BRUDERER

STAMPER

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The magazine for high-performance punching technology

World premiere at BRUDERER in-house exhibition

At its in-house exhibition from 7 – 11 May 2012, BRUDERER will be unveiling a world-first: the BPG 22 switchable planetary gearbox, which enables the BSTA 510 to be used both as a regular punching press and for testing and running in new tools. This extra functionality will open up new perspectives for BRUDERER customers.

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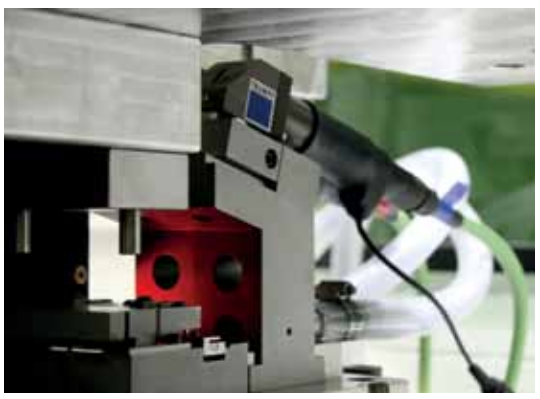

US in-die laser technology

Weiss-Aug has developed a process using in-die laser technology that is ideal for producing high-precision medical equipment. It enables components to be manufactured in a cost-effective and economical way.

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Precision metalwork

hapema GmbH provides its customers with the latest in modern technology and innovative solutions. Over the years, the German company has come to trust the precision and reliability of BRUDERER machines for testing tools and for stamping.

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Editorial

Combining innovation with tried and trusted favourites

»Curiosity is always at the forefront of a problem that needs to be solved.« This quote from Galileo Galilei is an illustration of how the Italian philosopher and scientist lived his life, making revolutionary new discoveries along the way.

Curiosity, and the ability to listen to our customers' needs, have led us to develop a world first – the BRUDERER BPG 22 planetary gearbox. This additional gearbox creates an added functionality which previously was not possible. The high-performance BSTA 510 fully-automated stamping press can be turned from a production into a test machine at the flick of a switch and can be used for the try-out of new tools. The speed of the ram movement can be adjusted in stages by manual control and the press can be moved at a stroke rate of one. This provides our customers with real added value from which they will benefit in many respects.

The BRUDERER planetary gearbox will be unveiled to the public for the first time at our **in-house exhibition from 7 – 11 May 2012**. We will also take this opportunity to show our guests various other extensions to our range, including the BSTA 1600-220 and the BSTA 2500-250. With the automotive industry and the wind power sector now coming to rely more and more on electric motors, we have adjusted our product programme in certain areas to cover the stamping of motor case lamination using this type of machine. Another item on the in-house exhibition agenda is a guided tour of our facilities, showcasing our manufacturing depth – an important element of BRUDERER's trademark quality.

This edition of STAMPER also features Korean company KUM who managed to secure a competitive advantage in the tough electronics market thanks to BRUDERER technologies. Long-term BRUDERER customers such as hapema GmbH of Germany, C. Brandauer & Co. Ltd. in England and Weiss-Aug in the USA meanwhile use our high-performance fully-automated stamping presses for efficient manufacturing in a host of fields of usage, proving that the precision of our products, our experience and our quality continue to lead the way.

Andreas Fischer, CEO

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Meet and greet at BRUDERER

BRUDERER will be attending various trade fairs in 2012, the next ones being MACH 2012 in Birmingham in the UK from 16 – 20 April and of course also EuroBlech in Hannover in late October. The exhibition year started in India with IMTEX held in Bangalore from 19 – 24 January, where BRUDERER unveiled a new product.

A passage to India for the PRIMA

Every other year, the Indian Machine Tool Manufacturers Association organises the Indian Machine Tool Exhibition IMTEX in Bangalore. BRUDERER has attended every one of these exhibitions since the very first and considers it a good platform for international players to showcase their products as well as the latest technological developments.

This year, BRUDERER chose IMTEX to launch its compact high precision PRIMA, a fully-automated stamping press with simple handling. This new model addresses the needs of small and medium-sized companies which supply the electronic industry, making BRUDERER's high-quality stamping technology accessible at an economical price. After a successful market introduction in China, the machine is now being released for India.

Various key customers including Indian Ordnance Factories and Hindustan Aeronautics Ltd, as well as multinationals like TYCO, Molex and FCI to name but a few visited the BRUDERER Presses India Pvt. Ltd stand at the Bangalore International Exhibition Centre and had the opportunity to see the PRIMA in operation.

The response was very encouraging for BRUDERER's Indian subsidiary, which celebrated its 10th anniversary in 2011.

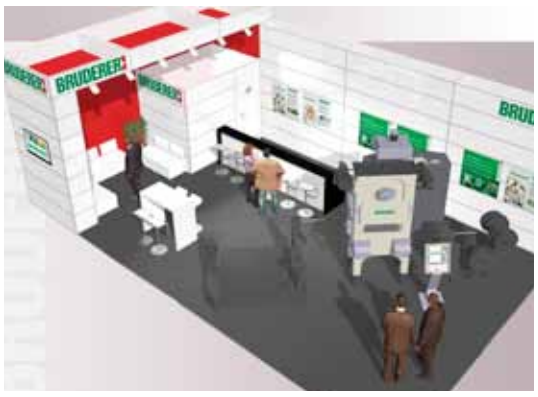
UK industry meets at MACH 2012

In 2011, the UK industrial sector has seen some remarkable recovery figures in engineering-based manufacturing. The Manufacturing Technologies Association (MTA), which represents companies in that sector, reported that orders were running around 66% higher than during 2010 for the first nine months of the year. »In the current economic climate, the role of manufacturing has become more important than ever,« explained MTA President Simon Pollard, of Kyal Machine Tools. »We continue to show growth and we're aiming to pull the economy along.«

What is driving the increase in the manufacturing technology market is the growth that key end-user industrial sectors are experiencing in the UK. The automotive sector for instance is seeing important outlays, with companies as diverse as Jaguar / Land Rover, Mini and Nissan all recently announcing significant plant investment programmes. In power generation, the UK has long been strong in oil and gas but is now looking to take a lead in offshore wind power.

As a result of the prevailing market conditions, the UK's engineering-based manufacturing sector is looking forward with confidence to its bi-annual showcase MACH, being held in Birmingham from 16 – 20 April 2012. The exhibition – the UK's largest for manufacturing technologies – has always been at the forefront of technology and is celebrating its 100th anniversary this year.

BRUDERER's interest in this exhibition is a positive sign, with the size of its stand four times larger than in previous years, showing a significant expression of faith in the UK as a manufacturing location and a statement of intent on the part of the company. »We're delighted by the vote of confidence BRUDERER has cast,« said Graham Dewhurst, MTA's Director General and Exhibition Manager. »We at the MTA believe that not only is it a good sign for MACH but that it will be a great decision for BRUDERER too.«



MACH, Hall 4, Stand 4625, 77m²

BRUDERER has joined the Metalforming Machinery Makers Association, helping it to double in size compared with 2010. »We aim to make a statement to the world that manufacturing is on an upward curve in Great Britain and here to stay, and we will be showing the latest technology in the stamping sector to support that belief,« said Adrian Haller, Managing Director of BRUDERER UK Ltd.

BRUDERER will be in hall 4 with a BSTA 280-75 with B2 control system and including comprehensive peripheral equipment from German company Leicht Stanzautomation GmbH.

www.bruderer.co.uk

BRUDERER at trade fairs 2012

MACH 2012	UK	16.04. – 20.04.2012
SIMTOS	Korea	17.04. – 22.04.2012
4. Kongress Stanztechnik	Germany	23.04. – 24.04.2012
BRUDERER Hausmesse	Switzerland	07.05. – 12.05.2012
MECANICA	Brasil	22.05. – 26.05.2012
Die & Mould China	China	31.05. – 03.06.2012
STANZtec	Germany	16.06. – 21.06.2012
MSV 2012	Czech Rep.	10.09. – 14.09.2012
TATEF	Turkey	02.10. – 07.10.2012
Vienna Tech	Austria	09.10. – 12.10.2012
EuroBLECH	Germany	23.10. – 27.10.2012
FABTECH	USA	12.11. – 14.11.2012
DMP 2012	China	14.11. – 17.11.2012

Brandauer celebrates 150 years with two new BRUDERER presses

Precision pressings and stamping firm Brandauer has found a business-savvy way of celebrating its 150th anniversary. The company, based in Birmingham at the heart of the United Kingdom, has decided to invest £750,000 in two state-of-the-art BRUDERER fully automated stamping presses which will increase capacity, improve accuracy and open up a host of new markets. It represents the largest single investment in the company's history, with the new machines able to produce two billion parts every year. This increase in output could be worth up to £2.5 million in potential new sales, with Brandauer now targeting a £10 million turnover.

(l-r) Rowan Crozier (Brandauer), Adrian Haller (BRUDERER UK) and David Spears (Brandauer)

Brandauer began in 1862 as a manufacturer of pen nibs, achieving a reputation for excellence with a series of royal warrants, special commissions and high-volume global sales. Traditional pen nibs became obsolete during the 1950s and 60s and the company gradually diversified into precision pressing to supply components for the growing electrical and telecoms industries.

Markets, customer demand and global supply chain relationships continued to change, so Brandauer developed an increasing specialisation in the manufacture of complex metal components, particularly where extreme precision was required in challenging materials. 50% of the world's cars now contain a Brandauer component, as do a significant proportion of the world's kettles!

The company is now well-established as a world-class engineering specialist with significant experience across a diverse range of industries, including electronics, telecoms, IT & computers, medical, automotive and renewables, whilst still adhering to the core values which made its name 150 years ago – namely precision, customer service and value.

Competitive through efficiency

Brandauer, which is one of ten companies that make up MAN (the Midlands Assembly Network), produces in excess of 15 million parts every week for its customers.

Despite being a solely UK-based, family-owned business now in its sixth generation of ownership, the company is justifiably proud of its international reputation as one of the leading independent manufacturers of high-precision metal components.

It exports over £6 million per annum, with United States its largest market by volume (with 600 million parts heading across the Atlantic) and China being the largest by value (almost 40% of turnover heading to clients in the Shenzhen region).

Brandauer is enjoying success in what is a highly competitive global market, but the company needs to stay ahead of the game: hence the investment in the two new machines. It has orders placed on BRUDERER for a BSTA 510-125 and a 280-75, both of which are being funded through the firm's own cash reserves.

»This is a real show of intent and will illustrate to existing and new customers that we plan to offer them the very best level of service and manufacturing performance,« said managing director David Spears.

»Both of the presses feature the ground-breaking BRUDERER B2 control technology and are fitted with high-speed precision servo feeds for greater flexibility. The BSTA 280-75 is also able to offer up to 2,000 strokes per minute, which is twice as fast as anything we currently have. The BRUDERER machines will give us greater speed, accuracy and efficiency to target new industry sectors.«

The BSTA 510-125 and 280-75 will be delivered to the firm's Newtown facility by April 2012, and engineers from BRUDERER UK will then be on hand to oversee the installation and train staff to get the maximum performance from the machines from day one. »We've worked with Brandauer for more than 40 years and are delighted to be able to extend this working relationship even further with this latest acquisition,« explained Adrian Haller, managing director of BRUDERER UK. »At £750,000, this is the largest order we have secured in our history and is a further indication that UK manufacturing is committed to being the best in the world.«

Extra staff to cope with increased demand

»It is part of our mission statement to offer customers world-class performance and to do what you need to invest in the best machines, which is exactly what BRUDERER provide,« added Brandauer's sales and marketing director Rowan Crozier. »Once this additional capacity is in place, we would expect turnover to break the £10 million barrier in 2012 and this will involve taking on five new members of staff to cope with the new orders.« Those extra employees represent a 10% increase in staff, who will be housed at the company's 45,000 square foot factory.

»2011 went well and saw us win new business in both existing and new markets, including exciting orders for complex and larger components for the medical and renewable sectors respectively,« said Spears, who sees the acquisition of the two BRUDERER machines as the next stage of the company's development. »Turnover rocketed to over £9 million and we have reached a stage where we require additional capability in order to meet anticipated client demand. We identified the fact we needed machines that could give us greater speed, accuracy and a bigger tool die area that is able to deliver more added value at point of manufacture, which is why we turned to BRUDERER.«

With 29 BRUDERER machines ranging from 20 to 60 tonnes of press force already in their machine press shop, it is clear that Brandauer had the utmost respect for the Frasnacht-built technology, and very soon it will also have a BSTA 510-125 and a 280-75 to rely on as it targets lucrative international markets.

Specialist tooling transfer and refurbishment service

Brandauer uses its established multi-sector technical and engineering skills to offer an efficient, low-risk tool transfer service. It can offer a full QA approval and component verification process with a free 15-hour tool inspection and status report, with defective tooling repaired, in-house, as required. Several high-tech customers in the automotive and medical sectors have benefitted from this capability in the past year, allowing them to consolidate their supply chain and improve efficiency.

www.brandauer.co.uk

Multi-sector stamping experience applied to every project

BPG 22: A fully-automated stamping press and test press all rolled into one

The sunwheel drive is at the heart of the transmission

The BPG 22 planetary gearbox developed by BRUDERER is a world first, and something that stamping experts and tool-makers have been waiting for – for a long time. It is an additional gearbox which will enable fully-automated BRUDERER BSTA 510 stamping presses to be turned into test machines for trying out new tools at the flick of a switch, and then afterwards return to serial production – creating incredible added value for BRUDERER customers!

In the past, stamping firms who created tools in-house had only one solution for these two very different tasks – they had stamping presses for actual production whilst having to carry out tool and stamping tests on a separate machine, which would then as a rule stand idle until the next series of tests, taking up valuable capital and production space.

Two becomes one

This new development from BRUDERER now offers a practical alternative which provides the customer with real added value. A planetary gearbox that is built into the shaft of the main motor of a fully-automated stamping press enables test runs to be carried out, steered by manual control, at the lowest stroke rate and at full press capacity. The values that are produced can then be carried over exactly and used in the regular production process. The advantages for customers are manifold: increased efficiency, reduced costs, less space required, simple handling and more flexible work processes. There is also a gain in terms of logistics, since tools have to be transported less often.

The catalyst for this development was the servo technology which has become far more prevalent in recent years. While it is of little or no use for stamping at high stroke rates, which is one of BRUDERER's core competencies, it is however very suitable for slower processes such as test stamping and try-out of tools. BRUDERER therefore decided to use these very properties and adapt them to their high-performance fully-automated stamping presses, and the result is the BPG 22. The aim was to combine two machines in one – namely to take a regular high-performance fully-automated stamping press and equip it at very low stroke rates with the capabilities of a test press, which however do not have any influence on the (day-to-day) functioning at higher stroke rates. A particular challenge was making the strength and torque which are required for comprehensive test settings available without the need for a significantly larger electric motor or having to changing something significant to the basic principles of the tried and trusted BRUDERER stamping press.

All different, all new

The project team found themselves confronted with quite a task. It was not merely a case of developing a planetary gearbox – it had to be a three-level version. The basic concept also called for it to be enclosed in a rotating casing, which posed a further challenge. For project manager Pascal Hardmeier and the rest of his team, there was a lot to learn, and while that did not make for an easy time of things, it was certainly exciting and enriching work.

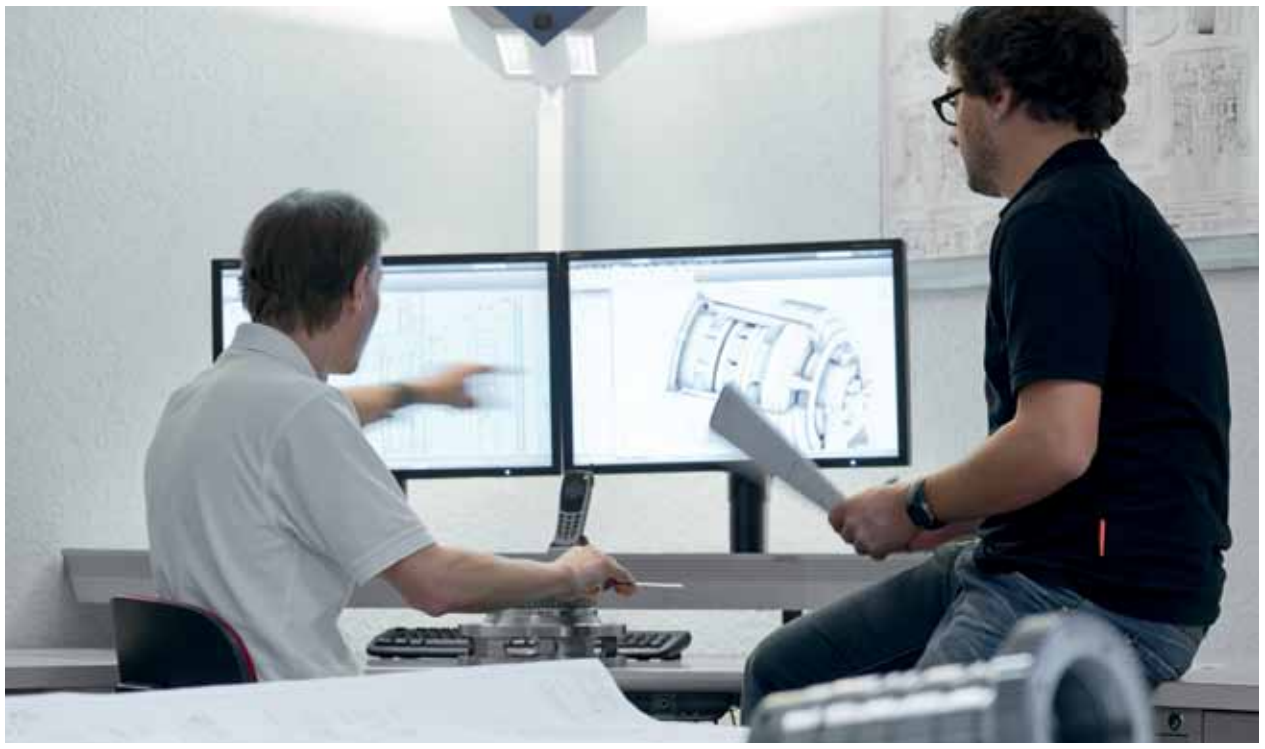
« We've proved that two does indeed go into one – and this is exactly what our stamping experts and toolmakers have been waiting for, for so long.. »

Andreas Fischer, CEO

After the gearbox had been constructed mechanically, it was time to focus on the development of the software, and this proved to be an exciting challenge for Herbert Högger, Head of Control Engineering, and Sven Kächelin, in charge of the relevant software development. This was a project where production at low speed was the main priority as opposed to stamping, and this meant that everyone involved had to approach the project from a completely different point of view. The work on the BPG 22 also provided new insights of a more general nature, for example in terms of process monitoring or the behaviour of BRUDERER fully-automated stamping presses at low stroke rates. What Herbert Högger found most

« The BRUDERER planetary gearbox is an incredible idea and we are sure that this extension of functionality will be a real success. »

Adrian Bruderer, company owner



Teamwork is the basis for successful development at BRUDERER

The three-level planetary gearbox

A planetary gearbox with all connection lines mounted on the main motor

impressive is the fact that the complete tonnage of the machine is literally in the hands of the machine operator. Kächelin found the development of the manual control particularly demanding. The requirement was for it to be able to work slowly but at high strength and this ended up creating various new functionalities. BRUDERER and the relevant suppliers were also involved on the hardware side, and whereas »speed at all costs« used to be the watchword, now it is more a case of »slower but stronger«. Consequently everybody involved in the BPG 22 project has come to see the BRUDERER stamping press in a new, previously unseen light.

The result of this teamwork is a three-level planetary gearbox with a ratio of approximately 1:19. The real heart of the BPG 22 is the software and the manual control for the machine. The main functionalities include the switching on and off of the gearbox in test mode, movement of the machine and adjustment of the ram height all via manual control, as well as production at low stroke rates. The data that is generated can then be transferred to the tool data memory of the machine's control system.

Everything in hand

The manual control enables the speed of the ram movement to be adjusted to different levels. Maximum press capacity and the highest torque levels can also be set and recorded. The machine operator can thus start the top and bottom dead centre individually and move the ram to precisions of a hundredth of a millimetre. The manual control can activate and control the functions that are required for test mode. This for example means that the ram and the upper part of the tool can be moved extremely slowly onto the lower part, imitating a stamping process and testing the efficiency of the tool. It is also possible to have the ram move slowly forwards or backwards in fixed geometrical increments or by regulated shifting using pre-set values. Backwards movement can be implemented depending on the tool, and the permitted press capacity can be changed where necessary. The operator can also specify break-off criteria for continuation or return stroke in the control system.

The manual control has several different indications. A multi-coloured display shows the maximum and current press capacity, the press angle in degrees and the distance of the ram from the lower dead centre. The control also enables error messages from the machine to be displayed and acknowledged. It is linked to the machine by a pluggable cable and can be used in front of or behind the fully-automated stamping press, with the necessary cable connections built in on both sides. If the manual control is not required, it can be stored in the wall mounting that is delivered as standard or attached by means of a magnet to a place of the operator's choice around the machine.

« The complete tonnage of the machine is literally in the hands of the machine operator. »

Herbert Högger, Head of process control

Functional and practical

Safety was always foremost in mind during the development of the BPG 22 since there are times when machine operators have to use their hands inside the tooling or stamping area when in test mode. The BPG 22 was thus constructed according to the European 2006/42/EG machinery guidelines, and is designed in such a way that test mode is automatically switched off if there is any kind of power outage. If the stamping press is then switched on again, it starts up in regular stamping mode. Test mode also needs to be able to be activated manually if required. The machine is constantly engaged when it is in test mode and the operator controls the stamping press manually. When it is switched off, the gearbox then goes into neutral and the machine is ready to resume its normal stamping functions.

The BPG 22 has no negative effects on the regular stamping process. On the BSTA 510 when it is in stamping mode, the usual stroke rates of between 100 and approximately 1100 strokes per minute, depending on the machine size, are still possible. The BPG 22 also has no effect on the footprint of the machine – the planetary gearbox is fitted in a way that the stamping press needs no extra floor space to accommodate it, which is another advantage compared with previous solutions which required separate equipment for test and production functions.

As far as company owner Adrian Bruderer and CEO Andreas Fischer are concerned, the BPG 22 which is not only a world first but also an incredible idea, and they are sure that this extension of functionality will be a real success. The gearbox was developed in close cooperation with a number of key customers and will be commercialised with a software stand, with any further enhancements worked out with customers based on needs and practical experience.

The new 22 kW planetary gearbox is available for the BSTA 510 with three different die mounting lengths of 950, 1100 and 1250 millimetres and will be delivered exclusively with new machines. Other versions for the various different types of BSTA will also be developed, depending on market requirements.

« What this means for customers is increased efficiency, reduced costs and space required, simple handling and more flexible work processes. »

Pascal Hardmeier, BPG 22 project manager

Unveiling at BRUDERER in-house exhibition

The BPG 22 planetary gearbox will be unveiled to members of the international stamping community at the BRUDERER in-house exhibition from 7 – 11 May 2012 in Frasnacht. The event will also feature the company's comprehensive range of high-performance fully-automated stamping presses, from the BSTA 200 through to the BSTA 2500, some of them fitted with peripheral equipment and which will be operational during the exhibition. The event will also be showcasing how used BRUDERER machines can be retrofitted, with a BSTA 400-95B2 from 1996.

The programme will show guests the various production departments as well as the assembly and the training areas, with high-quality food and refreshments also being served.

If you have not yet signed up to participate, it is not too late. Please contact us by 30 April 2012, either:

by e-mail: messe@ch.bruderer-presses.com
or telephone: +41 71 447 75 00

www.bruderer-presses.com

Simple controls with all the required functions

Weiss-Aug branches out with BRUDERER's support

Weiss-Aug, a leader in metal stamping, insert injection molding and assembly for the medical device industry, recently launched in-die laser welding at their East Hanover, NJ headquarters. They chose BRUDERER to assist them with their complex press needs. With BRUDERER's outstanding support effort during the design, installation and initial testing of the press, Weiss-Aug's manufacturing cell has been successful, and delivers substantial cost savings for their customers.

In-die laser welding

Tom Sheridan, Stamping Operations Manager and Jeff Cole, Vice President of Engineering at Weiss-Aug

Weiss-Aug was founded in 1972 by Dieter Weissenrieder and Kurt Augustin. In 1980 with the purchase of a molding company, Weiss-Aug expanded and began to develop its insert molding capabilities. Weiss-Aug now employs over 175 team members and services four key markets: the automotive sector (sensing and electronics), medical (safety products and surgical instruments), as well as the electronic and aerospace industries. The medical market is the largest sector, accounting for approximately two thirds of Weiss-Aug's business. Automotive follows closely as the second largest at about one quarter. The company sells their products to major markets worldwide, with customers in North and Central America, Europe and Asia.

All-encompassing development process

Quality, on time delivery and customer service are the guiding principles for Weiss-Aug since its inception over 40 years ago. The company manufactures over 1.5 billion parts every year and maintains industry-low PPM (parts per million) levels. For instance, in 2011, the PPM level for insert molded parts was 1.17 defective parts per million.

Weiss-Aug works closely with customers to better engineer complex components at a lower cost. They have extensive resources for research, part development, and prototyping; all of which are crucial steps in the overall process of bringing new products to market. The company believes that this process should be all-encompassing, and as such, has a program development team in place. This team consists of highly creative and experienced tool makers and engineers, focused on working closely with customers, and developing concepts into manufacturable programs.

In-die laser welding

Presented with a product concept that called for high strength requirements, Weiss-Aug engineered the product to utilize the unique process of in-die laser welding, a process which was virtually unavailable in North America, until now. This unique combination of metal stamping and laser welding inside the stamping press eliminates the needs for separate welding and assembly operations. This technology is ideal for the product, a type of disposable medical device component for one of Weiss-Aug's major customers.

Inside the progressive die, after the blanking and forming of the part, specially designed stations properly position the component for welding. Optimal welding can only take place when the modular laser heads have been accurately aligned and fixed within the laser module. As the press cycles through bottom dead center (BDC), short pulses of energy weld the two areas closed, where it is then 100% inspected by an inline vision system and singulated according to the customer's specifications.

Processes developed with BRUDERER's support

Having purchased their first BRUDERER machine some 35 years ago, Weiss-Aug decided to work in close cooperation with the Frasnacht Swiss-based company to develop their press needs for their in-die laser welding program. In addition to their new press needs, consideration for laser safety, and integration with the eight pieces of peripheral equipment was critical. BRUDERER was key in providing a customized solution for Weiss-Aug's complex manufacturing cell.

The fully automated stamping press purchased for this process was a high-speed BRUDERER BSTA 510-110 with integrated class 1 laser safety capabilities. The press is equipped with a longer bed to accommodate advanced progressive tooling with interchangeable modules. The press is also fully integrated with an Otto Vision system and an SLE Microlub automated oiler, Fuchs gas extraction system, Festo air manifold, and PLC (Programmable Logic Control) solenoid bank. It features the BRUDERER B Control smart press touch screen which is also used for externally controlling the laser.

»Weiss-Aug has a long relationship with BRUDERER, and exclusively uses BRUDERER presses,« explains Tom Sheridan, Stamping Operations Manager. »With the addition of a specially-equipped press for in-die laser welding, BRUDERER is helping Weiss-Aug to remain the pioneer and leader in precision metal stamping.« Weiss-Aug's manufacturing and engineering teams worked closely with BRUDERER engineers and received outstanding support during the design, installation and initial testing of the press.

»Our customers have been very impressed by Weiss-Aug's solutions utilizing BRUDERER technology, which has resulted in significant cost savings for them,« adds Jeff Cole, Vice President of Engineering. »The customer, a FTSE 100 company, requested a presentation of pictures and videos for their executive board.«

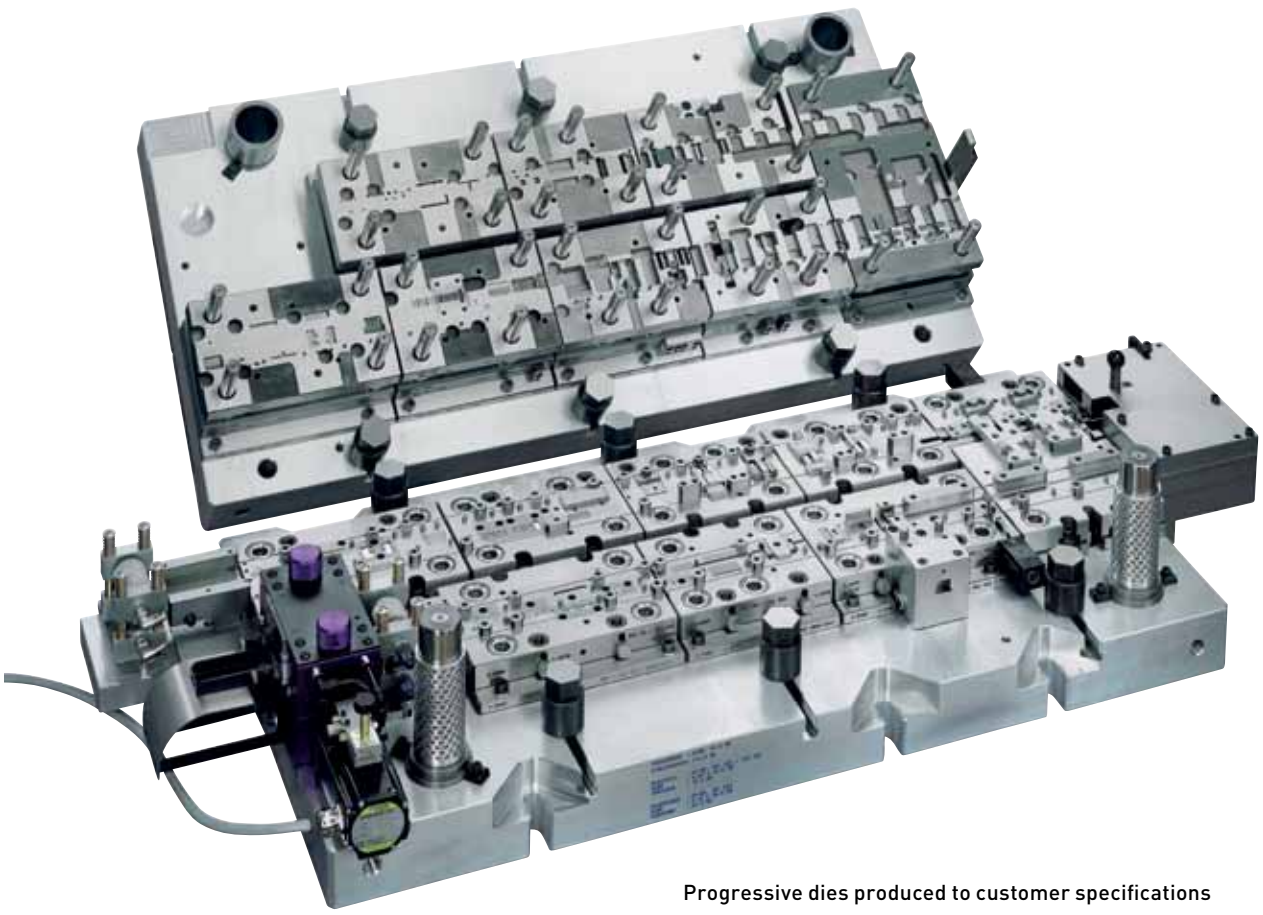
Jeff Cole concludes: »With BRUDERER's support, we have proved that combining metal stampings with laser welding can produce precise components with complex requirements through a cost effective and efficient manufacturing process. The medical device market shows continued growth and will continue to change almost constantly; but thanks to our highly-skilled and creative tooling and design engineers, a strong apprenticeship program, and a continued focus on advanced technologies, Weiss-Aug will continue to be a valued partner for medical device companies.«

www.weiss-aug.com

Precision down to the last detail as illustrated by this medical safety product

hapema – small but perfectly formed

Precision metal-working company hapema, based near Pforzheim in Germany, are specialists not only in demanding stamping technology but also in highly-developed polished single-stage and progressive die tools for international customers.



Progressive dies produced to customer specifications

The company is headquartered in Engelsbrand, Germany

The success story began back in 1988 when Hans-Peter Christmann and Marc Bechtle first set up hapema GmbH. The company, based in Engelsbrand in Baden Württemberg, has grown since then and now provides ultra-high-precision stamped parts and tools for reputed international customers as well as local firms. The precision for which their products have come to be known also applies to hapema's reliable delivery times. Customers know that their orders will always be delivered on time – a precious commodity in this day and age, explains factory manager Ralf Thom. The basis of this success has 65 different parts – namely the company's various employees. Their knowledge, motivation and meticulous work ensure that everything produced by hapema meets the most stringent criteria. Initial and further training is therefore part of the company's credo, as is the formation of younger employees. That almost all trainees choose to remain with the company is proof of the quality of the training and also the team spirit.

Customer demands are becoming ever-more complex when it comes to precision tool-making and stamping techniques, requiring hapema to respond with the latest in technology and with innovative solutions, the latter coming not from the development department but directly during construction, as often as not in close cooperation and with the agreement of the respective customers. Bechtle, a talented design engineer with innovative ideas, is always looking for new ways to come up with solutions while Christmann is someone who knows how to produce a part in the most efficient and cost-effective way. It can happen during the early phases of a project that a customer acts on a recommendation by the hapema team and adjusts the specifications of a part to achieve the desired effect in an optimum way. hapema see themselves as expert partners for their customers, aiming to provide them with high-quality solutions. And since 75 per cent of their main customers are from the automotive industry, the company made sure that it achieved ISO TS 16949 certification a number of years ago. Around a quarter of hapema's products are used in the electrical engineering, telecommunications, metal fittings, household appliances and domestic installations industries, to name just the most important. The main geographic concentration of their client-base is in Western Europe, primarily Germany.

hapema's 65 employees work in a factory stretching over some 4,500 square metres, producing millions of stamped parts each year in a two-shift set-up and with up to 60 precision tools. Complex stamping parts are made in single-stage progressive die tools comprising several reels, and where necessary additional assembly parts and wires are also fed into the stamping process. Another of the company's fields of expertise are perfectly-fitting inlay parts and components made of bondable materials which have to be produced according to the strictest purity requirements. Other than a special solution for client-specific blister packs, hapema has deliberately chosen not to offer additional production phases such as overmoulding or material finishing. Where necessary, they call on tried and tested partners whom they have come to trust over a number of years and who are as reliable and efficient as hapema themselves.

The precision tool-making can feature single-stage and progressive die tools, draw tools and modular tamping tools, based on the customer's requirements or own construction. The more difficult the job, the more exciting it is for the team from Engelsbrand to come up with a solution. A good example of this is the hapema draw concept, which enables stamped individual contacts to be correctly positioned and further processed within the tool. The trimmed, bent and separated partial grids are thus accurately positioned and held in a draw. After the separation process, the draw moves on to the pre-programmed end location, where the parts for example can be picked up at precisely the right point by an assembly robot and transported into the moulding tool. The traverse paths, cycle times and engineering of the tapping process of the draw can be adapted to meet the exact demands of each customer.

hapema now relies exclusively on BRUDERER automated stamping presses for the testing of its precision tools and the production of high-precision stamping parts. Christmann has come to know and appreciate the qualities of the Swiss-made machinery for over 30 years now, and recognises in BRUDERER all of the characteristics which have helped hapema make a name for themselves, namely neatness, punctuality, reliability and an excellent service in the unlikely event that there is a defect with a machine.

Precision metalwork, as shown here in the stamping department

hapema also relies exclusively on BRUDERER technology for its feeds, which are as high-precision and reliable as the stamping presses, with which they are of course set up perfectly to correspond.

The latest addition to hapema's machine park is a renovated BSTA 800-145, which was added in 2011 since the existing fully-automated BRUDERER stamping press, with a press force of 80 tonnes, was already being made to work at full capacity and therefore unavailable for tool-tests in this press range. Some 20 experts are employed in the stamping room, operating with a press capacity range of 25 – 80 tonnes and working on a wide variety of reel materials up to 2.5 millimetres thick and 200 millimetres wide. The machines work within a tolerance of 0.01 millimetres at up to 1,000 strokes per minute.

hapema is anticipating the processing of bondable material that has to be stamped according to the strictest purity levels as a future trend. What is clear is that developments are heading towards ever longer precision tools which combine various tasks in one. hapema knows however that in the future, the company still needs to continue to focus on its core competency: namely precision metal-working.

www.hapema-gmbh.de

KUM invest in quality and in the future

After using locally sourced presses for a number of years, Korean-based automotive component supplier KUM decided that it was time to move to the next level – and this is where BRUDERER came in.

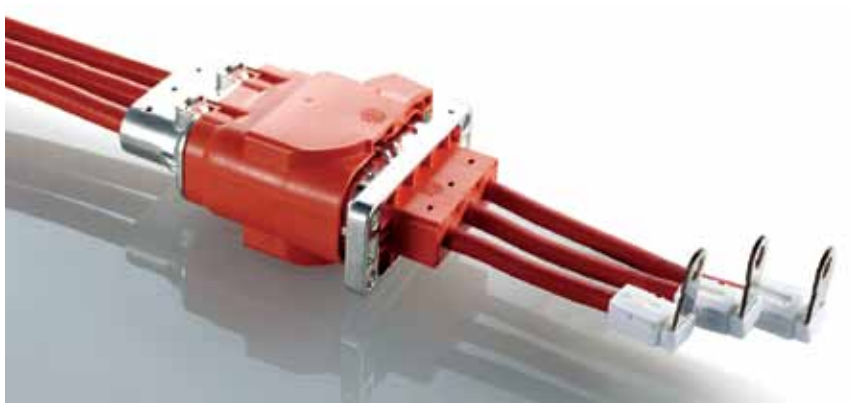
KUM was set up in 1987 to market connector technology from their Japanese parent organisation, the Union Machinery Company. Since then, KUM has continuously focused its investments on research and development, employing highly qualified personnel and training its employees on an annual basis. KUM now develops its own parts in-house, providing fuse boxes, band cables, clips and connectors for all of the big names in the automotive industry on the Asian continent, including Hyundai, Kia, GM Korea and Renault Samsung Motors.

The company has various locations around Korea, with its headquarters and a factory in Sangbuk, which is also home to its R&D centre, injection moulding plant, mould manufacture and maintenance facilities. They also have two production sites in Duseo, both of which house injection moulding plants, terminal plants, rubber seal plants, assembly plants and a branch office in Gyeonggi where the marketing team is located. With 214 people working at the headquarters and factory in Sangbuk, a further 227 at the two production sites in Duseo and 16 at the branch office in Gyeonggi, KUM has no fewer than 457 employees. They also have four subsidiaries, one in Korea and three in China. Turnover in 2010 including these related subsidiaries was KRW 140 billion (c. EUR 95 million).

Investing in talent

The local workforce is a rich seam of talented specialists, all of whom are highly hard working and – as is the case throughout this technologically advanced country – experts in various fields of IT. KUM also works in conjunction with the Korea Institute of Industrial Technology (KITECH) and Japan Mitsubishi Cable Industries to ensure that the flow of talent into the company – and others like it – continues.

KUM's continuous investment in R&D and insistence of the use of cutting-edge equipment and process innovation, has enabled the company to move on from relying on imported technology and develop its own connectors, and thus attain the leading position that it occupies today. The R&D department was established in 2001, and KUM has continued to give it full support for the study of the latest equipment, tools and materials and also testing equipment. This meticulous attention to detail means that KUM was able to weigh up all the pros and cons before deciding to use high-tech production equipment such as BRUDERER presses. And whenever new equipment is acquired, KUM always sends its operators to the machine supplier, whether local or overseas, for training so that the new equipment can be used to maximum effect.



High voltage connector

In this respect, training is also given the highest priority with employees given anything between three months and three years continuous formation, be it overload training, external formation or internal on-the-job training.

Investing in technology

Over the years, KUM has come to rely on BRUDERER's fully automated stamping presses to get the most in terms of productivity and quality and to drive the company towards peaks of international competitiveness. They have no fewer than 17 presses, including BRUDERER presses, in operation at their production site in Duseo, with press capacity ranges of between 10 –160 tonnes. The machines are used to stamp copper alloys at speeds between 200 – 1,000 strokes per minute, to tolerances of 0.01 millimetres.

At the outset, KUM used Japanese presses as their main production machines, and then switched to a cheaper, domestically manufactured press in order to reduce production costs. This proved to be a false economy however, as they could not get satisfactory results for the production of automotive connectors, which have highly precise, functionally terminal parts. The Japanese presses which the company still had on site had been in use for over 10 years and needed to be overhauled, so KUM decided to look for a new press with increased levels of accuracy, productivity and durability.

Switching to BRUDERER was by no means an easy decision however. The presses from the Frasnacht-based company are more expensive than their Korean or Japanese equivalents, and due to their different levels of technology, they would require a certain amount of retraining for the operators, who put up some initial resistance.

»We visited BRUDERER AG before we purchased a BRUDERER press for the first time and we were highly impressed by the fact that the company handles all the spare parts requirements of our machines which were built 10 years ago,« said Ki-Taek, Han, KUM Executive Director. »It inspired us with confidence straight away and we now see BRUDERER as one of our most trustworthy partners.«

Mr. Ki-Taek, Han – Executive Director of KUM

KUM knew that the BRUDERER machines would justify any increased initial investment – and more – thanks to productivity increases and cost reductions. The company now relies on BRUDERER presses and has continued to add extra equipment to its machine park, which now contains a BSTA 500-110 with B control, a BSTA 250-75 with B control, a BSTA 510-110 with B2 control and a BSTA 510-125 with B2 control. One of the main advantages for KUM has been the reduction in tooling maintenance costs and of course the stabilisation in part quality thanks to BRUDERER's high levels of precision.

2012 promises to be a big year for KUM which is set to unveil a new and innovative production factory at Choongju, to service customers in the centre of the country. This large-scale construction project requires significant investment and of course faith in the company's capacity to increase output. And with productivity having increased from original levels of 400 spm to 700 spm thanks to the switch from local presses to BRUDERER machines, along with the reduction in tooling maintenance costs that these new presses bring, KUM can approach this new venture with confidence – both in their own abilities and in the support they will get from their experienced partner from Frasnacht.

www.kunion.co.kr

KUM Co., Ltd. – facts and figures	
Headquarter	Sangbuk, Korea
Established	1987
CEO	Sung-Won Jeon, President
Certified	QS9000, SQ (service quality) for moulding and rubber sections, ISO/TS 16949, ISO14001, Single PPM certification
Customers	Automotive industry
BRUDERER presses used	BSTA 500-110 and BSTA 250-75 with B control BSTA 510-110 and BSTA 510-125 with B2 control