair the quality of cleaning.

**Solution**

This cleaning task is carried out on an industrial system which is equipped with ultrasonic tube resonators and cleaning generators. It can be used to clean components in a reliable, cost-effective manner before or after a surface treatment.

**Configuration advantages**

Ultrasonic tube resonators can be fitted in cleaning systems in any direction in order to achieve the best cleaning result in every application. The radial radiation characteristics produce an extremely intensive and homogeneous ultrasonic vibration field in the cleaning fluid, enabling the cavitation to clean even hard-to-reach places and interiors perfectly. Due to the cylindrical shape of the ultrasonic tube resonators, no dirt can settle on the radiation surface. This means that the quality of cleaning is not impaired. Further advantages of this cleaning technology include low energy losses thanks to a high efficiency level of > 92 per cent, and the fact that it can be installed in pressure and vacuum containers.



Ultrasonic tube resonators, 20–40 kHz frequency, and ECO<sup>®</sup> module generators, built into a multi-chamber cleaning system.