

STAMPER 1/15

The magazine for high-performance stamping technology



The latest from BRUDERER on show at the Blechexpo.

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Marquardt – an innovation leader

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Thomas Engineering Company: big things in small packages.

The US-based Thomas Engineering Company is a big international player when it comes to stamping small and miniature parts. They deliver high-quality precision parts in the closest of tolerances to customers around the world in a timely fashion, and BRUDERER plays a role in this success story.

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EDITORIAL

**Let's innovate.**

Reflecting on what was said in the editorial of STAMPER back in the autumn of 2014, the Year of the Horse has certainly proved to be a year marked by dynamism and changes which put our flexibility and openness to the test in many ways.

When the Swiss National Bank discontinued its fixed minimum exchange rate policy for the Swiss Franc against the Euro, this has greatly affected the mainly export-oriented economy of our country and as a result, we find ourselves facing new challenges. In such a situation, the first step is of course to optimise the cost structure as far as possible. However, BRUDERER is convinced that product innovation is just as important for the long-term success of our company.

A good example of this is the BSTA 410-110 high-performance stamping press which will be unveiled at Blechexpo in Stuttgart from November 3 – 6, 2015. This model fits neatly between the BSTA 280 and the BSTA 510 and combines their most important performance characteristics. Also on our stand, we will be offering our customers a sneak preview of a further innovation: a special edition of the BSTA 200-60 which will be in operation using a progressive tool by Fritz Stepper GmbH & Co. KG. This press, which operates in an ultra-high-speed range, demonstrates the future of stamping whilst at the same time shows what the cooperation of two long-term partners can achieve.

Our customers around the globe are ultimately the beneficiaries of these innovative forces. They too must be innovative and constantly improve their processes and services in order to maintain or increase their competitive edge, which means that we as their suppliers must give them a helping hand with better and more efficient solutions.

We frequently come across innovative capability in our customers. One example of this is the German company Marquardt GmbH. With its pioneering spirit and state-of-the-art technology, it has made a name for itself in the automotive industry as a driver for innovation. Another is the MSA Group headquartered in the Lombardy region of Italy, which through foresight in its investment policy keeps itself at the forefront of the market. Innovation is also one of the cornerstones of Thomas Engineering Company. The American company based in Minneapolis specialises in stamping micro-miniature and ultra-high-precision parts and has been producing these since 1965 on BRUDERER presses.

The next innovation window is at Blechexpo in Stuttgart from 3rd to 6th November 2015. Visit us on our stand 7209 in hall 7 – there will be plenty to see, we look forward to welcoming you!

Andreas Fischer, CEO

Imprint:

Publisher: BRUDERER AG, CH-9320 Frasnacht
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Project: BRUDERER AG, CH-9320 Frasnacht, Kieweg und Freiermuth Werbeagentur GmbH
Texts: Claudia Gravino (GRAVINO)
Translation: Andrew Lilley, Grazia Malberti (Interbrian S.R.L.), Isabelle Raper, Freeman Huang BRUDERER MACHINERY (SUZHOU Co., LTD.)
Graphics/Layout: Kieweg und Freiermuth Werbeagentur GmbH
Photography: p. 1: Hans & Jerry Gross Fotostudio AG, Thomas Engineering Company; p. 2/3: Hans & Jerry Gross Fotostudio AG; p. 4/5: Hans & Jerry Gross Fotostudio AG; p. 6: Thomas Engineering Company; p. 7: Jens Ellensohn Fotografie; p. 8: BRUDERER

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BRUDERER presents the

**WORLD
FIRST
BSTA 410-110**

At this year's Blechexpo trade fair in Stuttgart, BRUDERER presents their new BSTA 410-110 high-performance stamping press. This model combines the core advantages of the BSTA 280 and BSTA 510 and thus fills the gap in the BSTA product range. In cooperation with the innovative press tool maker Fritz Stepper & Co. KG, BRUDERER also gives a glimpse of the future of high-speed stamping with a special high-speed version of the BSTA 200-60 HS.

The sheet metal working industry flocks to Blechexpo in Stuttgart from 3rd to 6th November 2015 to keep up-to-date with the latest developments and trends in the industry. BRUDERER exhibits their new BSTA 410-110 stamping press in hall 7 and, in cooperation with the innovative press tool maker from Pforzheim, shows once again what can be achieved when BRUDERER machines are paired with Stepper's high-performance press tools.

BSTA 410-110: powerful & dependable.

The BRUDERER BSTA 410-110 is an attractively priced high-performance stamping press which combines the high dynamics of the BSTA 280 and the performance characteristics of the BSTA 510. This is the first time since the discontinuation of the 300 and 400 series in the 1980s and 1990s that the Swiss stamping press manufacturer offers a machine which is in the popular 40 tonne press force range. This latest addition to the series will be unveiled at Blechexpo 2015.

The BSTA 410-110 has the same main drive, brake, fly wheel and clutch as the well-proven BSTA 280 combined with the larger tool loading area of 1,100 mm, resulting in excellent dynamics and a correspondingly higher stroke speed of 1,600 spm. In short: a well-conceived technical solution with fully coordinated interfaces.

The renowned concept is rounded off by the perfectly synchronised BRUDERER feed technology. In its standard version, the BSTA 410-110 is equipped with a BBV 191 roller feed unit, a remake of the former BBV 190 with vertical cardan shaft output. As optional attachments, various servo feeds from the BRUDERER range or the BZV 61 gripper feed unit are available. Furthermore, the BSTA 410-110 is also suitable for applications with laser technology.

Stepper and BRUDERER: the Formula 1 team of stamping.

The press tool maker Fritz Stepper GmbH & Co. KG is the choice for high-precision, high-volume manufacturing of electronic connectors and contacts. The Pforzheim-based company is also a loyal and long-term partner of BRUDERER. Not only do they use the Swiss-made high-performance stamping presses in their own production in order to achieve the desired high precision, but also they often put the new BRUDERER models through their paces before they are released for worldwide sale.

Over the years a strong partnership has thus been created in which both partners spur each other on to achieve ever greater heights of performance and excellence. One example of this was on display at the BRUDERER Open House exhibition in 2012. A BSTA 280-80, equipped with a Stepper 7-out stamping die with carbon holder, produced parts for smart phone components at a staggering speed of 233 parts per second. This equates to an output of 100,000 parts in just seven and a half minutes.

Facts and figures on the Stepper high-performance combined stamping tool

- 7-stage progressive stamping tool
- > 16,000 parts per minute
- Stamped parts: board-to-board connectors
 - Strip material: CuZn37
 - Strip thickness: 0.25 mm
 - Strip width: 17.50 mm
 - Stroke height: 6 mm
 - Feed length: 8.89 mm

all new BSTA 410-110 at Blechexpo 2015.



BRUDERER at trade shows 2015/2016



| | |
|-------------------------------------|---------------------|
| BLECHEXPO (Germany) | 03.11. – 06.11.2015 |
| FABTECH (USA) | 09.11. – 12.11.2015 |
| METALEX (Thailand) | 18.11. – 21.11.2015 |
| MANUFACTURING INDONESIA (Indonesia) | 02.12. – 05.12.2015 |
| IMTEX Forming (India) | 21.01. – 26.01.2016 |
| Southern Manufacturing (UK) | 09.02. – 11.02.2016 |
| MACH (UK) | 11.04. – 15.04.2016 |
| SIMTOS (Korea) | 13.04. – 17.04.2016 |
| Stanztec (Germany) | 21.06. – 23.06.2016 |

Stepper press tools are the creme de la creme in the stamping world. In order for them to achieve their full potential, Michael Stepper, the Managing Director of the company, relies on BRUDERER as a guarantor of the highest precision: "BRUDERER stamping presses form the basis for Stepper press tools and enable them to deliver the highest precision. Partnered together, they offer an unrivalled press tool service life."

The 'team' can be seen in action at the BRUDERER stand in hall 7 at Blechexpo. More than 16,000 board-to-board connectors per minute can be stamped at a speed of over 2,300 spm on the BSTA 200-60 HS using a 7-stage Stepper stamping tool. An impressive performance. "This is ultra-high-speed stamping at its best," enthuses Andreas Fischer, CEO of BRUDERER. "Akin to the 'concept car' in the automotive industry, we have built this special edition of the BSTA 200-60 in order to showcase the extraordinary performance of Stepper tools. It is a fully functional vision of the future, allowing both companies to demonstrate what could be possible in tomorrow's world of stamping. With this concept machine

"This is ultra-high-speed stamping at its best."

and the new BSTA 410-110, two exciting exhibits are awaiting visitors to our stand at this year's Blechexpo. The BRUDERER stand will be a hive of activity!"

BRUDERER: hall 7, stand 7209
 BSTA 200-60 HS in operation with tool an peripherals.
www.blechexpo-messe.de/en/blechexpo

Facts and figures on the BSTA 410-110

- Press force: 410 kN
- Speed: 100 – 1,600 spm
- Tool loading area: 1,100 mm
- Adjustable stroke (standard): 8 – 47 mm
- Adjustable stroke (option): 16 – 64 mm
- Shut height: 206 – 298 mm
- Strip inlet width: max. 250 mm
- Drive power of main motor: 28 kW
- Weight: approx. 8,700 kg



BSTA 200-60 HS

- Press force: 200 kN
- Speed: 100 – 2,500 spm
- Tool loading area: 600 mm
- Adjustable stroke (semi-automatic): 4 – 34 mm
- Strip feed unit: BRUDERER BSV 170 servo feed unit

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.

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

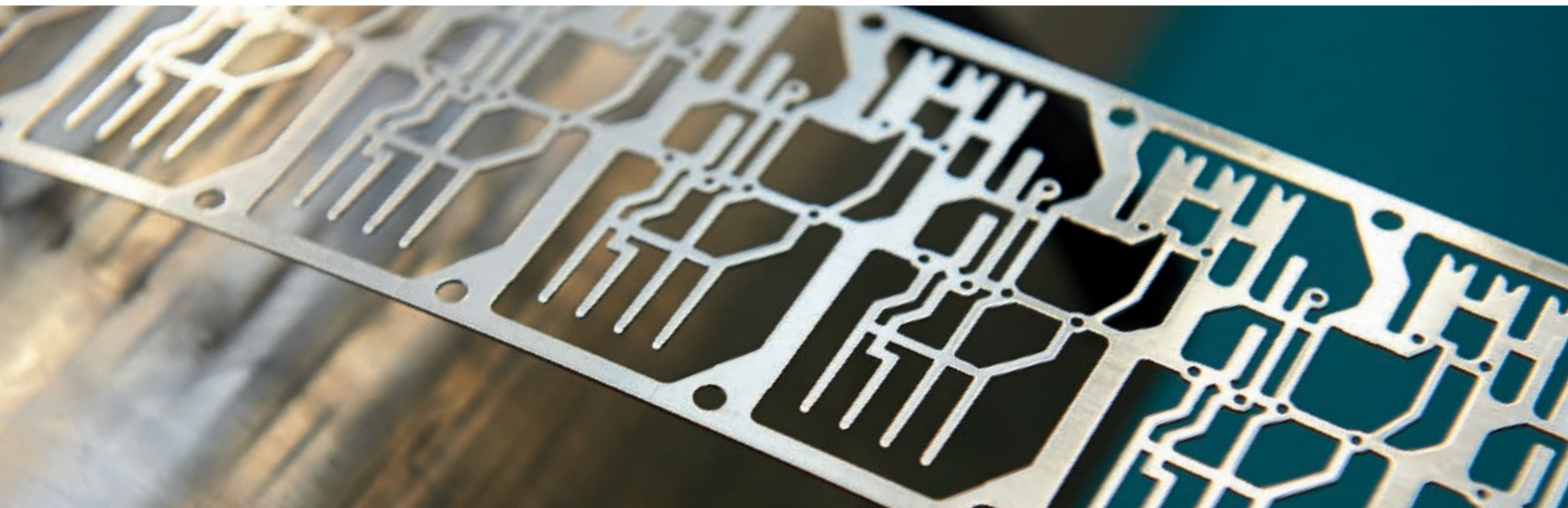
Experts set the tone.

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

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

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.

Small stamped parts make for big success.

The Thomas Engineering Company of Brooklyn Park, Minnesota has established itself as a specialist manufacturer of small and miniature precision stamped parts from sheet metal. Over the years, they have consistently used their vast expertise and experience to do the impossible for their customers.

When tool-maker William J. Thomas founded the company in 1962, his main aim was to develop and manufacture tools with which he could stamp the most complex miniature and micro-miniature as well as medium-sized metal parts with ultra-high precision. Over 50 years on, Thomas Engineering Company has become one of the leading innovators, developers and manufacturers in this field of stamping for customers all around the world. Indeed the Brooklyn Park company has made a name for itself when it comes to the timely delivery of large quantities of the smallest parts stamped to the closest of tolerances.

Creating solutions.

The more difficult or seemingly impossible a task is, the more the 50 employees are in their element. The comprehensive range of Thomas Engineering Company services includes Rapid Prototyping – a department specialised in developing and executing test series of up to 5,000 stamped parts in just five to ten working days. “Customers come with their ideas, sometimes in the form of simple hand-drawn sketches, sometimes with CAD data,” explains managing director Tim Aberwald. “Our specialised prototyping team then gets to work looking for the most suitable manufacturing solution. The smallest parts are made from a strip thickness of less than 0.03 mm and have to respect the finest tolerances. The Thomas Engineering Company has extensive experience in this sector, making it a preferred partner for the rapid implementation of precision parts for customers developing new and innovative products. This means that all stakeholders on both sides are always at the cutting edge of technology. In recent years, one of the most demanding projects saw us combine three parts in one – a task we managed with aplomb.”

Global reputation.

The main market for the stamped parts made by the Thomas Engineering Company is firms in the electronics, medical, telecommunications and automotive sectors in Asia, Europe, North and South America.

In the electronics field, where equipment is becoming ever smaller and at the same time more functional and with greater levels of performance, demands for precision and electronic connectors are increasing. These parts are stamped at up to 1,500 strokes per minute and sent by the million every month all around the world.

In the medical sector, where high-quality material is machined at the closest of tolerances, parts stamped by the Thomas Engineering Company are used in surgical blades and in monitoring equipment to cite two examples.

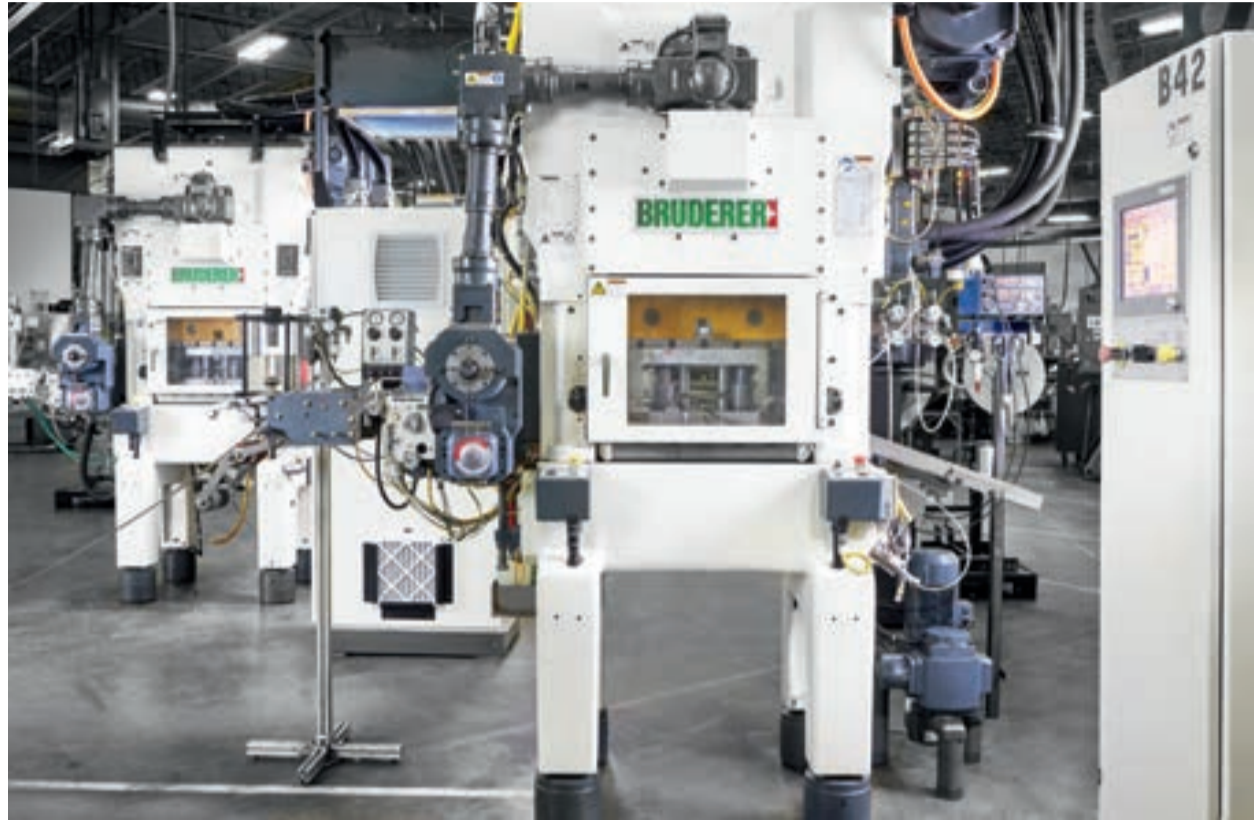
For jobs from the automotive industry, the BRUDERER high-performance automatic stamping presses are put to the test: in the space of a couple of minutes they can be stamping out 60,000 parts per minute with speeds of up to 1,500 strokes. The parts are then used for example in electronic components, ignitions and fuel supply for vehicles. Creative solutions are often the order of the day, and thanks to its CAD-software supported tool production, the Thomas Engineering Company can deliver millions of high-quality parts every month to the required close tolerances at incredibly competitive costs.

The demands of customers in the telecommunications sector are totally different yet equally as exacting. The parts stamped in Brooklyn Park are used in the cell-phone and satellite sectors as well as for customers in the computer and aviation industry.

Good tools make for top-class parts.

The company buildings occupy some 8,000 square metres, with around 3,000 square metres for tool manufacturing, construction and prototype construction alone, producing several million stamped parts every month. The firm’s 50 employees work in a highly modern environment, and are well trained and highly experienced.

Tool manufacturing sees a team of 12 developing and manufacturing cutting-edge stamping tools for in-house production. Ultra-modern CAD software means that development and lead times can be kept to a minimum. One of the specialities



Precise and reliable: BRUDERER high-performance automatic stamping presses.

of the Thomas Engineering Company is the development and manufacturing of high-speed carbide composite tools. The company also trains its own staff in tool manufacturing, with tool-makers having a four-year apprenticeship and die-setters two years of training.

Top-quality stamping the core competency.

The 30 BRUDERER high-performance automatic stamping presses are used in the production process to manufacture millions of parts every month. The first of these, a BSTA 30, dates back to 1965 while the most recent – a BSTA 510-125 – was delivered in September 2015 and is used to stamp high-precision parts for the medical sector. “Once again, the main reason here for choosing BRUDERER was the precision, the reliability and the long tool life that we can achieve with the automatic stamping presses,” says managing director Tim Aberwald.

The company also offers clients other elements in the manufacturing process, including spot welding, riveting, plating and finishing, deburring and heat treating of stamped parts as well as part and sub-assembly and a variety of packaging solutions. In this way, each customer gets products which correspond to the specific requirements of their industry and their equipment.

Quality at the closest tolerances.

Thomas Engineering Company relies on Total Quality Management for quality assurance at every step of the stamping process, beginning with first-class raw materials and going right through to the finished product. The company is ISO 9001:2008-certified, and uses programmable non-contact visual control systems in the production process to reduce testing times, eliminate errors, provide statistical data in real time and constantly monitor quality.

“We specialise in the stamping of miniature, micro and ultra-thin as well as medium-sized parts,” explains CEO Su Lien. “We can process virtually every metal and any alloy, including aluminium, brass, bronze, copper, Inconel alloys, steel, stainless steel and titanium, with 22 – 75 tonnes of pressing force and speeds of up to 1,500 strokes per minute. We can maintain tolerances of 0.005 mm at strip widths of up to 0.025 mm whilst maintaining high standards of quality, thanks to our BRUDERER automatic stamping presses used in combination with our own tools. This obviously means that we can stamp in a highly cost-efficient way, and on the rare occasions when we need a replacement part, it arrives in no time at all. All of these reasons make BRUDERER a top-class partner for us.”

Like other innovative players in the stamping field, the Thomas Engineering Company sees the trend towards ever smaller and more complex parts persisting in the future. “We have highly-qualified, specialised and very experienced staff,” states CEO Su Lien. “If we continue to combine our competencies with those of innovative and reliable partners like BRUDERER, we will be able to overcome any future challenges with similar success.”



M.S. Ambrogio: a success story spanning 60 years.



Mario Sangalli, owner and CEO of the MSA Group.

Mario Sangalli has been at the helm of the Italian company M.S. Ambrogio S. p. A. since the early 1990s and with great success. The visionary entrepreneur has a clear understanding of market developments and, anticipating future demand, is prepared to invest in new, state-of-the-art equipment – such as the latest acquisition of four BRUDERER high-performance stamping presses.

When asked which project triggered the decision for this sizeable investment, Mario Sangalli chuckles. Rather than waiting to be approached by customers with a specific requirement, he uses his keen instinct and clear vision to anticipate future trends. And thus he was spot on when he purchased the first two BSTA 810-145 stamping presses with BSV 300 servo feed units which were fully utilised in 3-shift-operation shortly after their commissioning.

With the same instinct and foresight, his father Aurelio Sangalli, the acting president of the MSA group, laid the foundations for today's company in 1949 at the age of 20. Working six days a week and driven by the constant strive towards more efficient production methods, he soon started producing springs and metal parts and thus quickly gained success.

As early as the 1960s, MSA offered groundbreaking manufacturing solutions by radically restructuring their production. To complement the traditional wire springs, the company started to produce spring components with noble-metal contacts for well-known customers from the automotive and electrical sectors and the budding electronics industry.

When Mario Sangalli joined the company in 1989, it had a workforce of around 500 employees and a turnover of almost 40 million Euros. Today, he is the owner and CEO of the entire MSA group, which employs 1,000 staff worldwide and generates a turnover in the region of 200 million Euros, with the major customer sectors being the automotive industry, the electrical and electronic sectors and furniture manufacturing.

The three pillars of success.

The success of MSA is built on three solid pillars, according to Mario Sangalli: customers, suppliers and employees. In his relationships with customers and suppliers, he values trustworthiness, mutual respect and transparency. The employees with their specific expertise, their quality-focused approach and their reliability are the main asset of the company: "They apply all their knowledge and experience for the company", says Sangalli, who runs the company like a large family.

The red thread running through the whole MSA group is their 360-degree approach to innovation, which goes beyond the ideas emanating from their in-house research and development department. "Innovation and cutting-edge technology have been our constant companions. We always incorporate the latest technology, whether it is for machines, tools, assembly plants, the finishing of products or in the logistics processes. Since we started to meet monthly at the highest level of management to exchange ideas on new and current projects, the innovation process has become even more dynamic."

In order to keep their competitive edge and transfer it to the next generation, MSA has a training programme for young professionals. The company also works closely with the Polytechnic University of Lecco and the schools and colleges in the region, employs trainees and funds grants for the children of their employees, and furthermore, there is an in-house training centre.

'Qualità totale'.

In charting their course of success, MSA has another constant: quality. The company was a trailblazer in writing their own quality handbook in the early 1980s, and when about 10 years later the ISO 9000 standards became the industry norm, MSA easily passed the necessary certifications. Today, six of the seven production locations comply with even the strictest standard UNI EN ISO/TS 16949:2009, which is a requirement for the automotive industry.

This quality concept means that customers benefit from tailored advice and personal attention from the first project step. MSA offers support in product design, selection of the best possible technologies and solution concepts for the manufacture of what are often complex parts, or further, researches what would be the ideal material from a technological and economical point of view. The company also develops and builds the press tools, which are essential to making best use of the potential of high-performance production plants, such as the BRUDERER automatic stamping presses.

BRUDERER: a guarantor for quality.

Since its beginnings, MSA has been closely involved with stamping. Mario Sangalli is nevertheless committed to a comprehensive manufacturing portfolio: "We want to have a broad spread and not just supply a niche market. Nowadays it is not just about selling products. A company needs to offer additional services covering the complete process, such as take part from the very beginning as co-designer and develop the ideal processes for each material. Our technicians are on-site at the customers' works and cooperate closely with their technical departments. It is essential to be present in the markets where the development takes place, such as Germany for example – this is where the ideas for the future will come from!"

MSA's range of machinery comprises about 300 machines with a total capacity for more than 30 million parts per day. The machines in the stamping room run in two or three shifts. Amongst them are 50 BRUDERER stamping presses with a press force of up to 810 kN and 1,450 mm bed length, producing large volumes of parts every day. Using different types of materials from iron to copper, brass, aluminum, to name only a few, with a thickness of up to 2.0 mm thick, different parts are stamped at high speed .

The BRUDERER stamping presses are a guarantor for quality as far as Mario Sangalli is concerned: "Producing on BRUDERER machines means quality production for an international clientele, it's in an entirely different league. Up to a press force of 80 tonnes, BRUDERER stamping presses are second to none. Their absolute reliability, high quality and state-of-the-art technology are priceless when it comes to cost-efficient production." MSA has a defined standard for the tool loading area and stroke heights for all their BSTAs, allowing them to use their potential to the full. The stamping presses can thus be used with the same tools throughout the whole of the MSA group.

The same performance, precision and ease of use that characterise the stamping presses also apply to the BRUDERER servo feeds. "For example, with the BRUDERER servo feeds we benefit from the excellent synchronization to assemble different material inside of the tool. We appreciate their flexibility and versatility which allows us to continually improve our production processes and adapt them to ever stricter requirements. They can be set up in no time and work accurately and reliably. A further unrivalled advantage is the fact that BRUDERER is the only manufacturer of machines and feed units worldwide who, without exceptions, has spare parts available for all its products", adds Mario Sangalli.

On the topic of the four newly acquired BRUDERER stamping presses, Mario Sangalli explains his view of future market developments: "In the longer term, we will need more 80 tonne presses. This was borne out by the first two new 80 tonne BRUDERER machines which were running to capacity in three-shift operation after a very short time, even though at the time of ordering, there was no concrete project in the pipeline. Today, all four new BRUDERER stamping presses run two or three shifts, and naturally, they work perfectly and produce parts reliably to the highest quality." ■

3-shift operation: BSTA 810-145 high-performance stamping press.



State-of-the-art technology: MSA's range of machinery.



BRUDERER Presses Far East: gateway to South-East Asia.

20 years ago, the foundation was laid for what has now become the BRUDERER competence centre in Singapore. This milestone for looking after the South-East Asian markets and customers was celebrated in April 2015, as was the fact that the subsidiary located in the highly-developed city state has made a significant contribution over those two decades to BRUDERER being able to establish itself in the region.

When BRUDERER Presses Far East Private Limited was founded on 25 May 1995, the primary aim of the mother company back in Frasnacht was to use Singapore as a base to serve South-East Asian customers both on-site and in countries such as Malaysia, Thailand, the Philippines, Indonesia, Vietnam, Myanmar, Laos and Cambodia. The area covered was soon extended to the People's Republic of China, Taiwan, Korea and India.

From a branch office to a competence centre.

As the market responsibility grew, so did the staff – from just three employees to begin with to 10 now. With the goal of transforming the branch into the first competence centre in Asia, BRUDERER Presses Far East acquired their current location back in March 2000 – some 1,400 square metres at 65 Loyang Way, not far from Changi International Airport. The company was able to set up a well-equipped workshop and also had enough space for a replacement part and machine depot. And as is still the case today, Singapore had excellent infrastructure, highly-qualified personnel readily available and a stable political climate – the ideal framework conditions. A crucial factor was also the fact that many multinationals were already established in the city state.

All the ingredients were there to make the project a real success. The employees were given comprehensive training in Switzerland and locally to enable them to sell, service and upgrade the BRUDERER high-performance automatic stamping presses as necessary. A warehouse was also set up housing not only critical replacement parts but also a couple of machines that could be delivered to customers at a moment's notice. This was to take into account a specificity of the market, whereby contracts are often dependent on being able to provide immediate delivery to companies which need extra stamping capacity.



20th anniversary BRUDERER Presses Far East – The celebration took place in the S.E.A. Aquarium of the World Sentosa Resort in Singapore.

Opening the door to China.

BRUDERER Presses Far East also paved the way for the main office back in Switzerland to conquer the Chinese market. Local management and staff with knowledge of the language and culture provided invaluable support in the early years when it came to dealing with existing and potential customers in the country. The competence centre was also a catalyst for the development of a BRUDERER automatic stamping press that was specific to the Chinese market.

After BRUDERER set up its own competence centre in Suzhou, China in 2004 and opened a sales and service office in Dongguan in 2009, BRUDERER Presses Far East in Singapore could then go back to focusing on looking after the South-East Asian markets in Malaysia, Indonesia, Thailand, the Philippines, Vietnam, Myanmar, Laos and Cambodia.

BRUDERER specialists for South-East Asia.

With 14 current employees, three each in sales and customer / general services and two in administration, there is enough staff to handle the main tasks of the centre of competency. As well as advising and looking after existing and potential customers, the team has responsibility for the actual selling of BRUDERER high-performance automatic stamping presses, customer services, speedy deliveries of replacement parts and machines from the warehouse and full revisions of used machines, as well as carrying out stamping tests and training courses.

This success story was duly celebrated on the occasion of BRUDERER Presses Far East's 20th anniversary on 15 April 2015. In the presence of Thomas Kupfer, Swiss ambassador to Singapore, and Reto Bruderer representing the owning family, BRUDERER CEO Andreas Fischer thanked the guests, made up of customers, suppliers and employees, for their long-standing loyalty to BRUDERER and underlined the importance of their contribution to this success. How well the employees of BRUDERER Presses Far East carry out their tasks is reflected in the significant positive feedback from customers and the lasting relationships built up with the latter and with business partners. The employees have proved themselves as reliable and accurate as the BRUDERER automatic stamping presses themselves. ■



Teamwork – the BRUDERER Singapore team with Andy Fischer and Reto Bruderer.

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For more information about BRUDERER and our products, services and subsidiaries, visit www.bruderer.com

BRUDERER 
 PRECISION – SWISS MADE

EDITORIAL

**Let's innovate.**

Reflecting on what was said in the editorial of STAMPER back in the autumn of 2014, the Year of the Horse has certainly proved to be a year marked by dynamism and changes which put our flexibility and openness to the test in many ways.

When the Swiss National Bank discontinued its fixed minimum exchange rate policy for the Swiss Franc against the Euro, this has greatly affected the mainly export-oriented economy of our country and as a result, we find ourselves facing new challenges. In such a situation, the first step is of course to optimise the cost structure as far as possible. However, BRUDERER is convinced that product innovation is just as important for the long-term success of our company.

A good example of this is the BSTA 410-110 high-performance stamping press which will be unveiled at Blechexpo in Stuttgart from November 3 – 6, 2015. This model fits neatly between the BSTA 280 and the BSTA 510 and combines their most important performance characteristics. Also on our stand, we will be offering our customers a sneak preview of a further innovation: a special edition of the BSTA 200-60 which will be in operation using a progressive tool by Fritz Stepper GmbH & Co. KG. This press, which operates in an ultra-high-speed range, demonstrates the future of stamping whilst at the same time shows what the cooperation of two long-term partners can achieve.

Our customers around the globe are ultimately the beneficiaries of these innovative forces. They too must be innovative and constantly improve their processes and services in order to maintain or increase their competitive edge, which means that we as their suppliers must give them a helping hand with better and more efficient solutions.

We frequently come across innovative capability in our customers. One example of this is the German company Marquardt GmbH. With its pioneering spirit and state-of-the-art technology, it has made a name for itself in the automotive industry as a driver for innovation. Another is the MSA Group headquartered in the Lombardy region of Italy, which through foresight in its investment policy keeps itself at the forefront of the market. Innovation is also one of the cornerstones of Thomas Engineering Company. The American company based in Minneapolis specialises in stamping micro-miniature and ultra-high-precision parts and has been producing these since 1965 on BRUDERER presses.

The next innovation window is at Blechexpo in Stuttgart from 3rd to 6th November 2015. Visit us on our stand 7209 in hall 7 – there will be plenty to see, we look forward to welcoming you!

Andreas Fischer, CEO

Imprint:

Publisher: BRUDERER AG, CH-9320 Frasnacht
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Project: BRUDERER AG, CH-9320 Frasnacht, Kieweg und Freiermuth Werbeagentur GmbH
Texts: Claudia Gravino (GRAVINO)
Translation: Andrew Lilley, Grazia Malberti (Interbrian S.R.L.), Isabelle Raper, Freeman Huang BRUDERER MACHINERY (SUZHOU Co., LTD.)
Graphics/Layout: Kieweg und Freiermuth Werbeagentur GmbH
Photography: p. 1: Hans & Jerry Gross Fotostudio AG, Thomas Engineering Company; p. 2/3: Hans & Jerry Gross Fotostudio AG; p. 4/5: Hans & Jerry Gross Fotostudio AG; p. 6: Thomas Engineering Company; p. 7: Jens Ellensohn Fotografie; p. 8: BRUDERER

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BRUDERER presents the

**WORLD
FIRST
BSTA 410-110**

At this year's Blechexpo trade fair in Stuttgart, BRUDERER presents their new BSTA 410-110 high-performance stamping press. This model combines the core advantages of the BSTA 280 and BSTA 510 and thus fills the gap in the BSTA product range. In cooperation with the innovative press tool maker Fritz Stepper & Co. KG, BRUDERER also gives a glimpse of the future of high-speed stamping with a special high-speed version of the BSTA 200-60 HS.

The sheet metal working industry flocks to Blechexpo in Stuttgart from 3rd to 6th November 2015 to keep up-to-date with the latest developments and trends in the industry. BRUDERER exhibits their new BSTA 410-110 stamping press in hall 7 and, in cooperation with the innovative press tool maker from Pforzheim, shows once again what can be achieved when BRUDERER machines are paired with Stepper's high-performance press tools.

BSTA 410-110: powerful & dependable.

The BRUDERER BSTA 410-110 is an attractively priced high-performance stamping press which combines the high dynamics of the BSTA 280 and the performance characteristics of the BSTA 510. This is the first time since the discontinuation of the 300 and 400 series in the 1980s and 1990s that the Swiss stamping press manufacturer offers a machine which is in the popular 40 tonne press force range. This latest addition to the series will be unveiled at Blechexpo 2015.

The BSTA 410-110 has the same main drive, brake, fly wheel and clutch as the well-proven BSTA 280 combined with the larger tool loading area of 1,100 mm, resulting in excellent dynamics and a correspondingly higher stroke speed of 1,600 spm. In short: a well-conceived technical solution with fully coordinated interfaces.

The renowned concept is rounded off by the perfectly synchronised BRUDERER feed technology. In its standard version, the BSTA 410-110 is equipped with a BBV 191 roller feed unit, a remake of the former BBV 190 with vertical cardan shaft output. As optional attachments, various servo feeds from the BRUDERER range or the BZV 61 gripper feed unit are available. Furthermore, the BSTA 410-110 is also suitable for applications with laser technology.

Stepper and BRUDERER: the Formula 1 team of stamping.

The press tool maker Fritz Stepper GmbH & Co. KG is the choice for high-precision, high-volume manufacturing of electronic connectors and contacts. The Pforzheim-based company is also a loyal and long-term partner of BRUDERER. Not only do they use the Swiss-made high-performance stamping presses in their own production in order to achieve the desired high precision, but also they often put the new BRUDERER models through their paces before they are released for worldwide sale.

Over the years a strong partnership has thus been created in which both partners spur each other on to achieve ever greater heights of performance and excellence. One example of this was on display at the BRUDERER Open House exhibition in 2012. A BSTA 280-80, equipped with a Stepper 7-out stamping die with carbon holder, produced parts for smart phone components at a staggering speed of 233 parts per second. This equates to an output of 100,000 parts in just seven and a half minutes.

Facts and figures on the Stepper high-performance combined stamping tool

- 7-stage progressive stamping tool
- > 16,000 parts per minute
- Stamped parts: board-to-board connectors
 - Strip material: CuZn37
 - Strip thickness: 0.25 mm
 - Strip width: 17.50 mm
 - Stroke height: 6 mm
 - Feed length: 8.89 mm

all new BSTA 410-110 at Blechexpo 2015.



BRUDERER at trade shows 2015/2016



| | |
|-------------------------------------|---------------------|
| BLECHEXPO (Germany) | 03.11. – 06.11.2015 |
| FABTECH (USA) | 09.11. – 12.11.2015 |
| METALEX (Thailand) | 18.11. – 21.11.2015 |
| MANUFACTURING INDONESIA (Indonesia) | 02.12. – 05.12.2015 |
| IMTEX Forming (India) | 21.01. – 26.01.2016 |
| Southern Manufacturing (UK) | 09.02. – 11.02.2016 |
| MACH (UK) | 11.04. – 15.04.2016 |
| SIMTOS (Korea) | 13.04. – 17.04.2016 |
| Stanztec (Germany) | 21.06. – 23.06.2016 |

Stepper press tools are the creme de la creme in the stamping world. In order for them to achieve their full potential, Michael Stepper, the Managing Director of the company, relies on BRUDERER as a guarantor of the highest precision: "BRUDERER stamping presses form the basis for Stepper press tools and enable them to deliver the highest precision. Partnered together, they offer an unrivalled press tool service life."

The 'team' can be seen in action at the BRUDERER stand in hall 7 at Blechexpo. More than 16,000 board-to-board connectors per minute can be stamped at a speed of over 2,300 spm on the BSTA 200-60 HS using a 7-stage Stepper stamping tool. An impressive performance. "This is ultra-high-speed stamping at its best," enthuses Andreas Fischer, CEO of BRUDERER. "Akin to the 'concept car' in the automotive industry, we have built this special edition of the BSTA 200-60 in order to showcase the extraordinary performance of Stepper tools. It is a fully functional vision of the future, allowing both companies to demonstrate what could be possible in tomorrow's world of stamping. With this concept machine

"This is ultra-high-speed stamping at its best."

and the new BSTA 410-110, two exciting exhibits are awaiting visitors to our stand at this year's Blechexpo. The BRUDERER stand will be a hive of activity!"

BRUDERER: hall 7, stand 7209
BSTA 200-60 HS in operation with tool an peripherals.
www.blechexpo-messe.de/en/blechexpo

Facts and figures on the BSTA 410-110

- Press force: 410 kN
- Speed: 100 – 1,600 spm
- Tool loading area: 1,100 mm
- Adjustable stroke (standard): 8 – 47 mm
- Adjustable stroke (option): 16 – 64 mm
- Shut height: 206 – 298 mm
- Strip inlet width: max. 250 mm
- Drive power of main motor: 28 kW
- Weight: approx. 8,700 kg



BSTA 200-60 HS

- Press force: 200 kN
- Speed: 100 – 2,500 spm
- Tool loading area: 600 mm
- Adjustable stroke (semi-automatic): 4 – 34 mm
- Strip feed unit: BRUDERER BSV 170 servo feed unit

Small stamped parts make for big success.

The Thomas Engineering Company of Brooklyn Park, Minnesota has established itself as a specialist manufacturer of small and miniature precision stamped parts from sheet metal. Over the years, they have consistently used their vast expertise and experience to do the impossible for their customers.

When tool-maker William J. Thomas founded the company in 1962, his main aim was to develop and manufacture tools with which he could stamp the most complex miniature and micro-miniature as well as medium-sized metal parts with ultra-high precision. Over 50 years on, Thomas Engineering Company has become one of the leading innovators, developers and manufacturers in this field of stamping for customers all around the world. Indeed the Brooklyn Park company has made a name for itself when it comes to the timely delivery of large quantities of the smallest parts stamped to the closest of tolerances.

Creating solutions.

The more difficult or seemingly impossible a task is, the more the 50 employees are in their element. The comprehensive range of Thomas Engineering Company services includes Rapid Prototyping – a department specialised in developing and executing test series of up to 5,000 stamped parts in just five to ten working days. “Customers come with their ideas, sometimes in the form of simple hand-drawn sketches, sometimes with CAD data,” explains managing director Tim Aberwald. “Our specialised prototyping team then gets to work looking for the most suitable manufacturing solution. The smallest parts are made from a strip thickness of less than 0.03 mm and have to respect the finest tolerances. The Thomas Engineering Company has extensive experience in this sector, making it a preferred partner for the rapid implementation of precision parts for customers developing new and innovative products. This means that all stakeholders on both sides are always at the cutting edge of technology. In recent years, one of the most demanding projects saw us combine three parts in one – a task we managed with aplomb.”

Global reputation.

The main market for the stamped parts made by the Thomas Engineering Company is firms in the electronics, medical, telecommunications and automotive sectors in Asia, Europe, North and South America.

In the electronics field, where equipment is becoming ever smaller and at the same time more functional and with greater levels of performance, demands for precision and electronic connectors are increasing. These parts are stamped at up to 1,500 strokes per minute and sent by the million every month all around the world.

In the medical sector, where high-quality material is machined at the closest of tolerances, parts stamped by the Thomas Engineering Company are used in surgical blades and in monitoring equipment to cite two examples.

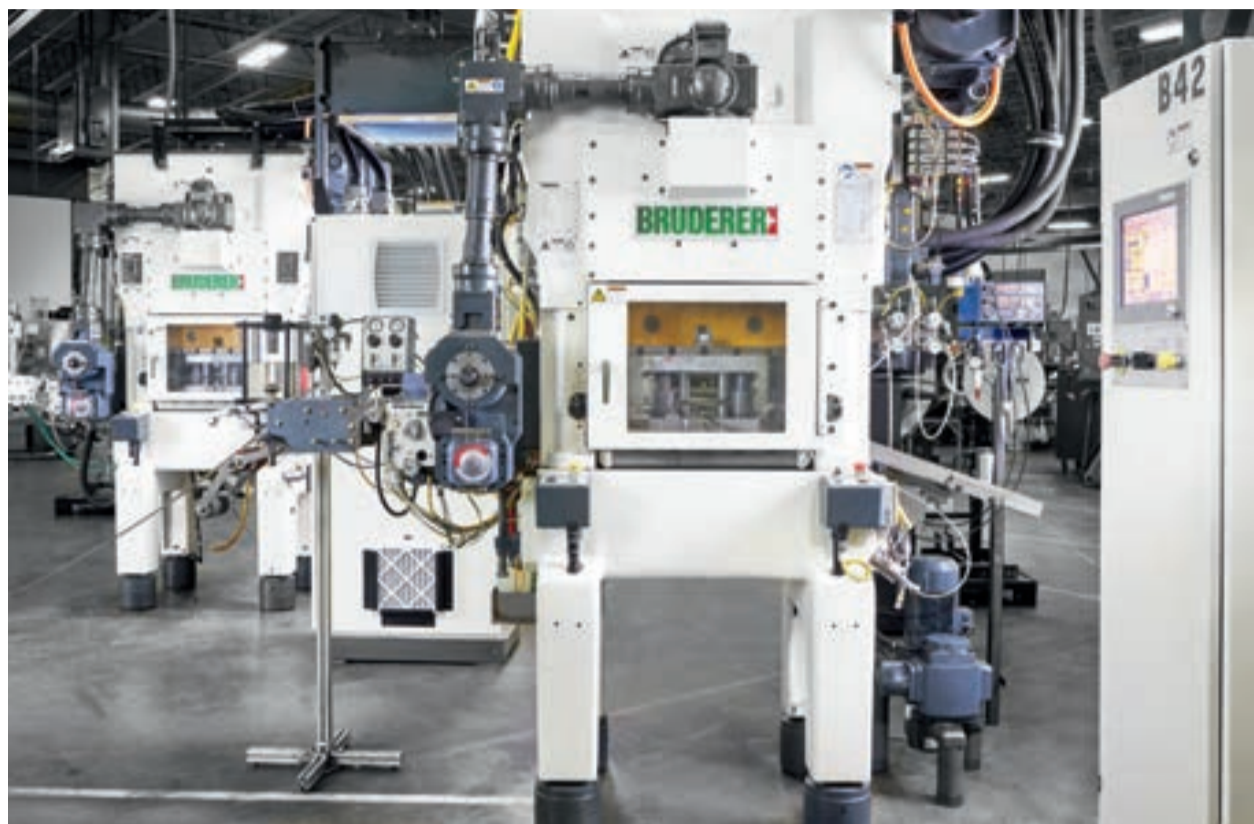
For jobs from the automotive industry, the BRUDERER high-performance automatic stamping presses are put to the test: in the space of a couple of minutes they can be stamping out 60,000 parts per minute with speeds of up to 1,500 strokes. The parts are then used for example in electronic components, ignitions and fuel supply for vehicles. Creative solutions are often the order of the day, and thanks to its CAD-software supported tool production, the Thomas Engineering Company can deliver millions of high-quality parts every month to the required close tolerances at incredibly competitive costs.

The demands of customers in the telecommunications sector are totally different yet equally as exacting. The parts stamped in Brooklyn Park are used in the cell-phone and satellite sectors as well as for customers in the computer and aviation industry.

Good tools make for top-class parts.

The company buildings occupy some 8,000 square metres, with around 3,000 square metres for tool manufacturing, construction and prototype construction alone, producing several million stamped parts every month. The firm’s 50 employees work in a highly modern environment, and are well trained and highly experienced.

Tool manufacturing sees a team of 12 developing and manufacturing cutting-edge stamping tools for in-house production. Ultra-modern CAD software means that development and lead times can be kept to a minimum. One of the specialities



Precise and reliable: BRUDERER high-performance automatic stamping presses.

of the Thomas Engineering Company is the development and manufacturing of high-speed carbide composite tools. The company also trains its own staff in tool manufacturing, with tool-makers having a four-year apprenticeship and die-setters two years of training.

Top-quality stamping the core competency.

The 30 BRUDERER high-performance automatic stamping presses are used in the production process to manufacture millions of parts every month. The first of these, a BSTA 30, dates back to 1965 while the most recent – a BSTA 510-125 – was delivered in September 2015 and is used to stamp high-precision parts for the medical sector. “Once again, the main reason here for choosing BRUDERER was the precision, the reliability and the long tool life that we can achieve with the automatic stamping presses,” says managing director Tim Aberwald.

The company also offers clients other elements in the manufacturing process, including spot welding, riveting, plating and finishing, deburring and heat treating of stamped parts as well as part and sub-assembly and a variety of packaging solutions. In this way, each customer gets products which correspond to the specific requirements of their industry and their equipment.

Quality at the closest tolerances.

Thomas Engineering Company relies on Total Quality Management for quality assurance at every step of the stamping process, beginning with first-class raw materials and going right through to the finished product. The company is ISO 9001:2008-certified, and uses programmable non-contact visual control systems in the production process to reduce testing times, eliminate errors, provide statistical data in real time and constantly monitor quality.

“We specialise in the stamping of miniature, micro and ultra-thin as well as medium-sized parts,” explains CEO Su Lien. “We can process virtually every metal and any alloy, including aluminium, brass, bronze, copper, Inconel alloys, steel, stainless steel and titanium, with 22 – 75 tonnes of pressing force and speeds of up to 1,500 strokes per minute. We can maintain tolerances of 0.005 mm at strip widths of up to 0.025 mm whilst maintaining high standards of quality, thanks to our BRUDERER automatic stamping presses used in combination with our own tools. This obviously means that we can stamp in a highly cost-efficient way, and on the rare occasions when we need a replacement part, it arrives in no time at all. All of these reasons make BRUDERER a top-class partner for us.”

Like other innovative players in the stamping field, the Thomas Engineering Company sees the trend towards ever smaller and more complex parts persisting in the future. “We have highly-qualified, specialised and very experienced staff,” states CEO Su Lien. “If we continue to combine our competencies with those of innovative and reliable partners like BRUDERER, we will be able to overcome any future challenges with similar success.”

