



 **SYSTEMS,  
COMPONENTS &  
APPLICATION DEVELOPMENT  
FOR ULTRASONIC CLEANING**



## MARTIN WALTER ULTRASCHALLTECHNIK AG - SUCCESSFUL WITH SYSTEM SINCE 1967

Martin Walter Ultraschalltechnik AG is a leading company in cleaning technology, the mixing and separation of liquids, joining technique and special processes in industry and environmental protection using ultrasound.

From specific components to ready for use all-in-one devices we develop and deliver technology which meets your requirement regarding cleaning, separating, mixing and welding.

## APPLICATION DEVELOPMENT

Solutions are our strength, in our in-house laboratory we daily face new challenges from the industry and environmental protection. We design products which set tomorrow's ecological and economical standards.

A team of technicians and engineers is available in service and in development to answer your specific questions and to provide the appropriate solution for you based on their wealth of experience.

We offer the opportunity to carry out experiments in our laboratory with different ultrasonic cleaning equipment. Together, we will define the parameters and select the ultrasonic components for the best possible result.





# COMPONENTS FOR MECHANICAL ENGINEERING



We supply components such as converters, racks, generators, submersible transducers and rod transducers for mechanical engineering.

Our components are used in many different special machines, for example in

- Electroplating
  - Electronics manufacturing
  - Air and filter technology
  - Wastewater treatment
  - Food industry
  - Medical engineering
  - Laboratory technology
  - Mixing and separating methods
- and many more

Use of our components in mechanical engineering



## ECONOMIC SOLUTIONS

Our application-specific developments and the adaptation of existing components lead to economic solutions.

The strength our customers appreciate in us most.

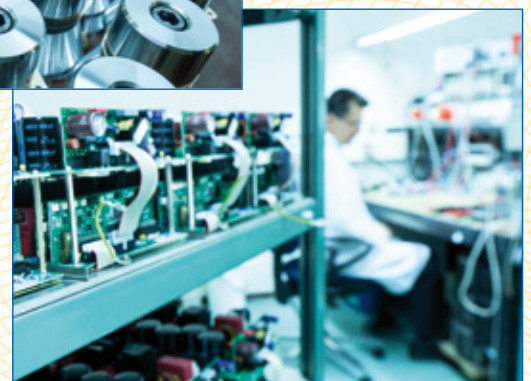
## IN TOP QUALITY

Highest quality means maximum stability of value.

We develop and manufacture system-related components such as the ceramics of ultrasonic elements and due to our manufacturing depth we ensure the highest reliability of your system.



Inventory of standard components





## ULTRASOUND & ULTRASONIC CLEANING

If ultrasonic energy is introduced into a liquid medium, zones of high overpressure and underpressure are generated in the liquid. Microscopic vacuum bubbles are produced in the underpressure phase. These small bubbles implode again in the subsequent overpressure phase. This physical effect is called cavitation.

The implosion of the vacuum bubbles produces a very high pressure, blasting off the dirt from the surfaces to be cleaned without damaging the surface.

In addition, microstreaming is produced that washes away the dissolved dirt from the part to be cleaned.

## PATENTED CERAMICS

The patented ceramics elements are the product of intensive research within the Crest Group.

Ceramics elements have a kind of booster which considerably enhances the mechanical vibration, particularly at higher ultrasonic frequencies.

### Benefits of multi-frequency

- Gentle cleaning
- Combination of energy and depth effect
- Variable combination options of frequencies
- Frequencies may be operated separately or together



## WE, AS YOUR PARTNER, ARE CLOSE TO YOU

Our highly specialized mobile service team will be at your side during installation and commissioning. You can reach our mobile 24-hour service through our service hotline: 0800-MWALTER (0800-6925837).

As a member of the Crest Group, one of the largest specialists in ultrasound technology worldwide, we have access to solutions from cross-industry applications, provide security of investment through quality, manpower and global after-sales service.






 **POWERSONIC®**  
**COMPONENTS FOR MECHANICAL ENGINEERING**



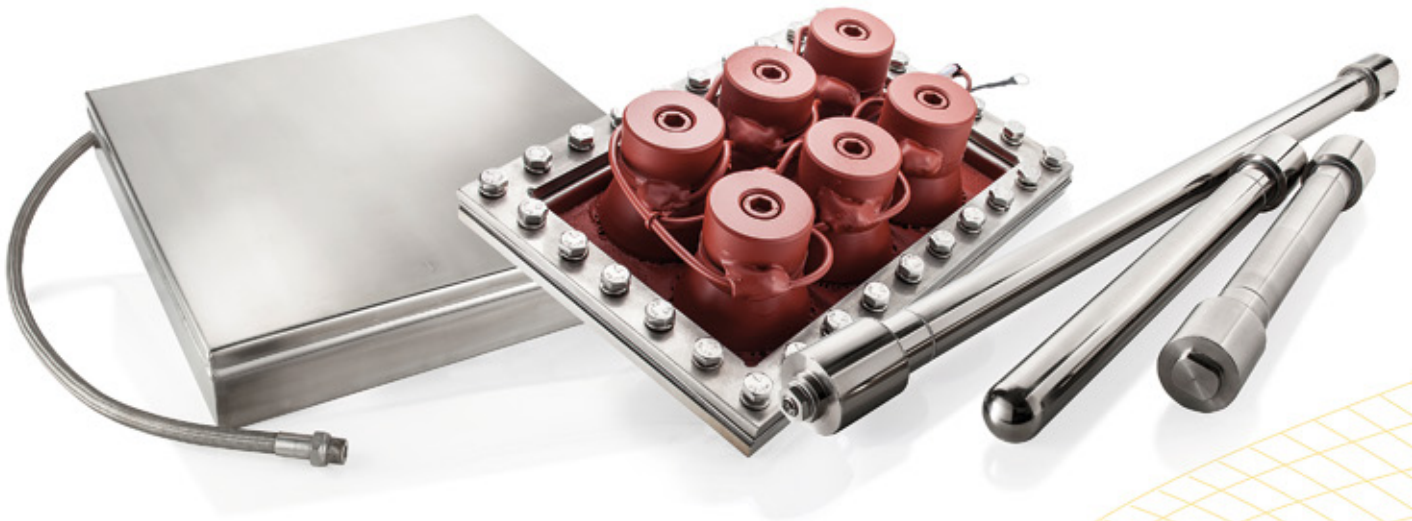
# POWERSONIC® GENERATORS



SMD technology, microprocessor control and robust power electronics for everyday industrial use in a small footprint (19") or for easy integration into existing modules and enclosure types.

SPECIFICATIONS	MOUNTING RAIL GENERATORS	ANALOG SERIES	DIGITAL SERIES
			
Microprocessor-based	✓	-	✓
Automatic impedance and frequency adjustment	✓	✓	✓
Adjustable output power between 40% and 100% of the nominal power of the ultrasonic generator	✓	✓	✓
Automatic constancy of the adjusted output power	✓	✓	✓
Plain text display of operating parameters	-	-	✓
RS232 and optional RS-485 (bus operation of up to 247 generators) interface	✓	-	✓
User-friendly setting options through plain text and structured user menu	-	-	✓
Frequency range from 25 kHz to 1 MHz possible	25, 40, 58, 75, 132, 192 kHz	25, 40, 58, 132 kHz	25, 40, 58, 75, 132, 192, 360, 470 kHz, 1 MHz
Compact design (335 x 165 x 100 mm)	✓	-	-
Prepared for quick and easy installation, e.g. control cabinet	✓	-	-
Latest microprocessor technology	✓	-	✓
19" housing	-	✓	✓
Output for each generator	from 300 W	from 300 W	from 300 W





## PUSHPULL® TRANSDUCER

Rod-shaped high-performance transducer systems with 2 ultrasonic heads for a homogeneous sound field independent of the resonator length.

Available as 25 kHz, 30 kHz and 40 kHz units in the material optimally adapted to your application.

### Universal and flexible in use:

- Ultrasonic cleaning
- Applications in environmental engineering (e.g. sewage sludge treatment)
- Sonochemistry (support of chemical processes)
- Emulsifying and dispersing
- Faster processing

### Benefits:

- Very long lifetime through solid resonator rod
- Extremely high efficiency (> 97%)
- Installation possible in pressure and vacuum vessels
- Dry-run safe

## SINGLEPUSH® TRANSDUCERS

The SinglePush® with one ultrasonic head is the lower-priced version of the PushPull® transducer.

Only one ultrasonic head generates all the ultrasonic power.

## SUBMERSIBLE TRANSDUCERS

Made of high-quality alloyed V4A stainless steel, optionally available in special materials.

Optimal sonication of the tank through specific arrangement of the transducer elements.

- Frequency range from 25 kHz to 1 MHz possible
- Customizable mounting options

## PLATE TRANSDUCERS

The space-saving version of submersible transducers. For maximum use of space, designed for installation in an opening in the container.

Made of high-quality alloyed V4A, available in the frequencies 25 kHz, 40 kHz and up to 192 kHz. Optionally also available in special materials.



# POWERSONIC® WELDING COMPONENTS



## ULTRASONIC WELDING

We offer special high-performance converters and generators for plastic and metal joining.

The welding converters and generators are available in frequencies of 20 kHz, 35 kHz and 40 kHz.

### Technical features:

- Automatic impedance and frequency adjustment
- Adjustable output amplitude between 50% and 100% of the nominal amplitude of the transducer element
- Automatic constancy of the adjusted output amplitude
- Measurement and output of the actually output ultrasonic effective power, thus recording of the energy possible

### Fields of application:

- Plastic and metal welding
- Compacting of copper strands
- Intense sonication in the near field
- Sonochemistry

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