BRUDERER

PRECISION – SWISS MADE

STAMPER

The magazine for high-performance stamping technology / 2021

THE KRAMSKI GROUP
A family brand with real personality.

FACET MEDICAL USA
Bringing stamping in-house expands horizons for Facet Medical.

PREVIEW BLECHEXPO 2021
Perfect interplay.

Perfect **Match**

Working together makes things so much more efficient. Increase your productivity with the help of original BRUDERER solutions. From stamping presses via feed systems to the new servo axes, all combined with the best in technology from our highly experienced partners.

Andreas Fischer,
CEO

Focus on stamping technology

The economy continues to improve and recover from the conditions imposed upon it by the pandemic. As such, we are particularly pleased to present you with this latest edition of STAMPER, after a one-year break. The magazine is full of exciting reports on selected specialists from the world of stamping and tool technology.

First and foremost there is BRUDERER's presence at Blechexpo 2021. In conjunction with certain partners, we will be presenting a fully equipped stamping line producing round socket contacts with never-before-seen technical equipment. We are sure that you will be fascinated to see stamping and various types of welding performed in the same work process.

The press tool for this remarkable production facility comes from KRAMSKI in Pforzheim, Germany – a tool-maker and manufacturing specialist with a truly global network. We paid them a visit at their ultra-modern and fully equipped main factory, while Kramski also has further hi-tech production and distribution locations in Asia and USA, enabling them to supply renowned companies from the electrical, electronic, medical technology and of course automotive industries with high-value stamped and hybrid parts.

Staying in the medical technology sector, we move on to FACET MEDICAL TECHNOLOGIES, LLC, one of the world's largest producers of lancets and lancing devices. Ever since the company was founded, it has enjoyed a partnership with BRUDERER Machinery in New Jersey. Facet is involved in the series production of highly specialised products such as ultra-high-precision pen needles, and after careful consideration they chose to rely on BRUDERER's high-performance precision stamping technology.

Another example of the popularity and versatility of BRUDERER's stamping technology is illustrated by the report on HOFFMANN GmbH in Pforzheim. This precision stamping and forming specialist has made a name for itself in the market and supplies a number of companies in the automotive, electronics and medical technology sectors. To enjoy greater proximity to their customers, Hoffmann runs other locations in China and Mexico. What sets them apart is that the same organisational structures, processes and technologies are implemented at all production locations around the world. And for a number of years now, Hoffmann has been working exclusively with BRUDERER's high-performance stamping technology.

We also visited another expert in stamping technology and electric motors, based in Sersheim in southern Germany. ERICH GRAU GmbH is an experienced name that manufacturers from around the world turn to for the production of flat stamped parts, in particular using electric strips, cold and slit strips and stainless steel. They pride themselves on having everything under one roof, and have proved to be flexible and reactive when it comes to meeting growing demands and changes within the market.

Overall, it is clear to see that both we and our customers are looking to the future with confidence. As has often been the case, quality products in the capital goods segment are very much sought-after, even in an economic crisis. I sincerely look forward to seeing you in person at the forthcoming Blechexpo 2021 at the end of October and hope that you will enjoy reading this edition.

On a personal note, as you will be able to read a few pages later, Roland Ackermann has taken over responsibility from me for the marketing department and in future will also be taking the reins of STAMPER.

Kind regards, Andreas Fischer

PERFECTLY MATCHED SOLUTIONS.

BRUDERER high-performance stamping presses at Blechexpo 2021.

For a long while, it was uncertain as to whether trade fairs would be allowed to go ahead during the pandemic, and if so – how? Finally though, we were given the good news. The Blechexpo and Schweisstec production-orientated trade fairs at the Stuttgart Landesmesse will be opening their doors from 26–29 October, with "Sheet metalworking on a global scale" being this year's focus. Specialists from all around the world will be showcasing the latest trends and technologies in sheet metalworking and joining. And of course, BRUDERER will be demonstrating its high-performance stamping technology and we look forward to welcoming you to stand 6309 in hall 6.

This will be the 15th Blechexpo and the 9th Schweisstec to be open to the public in the halls of the Landesmesse. This tried-and-tested trade fair duo has long been the traditional platform for presenting detailed and system solutions for complete process chains. A number of sheet metal and metal processing companies and joining technology firms not only provide their own machines, software and services but also comprehensive tailored solutions all under the same roof. Members of the trade will thus be able to discuss detailed questions and potential investments with them on site and get to see clear process-related demonstrations of high-performance machines, tools and equipment, giving them all the information they need to make a concrete decision. After the turbulent

Blechexpo

Blechexpo 2021
International trade fair
for sheet metal working
26.10.–29.10.2021
BRUDERER: Hall 6, stand 6309
www.blechexpo-messe.de

www.bruderer.com/messe/

BLECHEXPO (Stuttgart, Germany)	26.10.–29.10.2021
MSV BRÜNN (Brno, Czech Republic)	08.11.–12.11.2021

times that we have all lived through over recent months, the mood is one of excitement and optimism among exhibitors and trade visitors alike.

BRUDERER is also very much looking forward to finally being able to attend the events once again and to highlight the company's latest developments.

Stamping and laser welding become one within the tool

Visitors to the BRUDERER stand 6309 in hall 6 will be treated to a real highlight. Keeping to the motto 'perfect match', the high-performance precision stamping press specialists will be showcasing a fully equipped punching system based around a BSTA 510-150 stamping press that will be firing out in the order of 500 round socket contacts per minute in production conditions.

The equipment on display will be an illustration of the trend towards ever bigger tool lengths with 50 tonnes of pressing force and press tables of up to 1500 mm. The most fascinating aspect of this full system is the interplay between a wide variety of partners to form a highly efficient overall concept, coordinated and implemented by BRUDERER. The layout begins with a LEICHT Stanzautomation PWD 150 BRM double winder with loop control. Using a BRUDERER two-track servo feed solution consisting of two BRUDERER BSV 75Ds, two different strip materials are then fed into the BRUDERER BSTA 510-150 high-performance stamping machine.

Plenty of processes per stroke

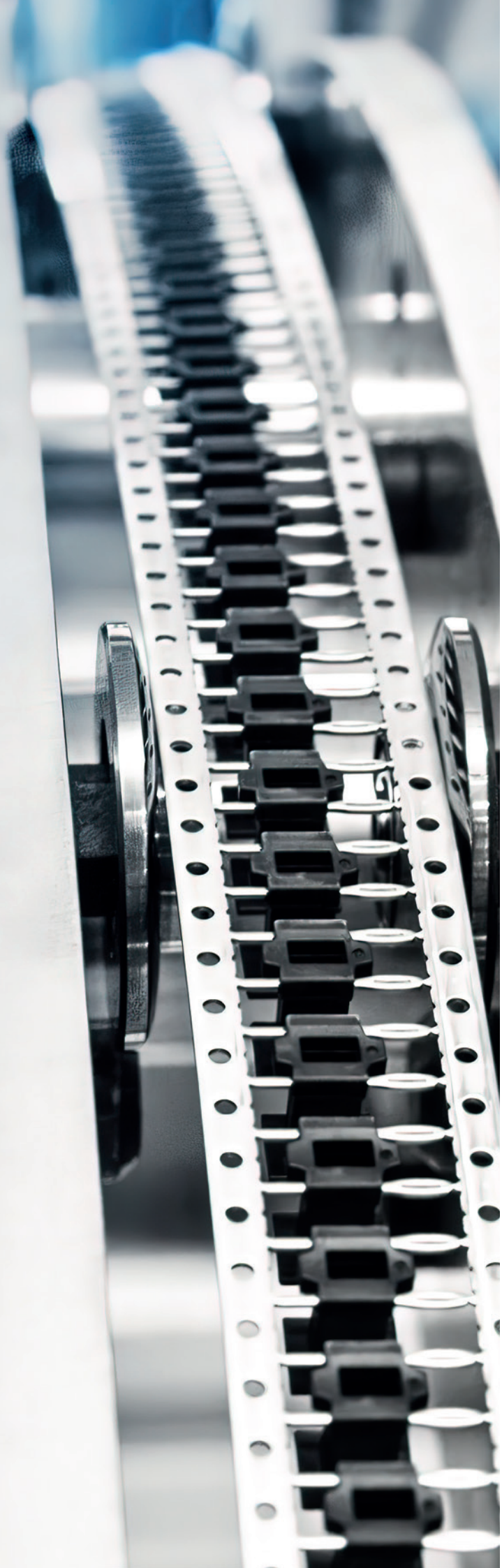
At the heart of the process is a KRAMSKI precision tool that produces round socket contacts. Perhaps the most impressive feature is that the contacts are stamped and linked together at the same time and in the same process by means of laser welding, all at a stroke rate of up to 500 strokes per minute and at a stroke height of 44 mm. The AUXXOS laser application is built directly into the tool with integrated lenses. The laser process adds a ring welding and two 5-mm-long weld beads with each stroke. The equipment is rounded off by a strip guidance system and a LEICHT STANZAUTOMATION quadruple automatic spool winder.

The perfectly matched partners exemplify this year's trade fair motto. They show just how highly specialised manufacturers can perfectly dovetail with one another to complement their skillsets and provide high levels of technical performance capable of providing series production of complex components.

BSTA 510-150 STAMPING LINE IN FACTS AND FIGURES

Stamping press	BSTA 510-150
Servo feed	2x BSV 75D, Two-Track
Feed length	Various
Stamping tool	KRAMSKI GMBH
Stamped part	Round socket contact
Stamped strips	Socket element: Strip material: 50.5 x 0.35 mm CuSn6, nickel-plated, layer thickness 1–3 µm Ni matt, brushed strip Slat: Strip material: 15.5 x 0.15 mm, stainless steel 1.4310
Stroke rate max.	500 1/min
Stroke height	44 mm
Output	500 parts/min
Laser in the tool	AUXXOS GMBH Laser welding: ring welding and 2x5 mm weld beads, AUXXOS laser with lenses in the tool
Pallet winder	LEICHT STANZAUTOMATION GMBH PWD 150 BRM double winder
Pallet spooler	LEICHT STANZAUTOMATION GMBH ASW-104 automatic quadruple spool winder
Oiling	RL AUTOMATION GMBH
Noise-protection cabin	FAHRER AG
Location	BRUDERER AG, hall 6, stand 6309


A FAMILY
BUSINESS
WITH
PERSONALITY
AND BRAND
IDENTITY.



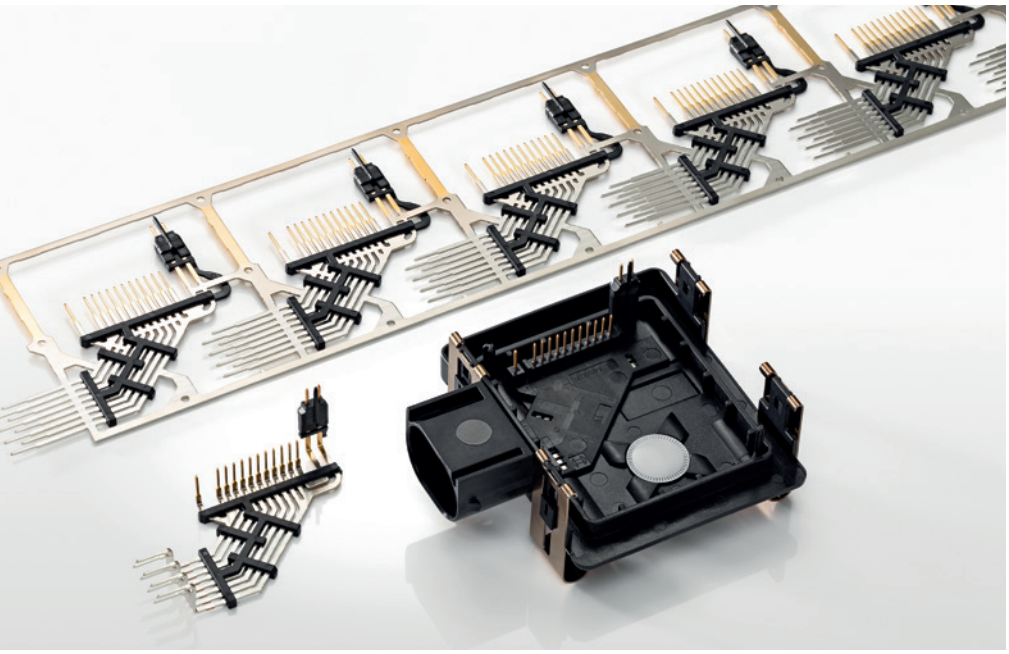
Perfection needs personality, or so the motto of the KRAMSKI family business goes. In addition to that, it is clear that perfection also requires the necessary skills and experience. With all of these qualities and a healthy dose of personality besides, the company – founded in Pforzheim in 1978 – has become an international player in the demanding stamped and hybrid parts sector.

The origins of the company were as unusual as they were promising. In 1978, expert tool-maker and eventual company founder Wiestaw Kramski won first prize in a start-up contest in 'Capital' magazine. The award was the basis for the investment in the first machine and the start of the company's success story. Uncompromising precision was always the focus of the work carried out, and what began with pure tool-making was soon expanded. In the 1990s, the company evolved from being solely a tool manufacturer into one of the first ports of call for complex stamped, injection-moulded and system parts, rapidly accelerating its growth.

The KRAMSKI Group provides a number of industries with highly innovative solutions using a variety of technologies, relying on their committed employees, who have motivation and expertise in equal measure. KRAMSKI currently employees around 700 people in four locations across three continents around the world. Another thing the company has relied on from the beginning is BRUDERER's high-performance precision stamping presses. "The quality and precision of BRUDERER equipment corresponds perfectly to our firm's philosophy," explains former technical manager Jörg Carle who has been COO at KRAMSKI in Pforzheim since 1 June 2021. "This is why we have solely been using BRUDERER solutions for over 40 years when it comes to high-speed presses. Their precision, service life and the resulting economic efficiency always have been and continue to be of great importance to Kramski, in particular for thin strips, very close tolerances and highly complex parts. It means that we can work in margins that we can control, through a combination of our own experience and BRUDERER's technology." BSTAs are currently in operation at all KRAMSKI locations in all sizes and tonnages.

First-class technology is on display throughout KRAMSKI's operations and not just limited to BRUDERER systems. "High-tech freaks fit in here right away," says Sabine Torres-Kramski, joint partner and authorised representative of KRAMSKI, with a smile. "Our apprentice workshop is kitted out with

The KRAMSKI Group develops and produces around three billion demanding stamped and hybrid parts every year across its holistic process chain.



This is the MRR (mid-range-radar) hybrid component used for distance detection.

The stamping shop with various BRUDERER presses.

everything that a budding precision mechanic, process mechanic or mechatronics engineer could possibly want." Some 30 apprentices are currently being trained at the company's Pforzheim premises, and with an incredibly high retention rate, KRAMSKI is making a significant contribution to the development of young people and to tackling the shortage of skills that is a widespread issue.

Ultra-modern technology is just one way in which the company can inspire its employees. The highly active and expansive dynamic can be felt throughout the company. In the four decades since it was founded, the KRAMSKI group has developed production and distribution centres in Asia and the USA, with its first subsidiary opening in 1993 in Sri Lanka. Its showcase factory has won many awards over the years, and currently has 240 employees producing high-precision tools, hybrid parts and components in facilities of around 5,000 m². The North American production location, opened in Florida in 2002, occupies a similar area and manufactures 300 million highly demanding stamped and hybrid parts for an incredibly diverse selection of sectors, including for the automotive, medical, telecommunications and security industries. The most recent subsidiary was opened in 2008 in Vellore, India. It has around 100 employees who manufacture not only for KRAMSKI customers in Europe but also delivers direct to clients in India.

Highly complex metal and plastic hybrid components are a speciality of the company, which produces over three billion of these and other demanding stamped and hybrid parts every year for the automotive, electrical, electronics and telecommunications industries, as well as for the medical technology, solar and finally the consumer goods sectors. In layman's terms, hybrid technology means that components and parts are stamped first of all and then over-moulded with plastic, with KRAMSKI developing the corresponding production tools in-house.

KRAMSKI facilities have their own construction and development departments at all of their locations as well as on-site tool and mould construction. To respect the various form and bearing tolerances, highly-sensitive multi-sensor measuring technology is used. "It's a great deal of work but it is exactly what is required by our ever-more demanding customer base and also by our own quality concepts," Carle underlines. "When our company was founded, it was based on the principle of 'You can negotiate anything with us except for quality' and that has certainly not changed over the past 40 years."

Quality for KRAMSKI is not just in the products themselves but in the company's admirable sense of social responsibility. KRAMSKI supports a wide variety of social, cultural →

sporting organisations and educational facilities at all of its locations and is committed to social issues. This can be seen in the everyday life of the company, for example the weekly running classes run by a professional athlete, the in-house alternative practitioner and osteopath plus contributions to gym and sports rehab memberships. There are also in-house seminars and cooking courses run by well-known dietary experts and balanced meals and drinks in the company's SkyLounge. Little wonder that many employees choose to stay true to the company year-in, year-out.

The company's founder Wiestaw Kramski has a particular affinity for the sport of golf and is a keen player, and the KRAMSKI PUTTER GmbH subsidiary has carved out an excellent reputation for itself with its mass-produced high-precision putters and special application methods.

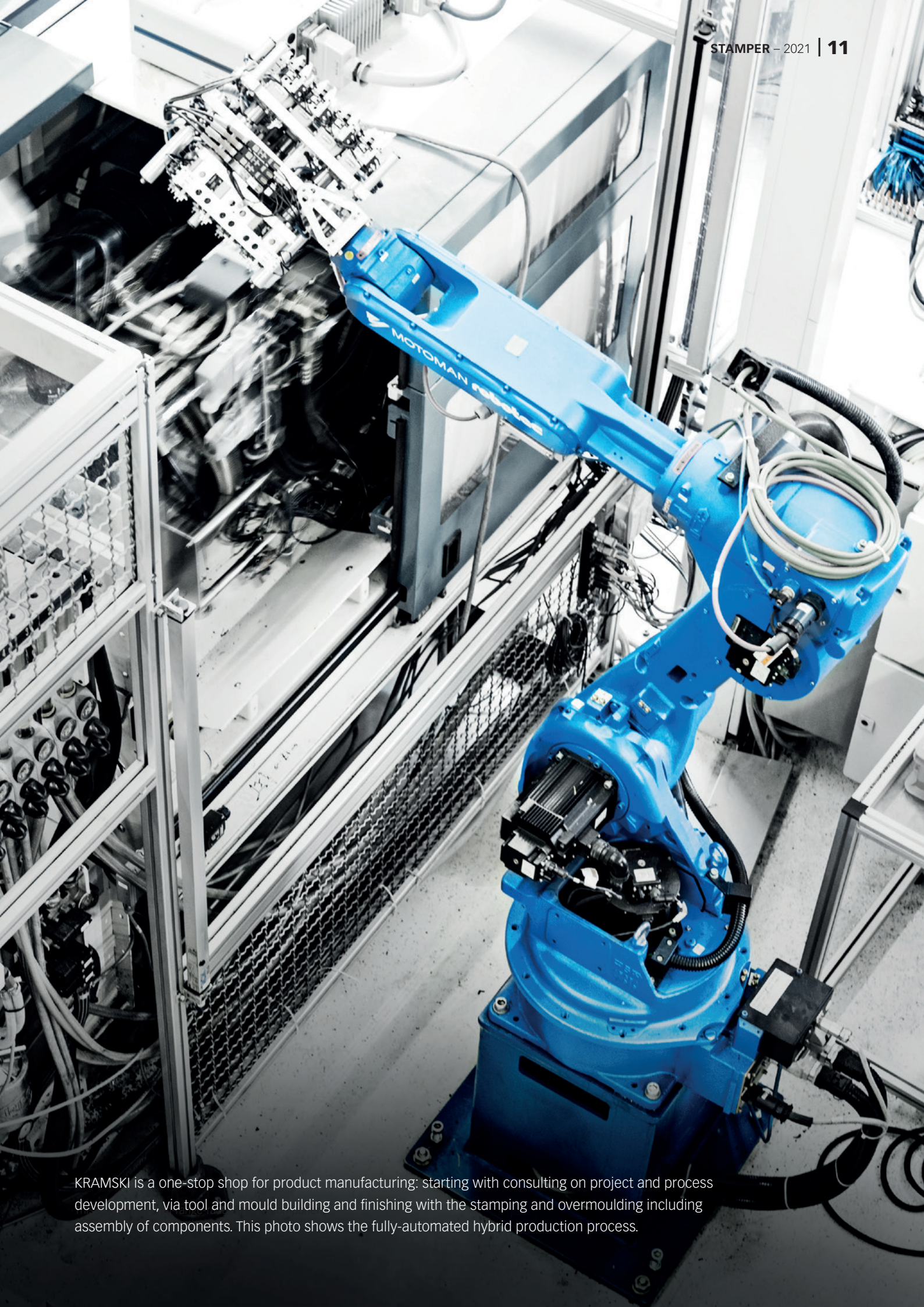
This family-run firm has a further offshoot in the form of telecommunications company Skytron Communications GmbH & Co. KG, which handles broadband expansion for cities and municipalities using hybrid technology (such as fibre optics, directional radio and VDSL) and manages the actual networks.

At Skytron as at all of the other companies within this family-run group, the same basic conditions apply for overall success - namely first-class precision with a healthy dose of personality besides. It has proven to be a successful combination – and a likeable one into the bargain.

High-precision titanium golf putter made by one of the group's subsidiaries, KRAMSKI PUTTER GmbH.

Drawn component with filter. Feeding of two strips: metal filter and raw material for cover plus laser welding process.

KRAMSKI products are used in car manufacturing, the electrical industry, telecommunications and medical technology among other sectors.



KRAMSKI is a one-stop shop for product manufacturing: starting with consulting on project and process development, via tool and mould building and finishing with the stamping and overmoulding including assembly of components. This photo shows the fully-automated hybrid production process.

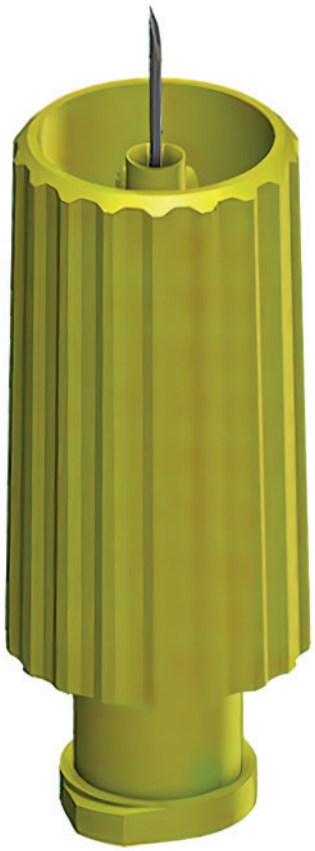
BRINGING STAMPING IN-HOUSE EXPANDS HORIZONS FOR FACET MEDICAL.

Facet Medical Technologies is a medical device company based in Atlanta, GA, serving the global diabetes care, wound care, and drug-delivery marketplaces. **With a 49-year heritage, Facet Medical is proud to be one of the largest providers of lancets and lancing devices in the world. "Our mission is to improve lives by making medical devices that contribute to improved diagnostics and therapy," the company says.**

Early in 2018, in response to a request from a major OEM customer, Facet began investigating what it would take to produce stamped and formed needles in house. After conducting due diligence, the company decided on bringing in stamping, molding, material-handling, and engineering services from Ridgefield, NJ-based BRUDERER Machinery (www.brudereramericas.com). "Our history with advanced stamping technology started with our history with BRUDERER," says Matthew McClure, Facet's director of operations and engineering. The results are pointing the way to a future of significant growth opportunities for the company.

No Ordinary Needles

This was no small project for Facet. Although Facet had extensive experience with high volume automation, vision inspection and micro-insert molding, it involved bringing in disciplines and functions, such as stamping, Facet never had before. And the needles they wanted to produce are no ordinary product. For critical applications in insulin delivery and glucose-level detection, needles (or "sharps" for those in the business) are complex, specialized products. Designed for use in drug-delivery systems ("pen needles") and for pricking the skin for blood samples (lances and lancets), sharps provided by Facet can be chemically etched, precision-beveled, and over-molded with plastic bodies specifically designed to reduce discomfort and enhance performance.



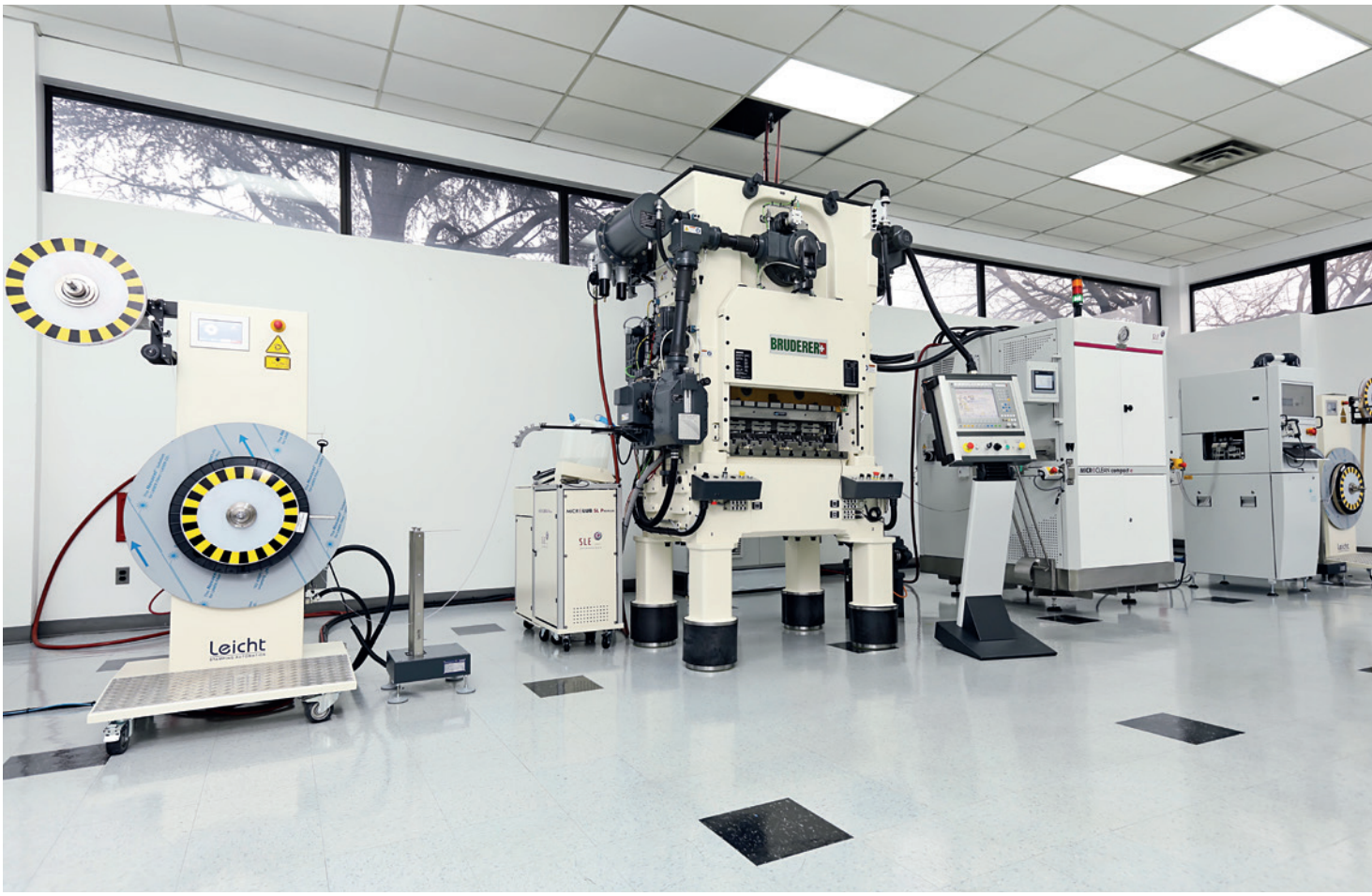
Insert-mold products provided by Facet also feature a variety of sharps with over-molded plastic bodies and patented beveled-edge designs.

Facet required a complete production line and all related disciplines for starting with raw material in and ending with finished product out. "Facet Medical is in my opinion one of the best examples of a BRUDERER turnkey customer," says Alois J. Rupp (AJ), BRUDERER Machinery CEO. "Our team was able to provide Facet a complete production solution to receive raw materials (in this case chemically etched stainless steel and resin) and ship out sharpened, over-molded, cleaned and inspected needles."

It started early in 2018 with a phone call from Mr. Brett Rogers, Facet Medical's technical project manager. He was investigating potential suppliers for the company's turnkey project and had called the general BRUDERER phone line. It so happened that AJ Rupp was in the office and took the call. Rogers clearly outlined what Facet was looking to do and Rupp clearly understood the task at hand. After an extensive review with BRUDERER's chief engineer Sean Tucker, BRUDERER provided Facet a detailed writeup including a proposed line layout as to how the stamping system would work. The integrated molding and inspection systems came later.

Rogers indicated he would need to also evaluate other stamping suppliers and would be back to BRUDERER within due time. "I believe he evaluated two other potential suppliers and later placed the complete order with BRUDERER," Rupp says.

Facet had a number of goals for bringing stamping in house. Primary among them was cost. "We were largely depending on external suppliers," explains Giles Rae, Facet's chief commercial officer. "This affected quality control, meaning we had to verify and validate outside manufacturing processes rather than relying on our own."



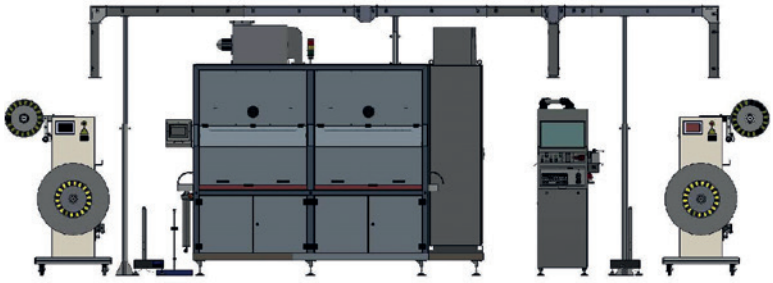
Facet stamping line.

And those processes are not simple and straightforward. As lancing devices are a high-volume business for Facet's OEM customer, component parts come in supplied on a continuous reel. To integrate them into production, assembly and inspection at Facet, the defect rate had to be as low as humanly possible. "We just cannot accept rejects," Rae states.

Entire Ecosystem

Recognizing Facet's need for "absolute repeatability and reliability" on the stamping line, Rupp and the BRUDERER Machinery team recommended a stamping line consisting of decoiling, in-line lubrication, precision stamping, in-line aqueous cleaning, automated inspection, and rewinding. Specifically:

- The BRUDERER/Leicht de-coiler is specially configured for etched material and includes paper take-up and non-contact loop-control system.
- The BRUDERER Microlube inline lubrication system has a fog chamber and vacuum system to maintain air quality in clean room conditions. Excess oil mist can be extracted/separated, filtered, and returned to the process.
- The BRUDERER stamping press and the mechanical feed unit is set up specially for etched material. With an available press force of 280kN, the stamping press is a high-performance mechanical press with an adjustable stroke and speed range of 100 to 2000spm (strokes per minute).
- Following stamping, the BRUDERER Inline aqueous cleaning system provides lubricant and debris-free parts for the subsequent inspection and molding operations.
- Next is a 100% inline inspection system to assure part quality prior to next operation.
- Then a second BRUDERER/Leicht functions as a rewinding system with paper interleaf and loop control. →



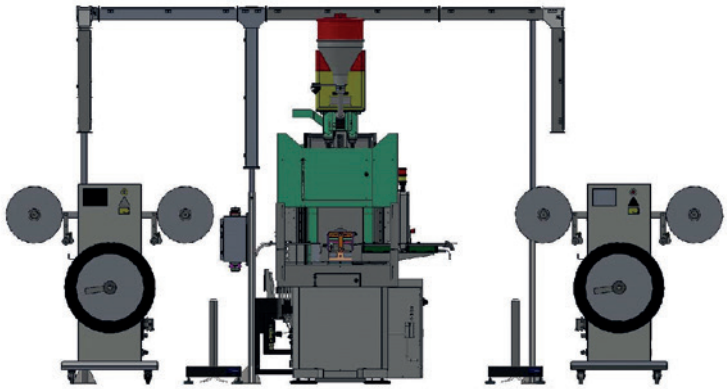
Front view of the Facet final wash line.

In addition to the stamping line, BRUDERER also specified and supplied four molding lines for Facet's growing production process consisting of the following equipment:

- BRUDERER/Leicht powered de-coiler specially configured for pre-stamped material.
- BRUDERER push-pull gripper feed system for sequential feeding of the stamped strip through the molding operation.
- Arburg injection molding machine – (provided by Facet)
- BRUDERER/Leicht powered rewinding system configured for stamped over-molded components including paper interleaf and loop control.

Completing the production system, Facet's final cleaning and inspection line consisted of the following:

a. BRUDERER/Leicht Model powered decoiler.
b. BRUDERER Inline aqueous multi-chamber cleaning system to provide debris-free parts to customer-specified cleanliness specification for final packaging.
c. BRUDERER/Otto inline inspection system to assure part quality at a rate of approximately 1300 parts per minute prior to final packaging and shipment to end user.
d. BRUDERER/Leicht model powered rewinding system for finished parts.



Front view of a Facet Medical molding line. BRUDERER supplied four.

BRUDERER provided and oversaw controls, interlocks, power distribution, and all additional aspects required. The result is more than a network of process knowledge and key players, it's an entire production ecosystem for Facet's continuing benefit.

FAT and SAT

Bringing production in house with state-of-the-art stamping, molding, cleaning, and inspection equipment, particularly for Facet who did not have these disciplines before, requires more than engineering expertise, it requires expert project management. Clear and well-written specifications are crucial for both BRUDERER and Facet. Incomplete or nebulous specifications on either side can result in contentious phone calls and tense meetings.

Fortunately, BRUDERER has a well-established track record with turnkey, multi-equipment projects. "Throughout installation, training, and startup, BRUDERER was wholly integrated not only with our team but also with managing all the suppliers," Rogers says.

Good project management documentation covers:

- **Functional requirement specifications**
  assuring the system integrator provides the understanding of the system the customer desires, expressed in general terms.
- **Scope of work**
  Here the system integrator expresses understanding of who does what during the execution of the contract.
- **Detailed design specifications**
  the system integrator then creates documentation to support the work required, including equipment drawings, such as schematics, enclosures, pipe schedules, I/O lists, HMI screen prints and report formats, and guiding the customer and subcontractors toward complete installation.

- **Factory acceptance test (FAT)**
  testing the programmed system prior to delivery.
- **Site acceptance test (SAT)**
  FAT performed after delivery, at the end user's location.

"The entire engagement from covering BRUDERER's past experience with stamping lines producing sharps through to our FAT and SAT was great throughout," Rogers explains. "What we received in addition to the equipment was a valuable network – an entire ecosystem of stamping, strip handling, molding, cleaning, and inspection expertise," adds McClure.

What It All Means

At the time of this writing, Facet's production line, servicing a large medical OEM, is growing very quickly. "Production is up 60% quarter over quarter and our customer is very happy with the quality," says director of operations Matthew McClure. "We're in the midst of moving forward on new commercial opportunities and planning how to expand and grow line capacity." Building on the experience gained this specialized needle project and the turn-key solution developed with BRUDERER Machinery, Facet has since successfully bid and won an additional large-scale program. "From the beginning Facet saw this as an opportunity to push the boundaries of our knowledge base and expand into an adjacent manufacturing technology," Rogers says. "Find the right partner and equipment solution was critical to realizing that vision."

BRUDERER Machinery CEO AJ Rupp emphasizes the open communication and the clear goal-setting on the part of Facet Medical, calling them an "ideal customer." The Facet team, for their part, responds with recognizing BRUDERER's technology and project coordination skill with "how much care and expertise was baked into this project from the start, with the result being a great deal of help for us in not worrying about things."

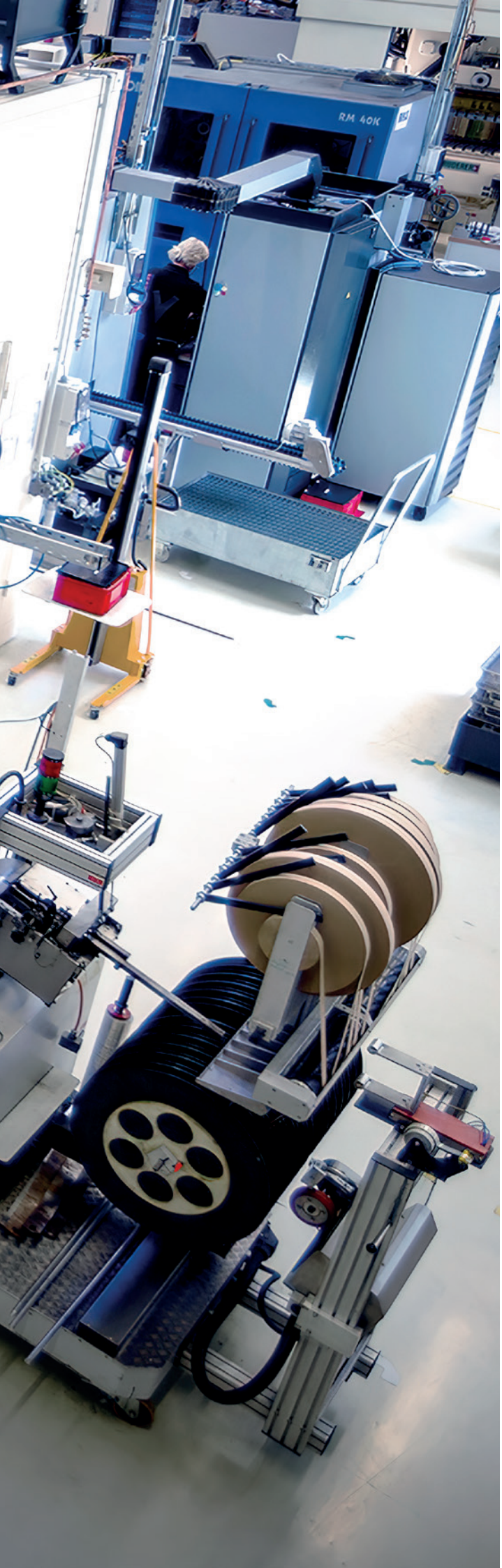
The Facet/BRUDERER experience proves that establishing a successful production operation is possible not only through finding the right technology provider, it's about an ongoing relationship based on open communication, active listening, mutual respect, caring, and trust. This is how the benefits of modern production technology come to life.

"What we received in addition to the equipment was a valuable network – an entire ecosystem of stamping, strip handling, molding, cleaning, and inspection expertise."

Matthew McClure, Director Operations and Engineering
FACET MEDICAL TECHNOLOGIES

QUALITY ON A GLOBAL SCALE.

www.hoffmann-technic.com



Stamping technology is not only one of the oldest machining methods in metal forming, it is also one of the most popular on the market. High precision, cost-efficiency and speed make it one of the cornerstones of the process chain for many sectors. The south-German town of Pforzheim, known for its gold and jewellery industry, is a veritable mecca for high-performance and precision stamping technology. It is also home to Hoffmann GmbH, who have made a name for themselves over the years with their consistent quality and growth strategy.

The company was founded in 1978 and is now being run by the second generation of the family. It has established itself as the first port of call for the development and construction of complex solutions in the fields of precision stamping and bending technology for automotive, electronic and medical technology. The keys to the company's success are a clear customer focus, the ultimate in flexibility and of course quality. 2014 saw Hoffmann Precision Metal Changzhou open in China, with another subsidiary coming in 2019, namely Hoffmann Precision Metal in Queretaro, Mexico. "To be closer to the customer on a local level and to tap into new markets, we knew that we had to take this step towards globalisation," says Hoffmann CEO Patrik Rieder. "In China, we produce primarily for the Asian market. Close exchanges with our customers around the world give both sides the opportunity to develop ideas together, turn them into high-performance tools and ensure that production is both sustainable and economic."

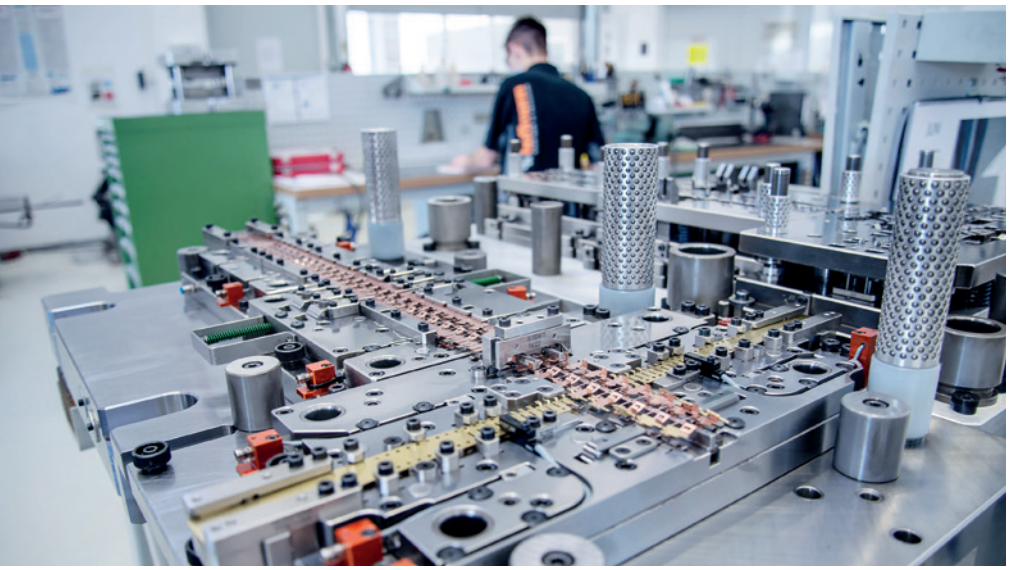
Rieder sees the company's highly motivated employees, significant levels of flexibility and intensive dialogues with customers as the keys to Hoffmann's international success. With over 200 employees, the company is able to develop and manufacture highly complex components and assemblies for renowned customers worldwide in the automotive, electronic, mobile and medical technology industries.

Another part of the secret to Hoffmann's success are the globally standardised processes and organisational structures. This is exemplified by the various certifications that the company has achieved, including IATF 16949, ISO 14001 and ISO 9001 across all of its locations. To guarantee this quality within the production process, Hoffmann has always chosen to rely on BRUDERER's ultra-modern high-performance precision stamping presses. From the BSTA 250 through to the BSTA 810 and the various BRUDERER feed systems, BRUDERER's high-performance precision stamping presses perfectly provide the necessary diversity at the various locations. "We get the production parts from the automotive, electronic, medical technology, solar technology, household devices and other sectors into the right shape," Rieder explains. "We don't manufacture any standard products, since virtually all the requests and tasks we get tend to include the brief to create something totally new." This requires enormous flexibility, particularly in terms of tool compatibility across different machines and locations. "This is why we know full well how it makes sense to have BRUDERER high-performance precision stamping presses at all Hoffmann subsidiaries. It means that tools that we develop here in Pforzheim can be tested on our machine and sent to Mexico or China where production can begin seamlessly. Using data in conjunction with Industry 4.0 to anticipate and prevent potential quality incidents is another crux of our work. Using methods that involve artificial intelligence will play an ever-increasing role in the future, and here Hoffmann is working with customers and research institutes to further develop thematic content."

At Hoffmann, in-house tool-making is exclusively used for the company's own production. The range on offer is a large one, from progressive tools with integrated and

„We know full well how it makes sense to have BRUDERER high-performance precision stamping presses at all Hoffmann subsidiaries."

Patrik Rieder, Managing Director HOFFMANN GMBH



High-performance stamping-tools for sustainable and economical production.

down-streamed fully-automated assembly processes to Bihler tools and even moulding dies and tools for prototype construction. The basis of all tool concepts is low required levels of maintenance, minimum downtimes, maximum output and the ultimate in process reliability. “Demands in terms of precision and efficiency have gone through the roof in recent years,” Rieder says, “and to meet them, we need first-class product quality safeguarded by vision control systems and reliable supply chain processes.”

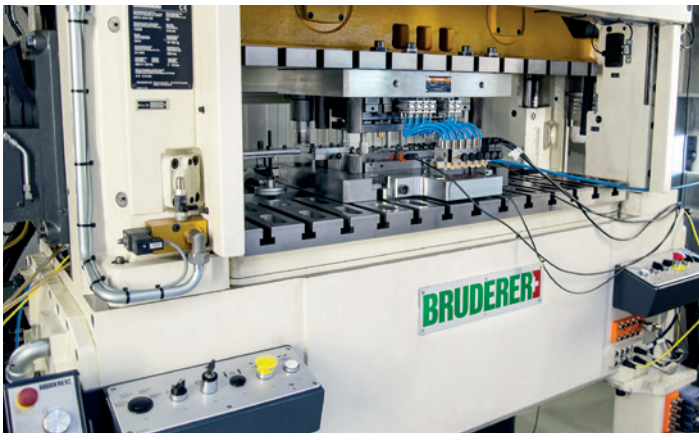
E-mobility is also moving more sharply into focus at Hoffmann as regards development and production. “The hype surrounding e-mobility is obviously something that we are not oblivious to. We are actively shaping transformation and increasingly becoming an important player in this sector,” the CEO explains. “The main thing that we are benefiting from here is the number of fields of application of e-mobility. The market for new, ever smaller high-performance electric motors is growing apace. As one of the global suppliers, we produce components on a large scale for the next generation of batteries and motors for the world market leader in e-bikes.

Alongside that, as a partner we develop and produce insertion zones, or press-fit applications. This market has enormous potential, and the same applies to components for building up the new 5G mobile standard."

With growing requirements in terms of new techniques and technologies comes of course an increasing need for qualified employees. “We’re on the lookout all the time," says Rieder, who always keeps his focus on the strategic overall direction of Hoffmann whenever he is assessing potential. "We establish very clearly which products and markets are a priority for us. Breaking into a market can occur at a very early stage via strategic development partnerships with our customers.”

The automotive industry is responsible for the lion’s share of production, and Hoffmann is primarily delivering tailored solutions for a variety of sensors and electronics applications. This ranges from components and parts for parking sensors to solutions for pedestrian impact protection and airbag components through to window and seat adjustment. "The market is constantly growing," says Rieder confidently, "which is why we are also concentrating our perspectives 100% on stamping as our core technology, increasingly in conjunction with extended processing steps such as inline welding, packaging and assembly elements. We’re staying true to our roots and leaving techniques like plastic injection moulding to the specialists in this area.”

Hoffmann is certainly remaining true to its motto of ‘expertise in precision’. And with their faith firmly in BRUDERER’s high-performance precision stamping presses, who are we to disagree?



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VARIETY AND FLEXIBILITY THE SECRET TO SUCCESS.

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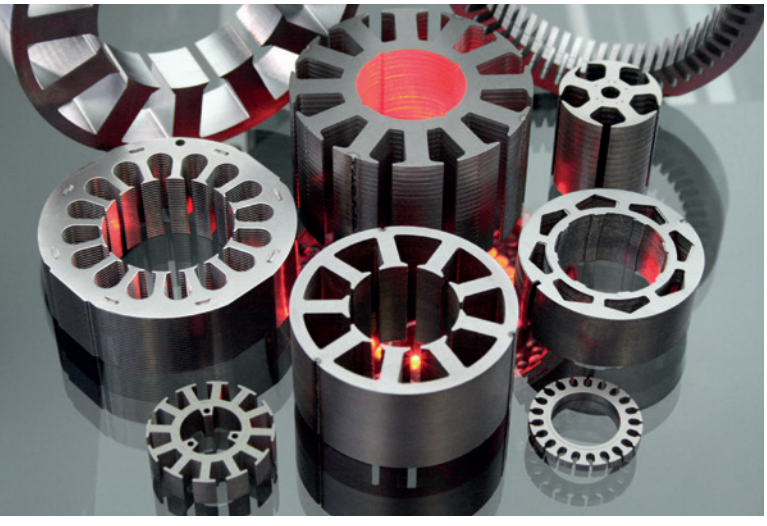
Electric motors have become an integral part of our daily lives, with applications ranging from small computer fans via servo motors in cars and washing machines through to industrial motors with megawatts of performance. They are simple to build, deliver high performance and have an excellent energy footprint. We visited a specialist manufacturer of basic components for electric motors – Erich Grau GmbH in Sersheim.

Electric motors are now found in virtually every modern technical product. In today's cars alone there are around 40 different ones, from the starter to the windscreen wipers, the seat adjusters and the electric windows, not to mention the brushed and brushless direct current motors. They are always manufactured in the same way. The performance-generating components are made of individual lamination stacks called the rotor and the stator, made out of electrical steel strips comprising steel with silicon content and with high magnetic properties. The sheet metal parts are assembled by stacking the individual stamped parts in the tool. During the stamping process, studs are often added which combine to form a fixed unit with the gaps in the previously stamped sheets. Another option is the use of bonding varnish. Electrical steel sheets coated with bonding varnish are stamped, stacked and then baked under heat and pressure. This process seals the individual laminations together strongly and also insulates them from one another.

Erich Grau GmbH in Sersheim is a genuine specialist in the production of flat stamped parts, in particular using electrical steel or cold rolled and slit strips as well as stainless steel. For over 60 years now, the company – which has grown to around 150 employees – has been producing transformer sheets, ready-core laminations, strip and electric motor sheets and even complete lamination stacks. "We manufacture stator and rotor sheets for almost all types of electric motors based on customer drawings," says proprietor Günther Grau, running through the comprehensive range of products. "AC and three-phase motors, direct current, internal and external rotors, linear motors and generators, all as ready-to-use lamination stacks, regardless of whether they are riveted, welded, stamped and stacked, or baked. Furthermore, we also produce laser-cut and wire-eroded special sheets for sample and prototype construction and limited series. As you can see, we very much like to think of ourselves as having everything under one roof."



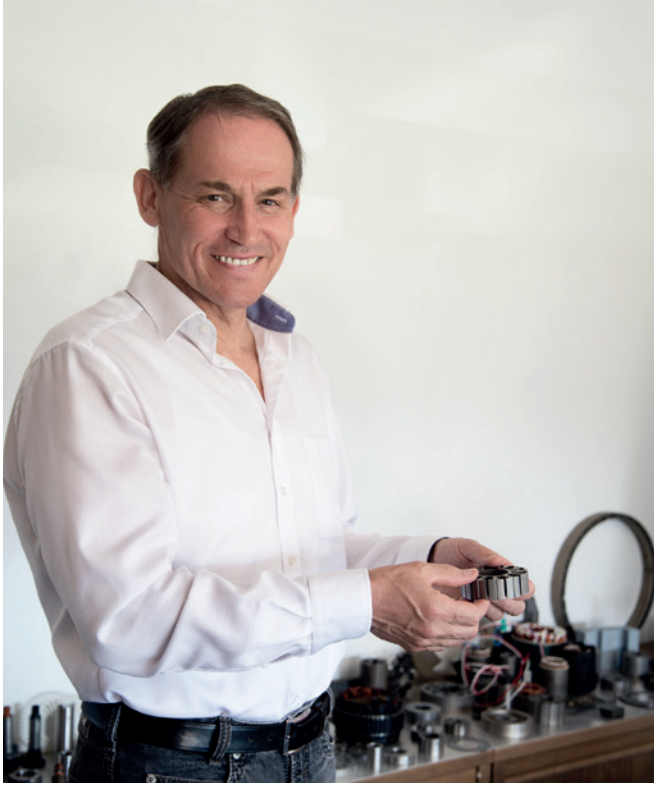
Motor packages: stacked, laser-welded and bonded.

Grau is convinced that this comprehensive offer is one of the main strengths of Erich Grau GmbH, pointing out that "there are no long and complicated decision-making processes with us! Our customers have come to appreciate the genuine agility and flexibility of Erich Grau, whether it be for simple items or technically very demanding parts."

Depending on the task, Erich Grau GmbH uses various different techniques, and Grau himself is a trained technician who is proud of his own stamping presses. "They obviously can't hold a candle to a BRUDERER high-performance precision stamping press but we do carry out the simpler tasks on our own machines. For more demanding manufactured parts, we turn to our BRUDERER BSTAs."

Those machines are certainly put to good use, with the demands in terms of the efficiency of electrical devices and consequently of electric motors leading to increasingly lighter solutions which in turn mean thinner sheets. "The thinner the sheets, the lower the eddy-current losses at high frequencies," Grau explains. "That increases the efficiency of the motor, but at the same time, it means that more sheets are required for the same construction height, and that also raises production capacity."

The demand for light and thus efficient motors is considerable, and the order books at Erich Grau GmbH are correspondingly well filled. The main concern for the company, and indeed for all those in the same branch, is the overall lack of raw materials. After the pandemic-induced shutdown, the

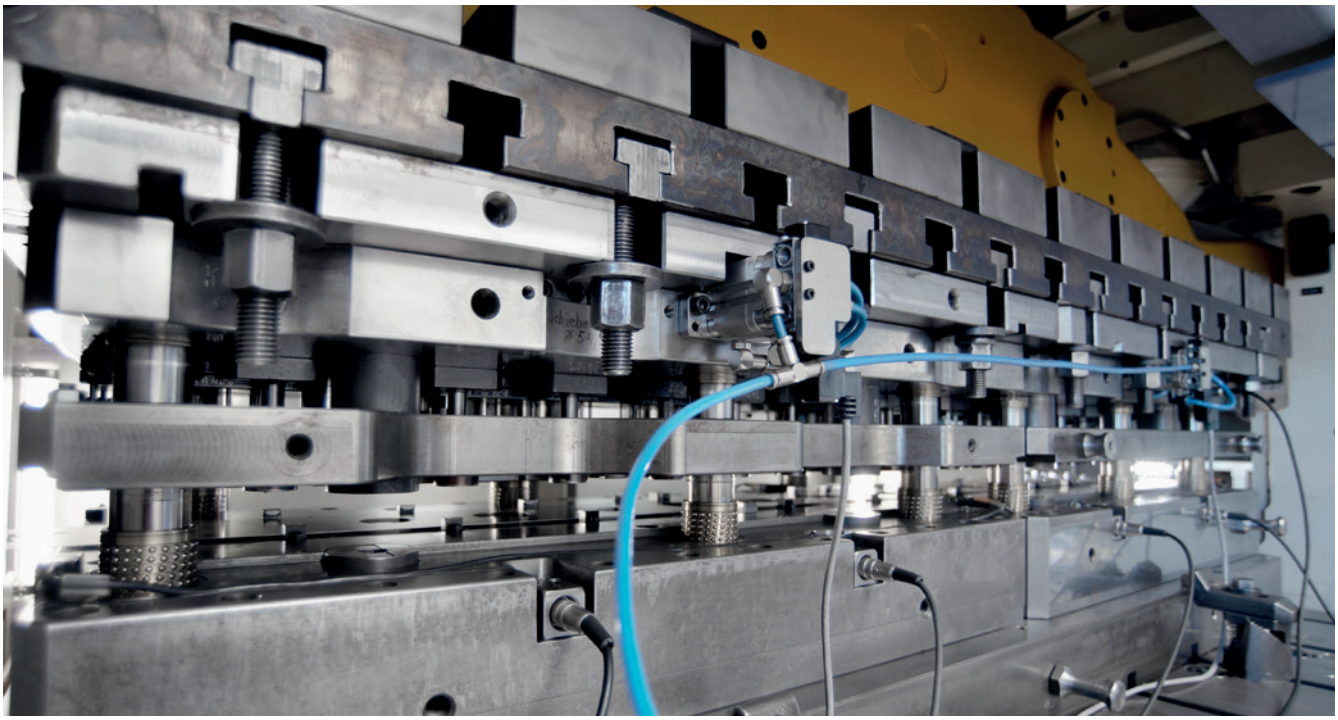


Günther Grau,
Managing partner, Erich Grau GmbH.

manufacturing sector is now once again going full steam ahead, but steel production is currently failing to keep pace, affecting delivery times and prices (as of mid-2021). “After the COVID-19 crisis, the price of a tonne of steel went through the roof,” says Grau, with a tonne of hot strip recently costing more than it had since 2017 as demand is simply outstripping supply. “Our flexibility has enabled us to absorb some of this huge price rise, but our customers are feeling the pinch too. With additional costs of more than 50% for materials alone, we can’t stem the flow all on our own.”

Nevertheless, Grau feels that his company and its product portfolio are well set up for the future, and as such there is considerable expansion work going on at the firm’s own site. “We need to extend both our administration and our production areas. Things have started to become a little cramped of late.” This should come as no surprise when you consider that Erich Grau GmbH now has its own tool-making department with some 40 employees, the tools being used exclusively for in-house production. „It perfectly reflects our ‘everything under one roof’ philosophy," says Grau.

When the new facilities are ready to be used next year, the stamping capacity will also be increased, and Grau is sure that more BRUDERER BSTAs will be brought in for that very purpose.



Know how and experience in modern stamping technology.

NEW ARRIVALS

to the Management Team at BRUDERER

From left to right: Andreas Fischer, Reto Bruderer, Markus Edelmann, Adrian Bruderer, René Lüchinger, Laszlo Jud und Roland Ackermann.

New blood and fresh impulses are always critical for well-established companies, which is why we are delighted to welcome a number of new yet very experienced members of management on board, namely Roland Ackermann, Tobias Feierabend, Laszlo Jud and René Lüchinger. We are sure that they will help to drive the firm forward in all sorts of ways.

Roland Ackermann

BSc in Mechanical Engineering
Executive MBE

Joined: 1 January 2021
Function: Marketing and Regional Sales Manager
As of 1 January 2022, Vice President Sales & Marketing and Member of the Executive Board
Responsibility: Sales, marketing and subsidiaries

Tobias Feierabend

Business Economist

Joined: 3 August 2020
Function: Manager Sales Administration
Responsibility: Order procurement, transportation and logistics

Laszlo Jud

BSc in Mechanical Engineering
Master of Business Administration

Joined: 1 March 2021
Function: Vice President Technology
Member of the Executive Board
Responsibility: Research and development, engineering and automation

René Lüchinger

Industrial engineer
Executive MBA FHO

Joined: 1 April 2019
Function: Vice President Production
Member of the Executive Board
Responsibility: Purchasing, production and assembly

BRUDERER

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