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BRUDERER
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Marquardt – an innovation leader.

The mechatronic specialist headquartered in Rietheim-Weilheim specialises in the man-machine interface and applies a touch of refined technology in a whole host of application fields. Marquardt trusts in BRUDERER and the reliability of their automatic stamping presses.

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Marquardt – success via innovation and cutting-edge technology.

The Marquardt Group, headquartered in Rietheim-Weilheim near Tuttlingen in Germany, has made a name for itself internationally with its mechatronic high-tech products for the automotive industry and many other sectors of industry. The family-run business began in 1925 producing simple insert switches for the then nascent electronics industry. It has since gone on courtesy of its products to become an innovation leader in many aspects of daily life.

Anyone opening up their car and starting it without having to put a key in the ignition is probably using Marquardt technology. This product is an integral part of the intelligent keyless ignition systems which have significantly reduced automobile theft. They also include electronic steering locks and even more recent developments including digital keys in BlueID Drive mobile telephony.

Marquardt specialises in the interface between man and machine and applies a touch of refined technology in a whole host of fields of application. This striving for innovation has shaped the history of the company since its very beginning – its founders began developing insert switches for electronic appliances and tools such as upright vacuum cleaners and radio receivers back in 1925 and became pioneers of a new branch of the electronics industry. Nowadays the company is among the leading manufacturers of electromechanical and electronic switches and switching systems. In terms of power tool switches, Marquardt is even a global market leader.

The Group's sensors, switches and controllers are used in a wide variety of sectors: in battery-driven tools and equipment, in building services and household appliances where power-saving, energy efficiency and design are the order of the day, in industrial applications in medical and laboratory technology and also in future-orientated electronic mobility and the 'smart home' sector, involving the networking of domestic appliances.

Less press tool wear – a compelling argument for BRUDERER stamping presses.

Facts & figures about Marquardt

- Established: 1925
- Headquarters: Rietheim-Weilheim
- 14 locations worldwide
- 8,000 employees worldwide
- Including 500 engineers
- Turnover in 2014: > 830 million euros
- 80 % automotive suppliers,
  20 % household appliance industry,
  power tool industry,
  other industrial applications

Boundless innovation.

When Marquardt entered the automotive sector at the end of the 1970s, its spirit of invention was given a new and exciting field in which to work. As early as 1980, the Group developed the first special switches for automotive applications which aroused particular interest among the leading manufacturers in the industry. In 1997, the company began series production of a complex keyless ignition system using electronic keys for the ignition switch, laying down a marker for the automotive sector. Since then, new developments have followed ever more quickly, with some two-thirds of their current product range having been launched in the past five years.

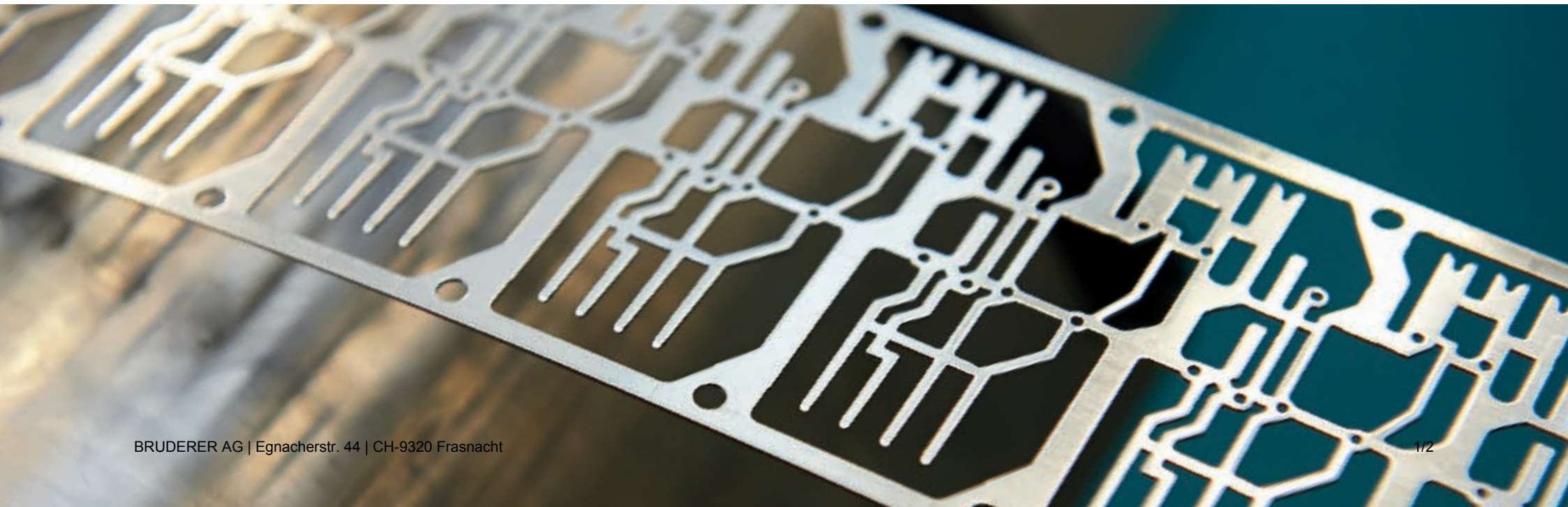
Such a plethora of new ideas can only come about if the spirit of invention is spurred on, and that there is sufficient curiosity to at least test out what seems at first sight to be inconceivable. The Group has 500 engineers, including 150 software developers, working around the world on the innovations of tomorrow. An example of this is the charging station for pedelecs and e-bikes for employees at the company's location in Rietheim which could definitely also be seen as a potential new product with a potentially large market. Another innovative Marquardt development is the touchpad control elements for vehicles which work with tactile feedback and writing and gesture recognition.

Key factors for innovation and success, according to Thomas Heim, head of metal production, are the people who work for Marquardt and the efforts that are made to use them in the right jobs. Everyone can and should contribute to the progress being made as part of their own individual activities. The high degree of vertical integration also ensures that the whole process from creation through to end product complies with Marquardt's high standards. In the plastics manufacturing department which employs some 300 people in Rietheim alone, parts are made out of thermoplastics via an injection moulding process. The production chain also includes metal stamping technology, electroplating, and press tool manufacturing and maintenance. Components mounted and soldered in electronics manufacturing are assembled with a highly-integrated automatic production and assembly system designed in-house in their special machines and product testing department

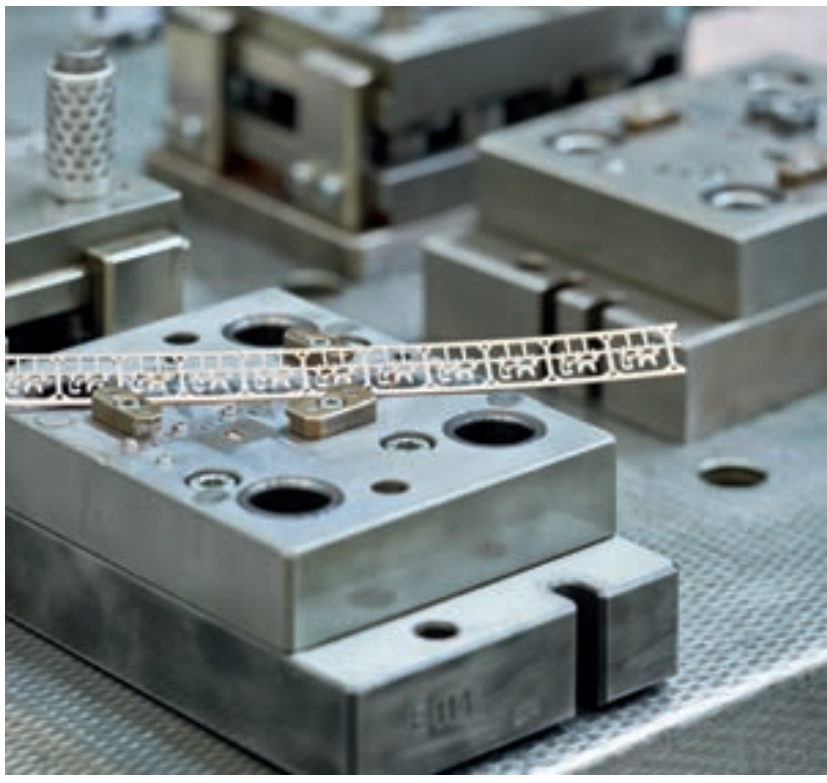
Experts set the tone.

Driven by the quest for new and ever-improved ideas and solutions, Marquardt has over time acquired specific expertise in a variety of different fields, making the company a much sought-after discussion and development partner for clients and suppliers. The Group has its finger on the pulse of what is

Proven and tested quality.



An investment that pays off: one million parts per week for almost 8 years so far.



Parts for the automotive industry.

happening and is significantly influencing future trends. This can clearly be seen in its work with the automotive industry which has come to consider Marquardt as a future-orientated supplier which is incorporated on an ever more regular basis.

Its expertise in electronics and mechanics has helped the company in the development of intelligent mechatronic system solutions. Among other innovations, this has brought about complex and multifunctional control panels for automotive applications and domestic appliances. This is another field where Marquardt has specialised and conquered new markets.

“They can be used flexibly, they are solid, need little maintenance and hardly ever give us any problems.“

Using the same sense of purpose that has seen expertise used for the good of progress, the company is already training the experts of the future. Each year, around 100 junior employees are trained, primarily in technical trades. After initial basic training of 18 months spent in the apprentice workshop, the young professionals are then set to work in the various specialist departments. Once their training is completed, they are then taken on wherever possible within the company, since it is difficult to fill vacancies with the necessary skills.

Dual training is also offered, and not just in Germany but also at the company’s locations in Tunisia and Romania, where Marquardt works with local universities.

BRUDERER – a reliable partner.
In the metal production department, 21 stamping and bending machines produce around four million parts in 40 variations every day. This department is home to the Marquardt Group’s 18 BRUDERER presses, which cover a range of presses from 18 – 80 tonnes and process six tonnes of strip material every day, primarily copper, brass and bronze in strip thicknesses of 0.08 - 2 millimetres. The complex progressive press tools which are almost entirely made in the Group‘s own tool room work at speeds of between 200 – 1,200 strokes per minute, depending on the integrated processes such as in die cutting, bending, riveting, forming and welding.

Heim, who is in charge of a total of 75 employees in the stamping technology, electroplating, tool-making, maintenance, quality assurance and technology departments, is a particular fan of the reliability of the automatic stamping presses from Frasnacht.

“They can be used flexibly, they are solid, need little maintenance and hardly ever give us any problems,” he says. “A BRUDERER machine with a laser welding unit installed in 1996 had a weekly output of over 200,000 parts which were installed in switches for the automotive industry. For almost eight years now we’ve been producing a million parts per week on the same machine, which is still an important part of our automotive work. Investments like these really pay off.“

For his deputy Wolfgang Marquardt, who is responsible for the stamping process technology, the quality of the services provided by BRUDERER is also crucial. “Which manufacturer currently offers replacement parts for machines from past generations?” he asks. “When we need something, the equipment generally arrives within 24 hours. Their service is wonderful, and it’s not as if we need customer services very often since the machines are incredibly reliable.” This is demonstrated by the low levels of wear on the press tools used – an important factor when bearing in mind that around a thousand press tools are used for the production of over 2,000 different parts. ‘Just in time‘ production means that the machines are retooled at least once a shift on average and the tools are maintained in principle after each retooling. Every day, the 30 employees in the stamping technology department work in two and three-shift operations on 40 different assignments, primarily for traditional switch elements which are produced in bulk or on strips. The high standardisation levels of the press tools make for flexible use of the automatic stamping presses.

Uniform processes across all of the locations around the world ensure that there is a consistent production process maintaining very high quality products and services. In terms of quality assurance, Marquardt not only insists on the standardisation of processes, testing and inspection stations in respect of industry norms, but also on having globally networked teams who can exchange experiences and expertise. It is often the little details which go to show how effective such measures can be. Work stations in the stamping room are clean and well organised, and the common aim is clearly defined. As Heim says, “quality is when the customer comes back, not the product“.

The Marquardt Group, which celebrated its 90th anniversary on 28 June 2015 with an open day for the public, has achieved organic growth courtesy of the foresight and vision of its management, and now has over 8,000 employees worldwide and an annual turnover in excess of 830 million euros. It has 14 locations in ten different countries, including production sites in Europe, Africa, Asia and America, and true to its business philosophy, Marquardt is meeting global challenges with global performance – and trusting in globally focused partners like BRUDERER.

“Quality is when the customer comes back, not the product.“ – from left to right Wolfgang Marquardt, stamping process technology, and Thomas Heim, head of metal parts manufacturing.