

**SONOTRONIC Nagel GmbH**  
**Linked with success.**  
**Tradition. Progress. Future.**



# SONOTRONIC

A company with tradition and future

**SONOTRONIC. Linked with success. We follow this guiding principle by constantly developing our technologies and products so that we can continue to produce optimum plastic connections. Our corporate history is also associated with success: continuous growth and investment in new technologies ensured that we were able constantly to expand our customer base and at the same time became an important employer in Karlsruhe Technology Region.**

## The beginnings

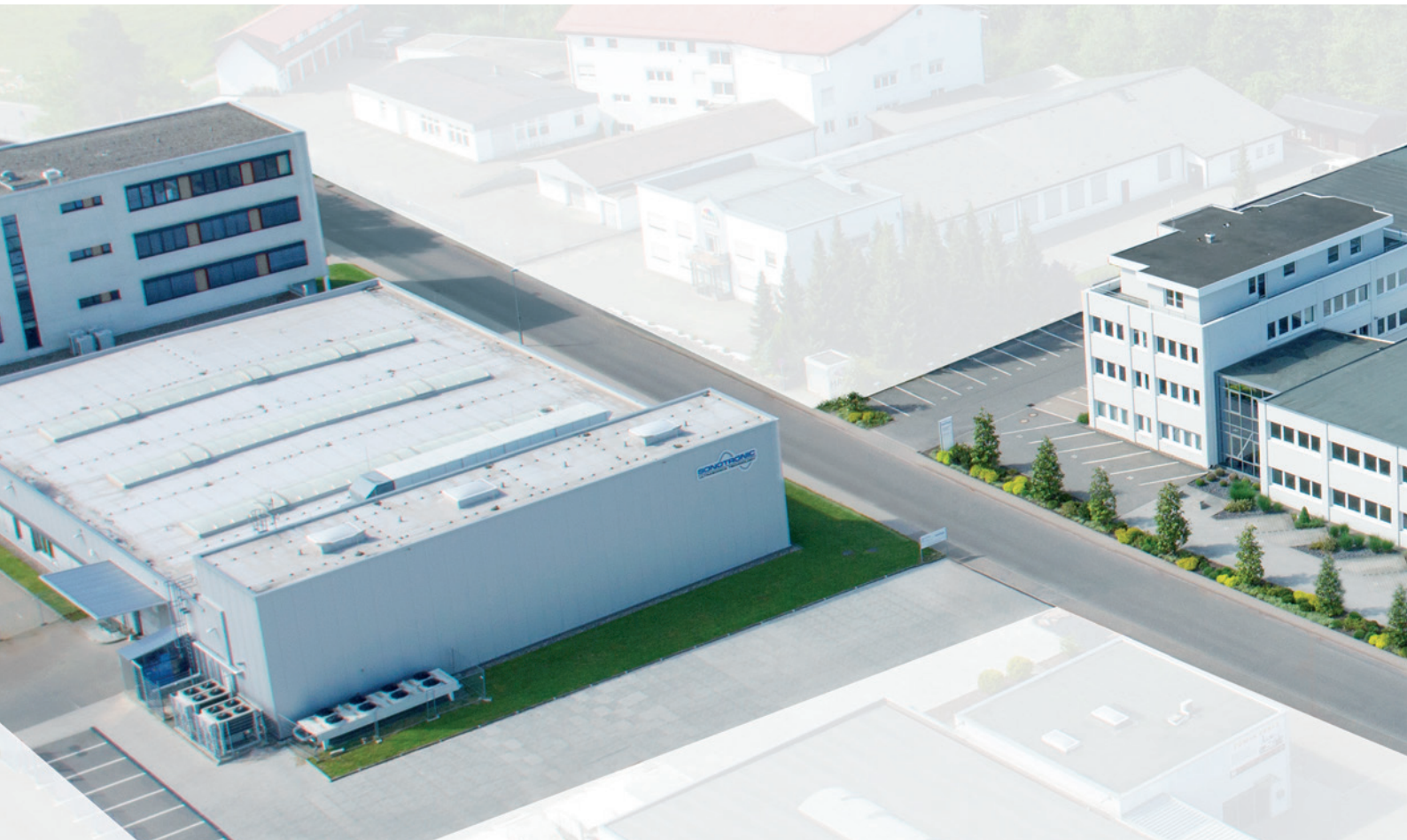
The success history began in 1974, when SONOTRONIC Nagel GmbH was founded by Dieter Nagel. From an idea and the will to be independent, one of the world's leading companies in ultrasonics was to develop over the coming years.

## The first machines

In the beginning, SONOTRONIC produced only standard ultrasonic machines. Production of the first special machine in 1989 laid the foundation for the upturn in the family company, which then followed. In the meantime, the number of special machines produced has grown to well over 2.200.

## Growth

The rate of growth is reflected in the foundation of branch plants and the constantly rising number of employees. In the meantime, the SONOTRONIC Group employs more than 350 people. The company's headquarters has also been extended several times: in Karlsruhe today we have our own development centre and more than 12,500m<sup>2</sup> of production, useful and office space. Our corporate achievements and our products have repeatedly been awarded industry prizes.



# High-Tech from the technology region

## Standard and special machines

We develop high-tech systems and components for joining plastics based on ultrasonic, infrared, hot plate and hot air technologies. A significant aspect of the business is standard and special machines for ultrasonic welding and punching for the automotive, plastics and packaging industries. We have transferred the advantages of ultrasound to other applications as well, for example, for new processes in the textile industry or environmental engineering.

### Our know-how

This versatility, coupled with our experience, reliability and innovative capacity, are the foundations of our success. We have obtained know-how in research, development and production, which sets standards on an international scale. Our customer base is constantly expanding and now includes numerous well-known customers from Germany and abroad, some of whom have been customers for many years.

### Central location

The headquarters of SONOTRONIC is located in Karlsbad near Karlsruhe in one of the largest and most promising technology regions in Germany. Through our branches and agencies at central locations, we are accessible worldwide.

### Your advantage

Benefit from the technical progress, intensive research, the intelligent solutions and the innovative products of SONOTRONIC, so that you can continue to stay active and competitive in the international high-tech market and in industrial sectors, which have a promising future.



# Services

Know-how and state-of-the-art technology

As a manufacturer of standard and special machines for various industries, we offer professional support, starting from the idea through to the launch of your series production. We will exhaust all possibilities in order to find ideal, flexible solutions. Our products are produced on the basis of the tried and tested quality and environmental management standards to DIN EN ISO 9001 and DIN EN ISO 14001. With our skill and experience from more than 45 years in the ultrasonics industry and an efficient team of highly qualified employees, you are in the best hands with SONOTRONIC.

## Project Consulting

We look after you from when you come up with your idea and support you at the highest technical level, employing all our experience. In consultation meetings we examine your project requirements and find solutions for your individual applications. Apart from conventional consultancy regarding application-specific component design and machine concepts, we offer you the tools of “simultaneous engineering” within your product development.

## Service

Through our worldwide service and sales network, we are available for our customers at any time and can react quickly and flexibly to enquiries and requests. Our service staff is to hand to offer practical advice: we provide immediate assistance by telephone and attempt to find solutions in conjunction with the competent departments. If necessary, our experienced service engineers will rectify the machine problems directly at the customer's premises.

## Applications engineering

In our R&D laboratory, we develop new applications for the use of ultrasound and other technologies and continuously improve existing processes. We conduct experiments and customer-specific prototype work on your behalf and advise you until the ideal solution is found.



# Successful together

We find the solution for your applications



## Assembly and commissioning

At the Karlsbad headquarters we produce more than 120 customised special machines every year. We set up the machines at our customers, align them according to instructions and configure them for the production of series parts. We meet the demanding quality requirements of our customers using state-of-the-art technology. We produce the critical components of our machines ourselves in our own production facilities.

## Pattern making

In our in-house pattern making department, we produce the part supports for our special machines. Each support is unique and we produce it with extreme care and precision on the latest CNC machining centres. Precise measurement and adjustment ensures that the supports position the parts perfectly.

## Tool construction

A further guarantee of the quality of our products are the ultrasonic tools. Tool design relies heavily on experience. Over the years, we have acquired special know-how, which enables us to find the correct shape and outline for the sonotrodes for every application. At the same time, we optimize our sonotrodes with the finite element method (FEM). We implement the scientific knowledge gained, such as vibration response, in production.

## Generator and converter production

Generators and converters together form the centre-piece of ultrasonic technology. From development to quality testing, the critical processes are carried out at the company's head office in Karlsbad. Maximum precision and continuous development of these core technologies have top priority in the company. We also pay special attention to the performance and quality of our products. As we manufacture the core technologies of our products ourselves, we are able to be flexible and innovative because we are independent.

# Industry solutions

One technology – many applications

Thanks to the outstanding innovative performance of SONOTRONIC, the company is today active in many sectors of the market. We deploy the technical advantages of ultrasound, compared with many established systems, in various different sectors and are therefore future-proof and at the same time unaffected by economic crises. Our products are used in the following industries:

- Automotive
- Plastics
- Packaging & Food
- Technical Textiles
- Environmental

## Automotive

For the automotive industry we are the market leader in ultrasonic special machine construction. We develop and produce customized machines for joining and punching parts for interior and exterior. Ultrasonic technology is characterized by outstanding features such as short process times, low energy consumption or the reproducibility of welding and punching results. In addition, ultrasound can also be used to process particularly high-quality plastics - as is often the case in the automotive industry - efficiently and extremely gently. If required by the application, we also develop and manufacture special machines with infrared, hot plate or hot air technology for special tasks.

## Plastics

We offer application-specific solutions for joining and separating injection molded and extruded plastic parts using ultrasound. In addition to welding, our ultrasonic technology is also used for punching and cutting of plastics. Especially the gentle process with edge sealing as well as optically appealing cut edges are advantages of ultrasound. In addition, the ultrasonic process offers exact control of the welding or cutting process with high repeatability and precision. Our technology is used in plastics processing industries such as electronics, household, medical technology, automotive engineering, office supplies and sports articles.



# Ultrasound

A fascinating technology applicable in many industries

## Packaging & Food

In the two related fields of Packaging & Food we are your partner for ultrasonic technology. For packaging tasks, we use ultrasonic sealing systems that more than meet the high quality requirements of the packaging industry. The sealing seams are air- and watertight and no adhesives or solvents are required. In the food industry, our ultrasonic cutting systems are used for both very soft and very firm products. Product specific cutting geometries guarantee a precise and pleasing cut and the form stability of the product. In addition, the ultrasonic oscillation means that wear and contamination of the cutting sonotrodes are particularly low.

## Technical Textiles

In textile processing, ultrasonic technology has established itself for intermittent welding, roll seam welding, cutting, punching and embossing. Elastic and non-elastic textile materials, such as those used for corsetry, surgical clothing and sports articles, can be cut, punched, welded or embossed, for example. In addition to continuous welding, the ultrasonic roll seam units are also suitable for simultaneous cutting and welding (cut&seal) of synthetic textiles and non-wovens. Due to the different seam geometries, both continuous welds with different contours and spot welds can be produced.

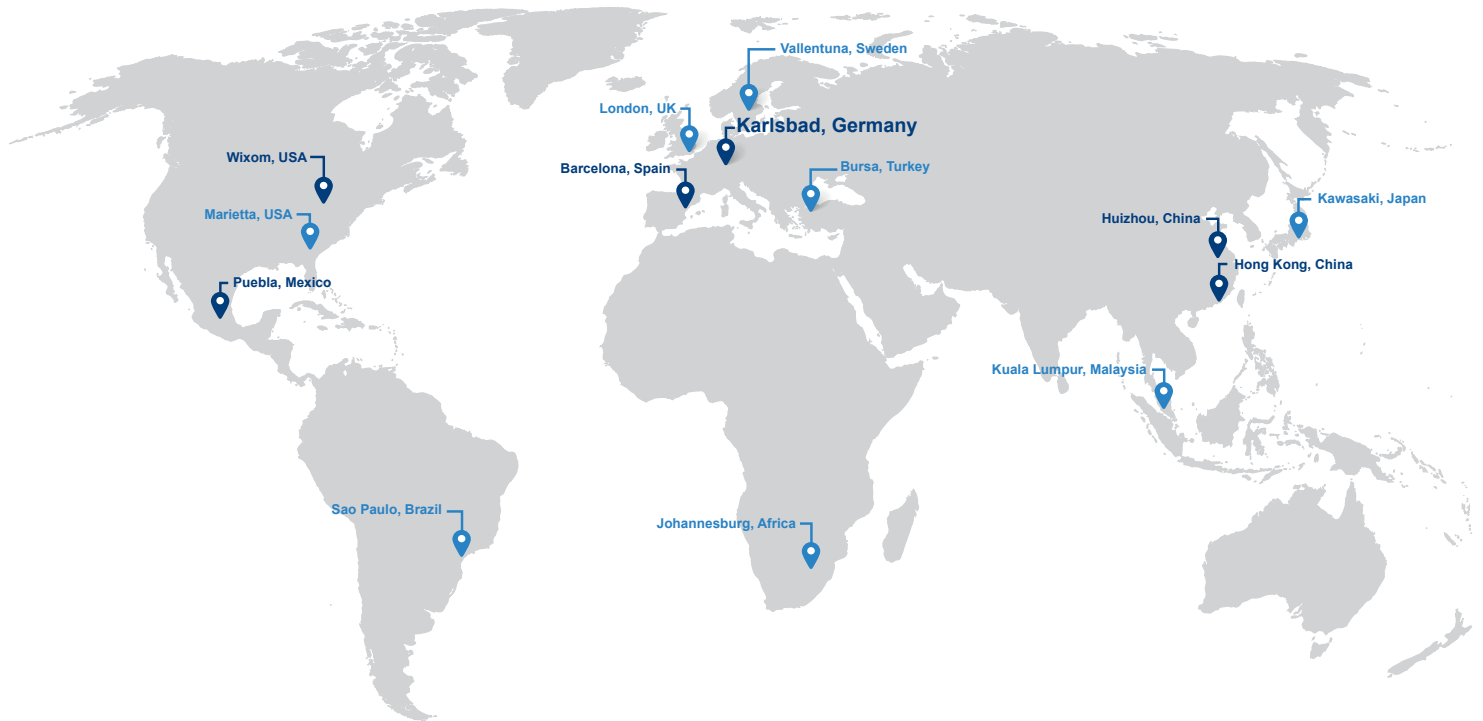
## Environmental

By developing processes and applications for the sonication of biosolids, waste water and water, using ultrasound, we have opened up a large future-proof market – the environmental sector. Today we are already one of the leading producers of ultrasonic systems in this field. The use of our ultrasonic systems considerably increases the efficiency of wastewater treatment and biogas plants. For municipal and industrial plant operators we offer preliminary tests and feasibility studies in this field. Our high-performance ultrasonic systems have been used worldwide for years.



# Locations

Global presence



## Headquarters

- Karlsruhe, Germany

## Branch plants

- Barcelona, Spain
- Wixom, MI, USA
- Hong Kong, China

## Agencies

- Bursa, Turkey
- Huizhou, China
- Johannesburg, South Africa
- Kawasaki, Japan
- Kuala Lumpur, Malaysia
- London, UK
- Marietta, Georgia, USA
- Puebla, Mexico
- Sao Paulo, Brazil
- Vallentuna, Sweden



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Linked with success.

## Industry solutions

- Automotive
- Plastics
- Packaging & Food
- Technical Textiles
- Environmental

## Products

- Special machines
- Standard machines
- Ultrasonic systems
- Ultrasonic components

## Technologies

- Ultrasonic
- Infrared
- Hot plate
- Hot air