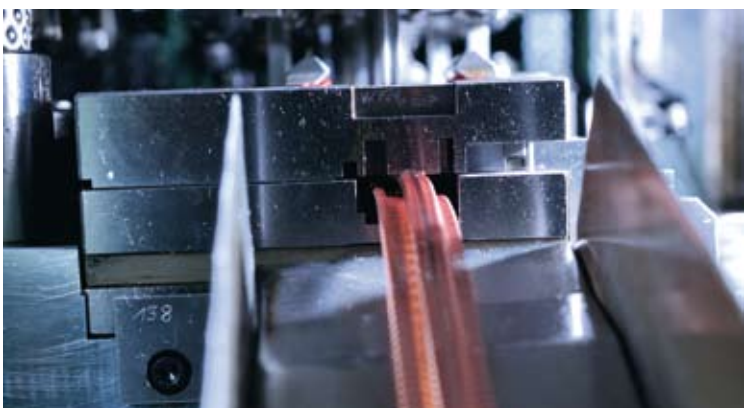




1|09

STAMPER

Magazine for high-performance punching technology



Bigger die window to win new customers for Zetka

Zetka, based in Füssen in Bavaria, prides itself on offering customers a blend of know-how, commitment and perfection. The company enjoys rising to the challenge of making complex punched and formed parts, particularly since acquiring the new BSTA-510-125B. [Page 4-5](#)



When your press starts showing its age

Bruderer servicing can rejuvenate your machines. Even the oldest equipment has the potential to be turned into a quality machine once it has been overhauled. [Page 2](#)



Micro-stamping – not just for watches

Punching tiny parts with absolute precision is what Swiss company Hänggi does best, using high speed precision servo feeds and making sure that its presses never have to run at full capacity. [Page 7](#)

Editorial

Automatic punching presses get a makeover



Time – a precious commodity

Everyone is talking about the economic situation and the uncertainty and challenges that lay ahead of our industry. It is obviously having an effect on each one of us, in our daily lives, our business dealings and in our thoughts and actions.

There is no magic formula to resolve the current crisis and even political and economic experts have been left scratching their heads. At the moment, there seems to be no end in sight. Each of us is trying to find our own individual ways of dealing with the situation – as we have all done on many occasions in the past – though of course personal circumstances are all different. A number of companies have had to cut working hours due to the sudden collapse in incoming orders, while others are being forced to take far more drastic measures.

What we all do have is time that we should use where possible, and it is a precious commodity. Ideally, this is the right moment for targeted small investments which will pay off once the economic recovery starts. Production facilities that have been operating almost round the clock in recent years can now get the full service that they need. Employees can get targeted training, refreshing their specialist knowledge and their motivation and increasing their productivity, which is obviously a real benefit to the company.

It is just as cost-effective to have older machinery and accessories overhauled and retooled to bring them up to the latest technical specifications. At the RESALE trade fair in Karlsruhe from 22 – 24 April 2009, we will be showing you what we can do with used Bruderer machines, so do come and see us at RESALE or contact one of our competence centres if you are interested.

At Bruderer, we are maintaining our focus on you, our customers, and are providing you with offers that meet your requirements, however much these requirements may be changing in the current situation!

Andreas Fischer
CEO

Imprint:
 Publisher: Bruderer AG Stanzautomaten
 CH-9320 Frasnacht, Phone (+41) 71 447 75 00
 Fax (+41) 71 4477 77 80
 stamper@ch.bruderer-presses.com
 www.bruderer-presses.com

Project: Jens Ellensohn Imaging Establishment,
 Industriestraße 32, FL-9491 Ruggell
 Texts: Bernhard Foitzik, D-67434 Neustadt,
 Claudia Gravino, Marketing Bruderer AG
 Translation: Drew Lilley, drewlilley@bluewin.ch
 Graphic, Layout: Christoph Lenz, 47grad.eu
 Photography: Title, pages 4,5,6,7: Jens Ellensohn;
 page 3: Morrisey Technology and Clamason Industries;
 all other pictures: Bruderer AG

All articles of the STAMPER magazine are protected on copyright. The respective companies are liable for their articles and illustrations. The right for publication, translation and electronic storage go over the publisher by acceptance of the manuscript.

While Bruderer is reputed the world over for precision, performance, reliability and value for money, it is not just our proven new generation of high-performance automatic punching presses that illustrate this. After inspection and retooling, many older machines are still providing reliable service.

Our automatic punching and forming presses have been working away under constant load for decades now, producing components of consistently high quality. Even the most reliable machinery however will suffer wear and tear with time and need some renovation: either that or it will sooner or later have to be measured against today's productivity demands which can only be achieved by the use of modern technology.

Bruderer: Quality right down the line

There was a time when in cases like this, our customers were forced to fall back on services provided by second-hand machinery dealers, who serviced our machines to the best of their abilities but did not always have the necessary original parts or indeed expertise for the job. The result was therefore unsatisfactory, and with the performance and quality no longer coming up to previous standards, the Bruderer brand was affected accordingly. This is why a number of years ago, we began to completely overhauling our automatic punching presses and feeders in-house and bring them totally up to date. This enables us to ensure that the work is carried out with the necessary specialisation and technique which in turn meets the widely known and respected Bruderer renowned quality standard. Therefore the automatic punching presses which we service provide the same levels of quality as when they were a new machine.



Original Bruderer parts guarantee top Bruderer quality.

Used machinery which is refurbished by Bruderer is in demand all around the world, a prime example of this was a reconditioned BSTA automatic punching press that was almost 20 years old finding a new buyer within hours of the "Resale" trade exhibition opening in April 2007. We also help our customers to find pre-owned Bruderer machines and peripheral equipment such as acoustic cabinets and coilers ourselves.

This service is another example of how customer requirements are always the main focus for Bruderer. As well as the head office in Switzerland, our competence centres in Germany, Singapore, Japan, China and USA also provide overhaul services.

www.bruderer-presses.com



Trained specialised employees bring Bruderer automatic punching presses up to the latest levels of technology.

Contact
 Bruderer Competence Centres worldwide:

Bruderer AG, Frasnacht (Switzerland):
 service@ch.bruderer-presses.com

Bruderer GmbH, Dortmund (Germany):
 info@bruderer.de

Bruderer Presses (Far East) Pte. Ltd., Singapur:
 info@sg.bruderer-presses.com

Bruderer Machinery (Suzhou) Co. Ltd., China:
 info@cn.bruderer-presses.com

Bruderer Presses K.K., Japan:
 sales@bruderer.co.jp

Bruderer Machinery Inc., USA:
 info@bruderer.com

Bruderer at RESALE from 22 – 24 April 2009 at the exhibition centre in Karlsruhe

Trade show	Date	Country
RESALE	22.04. – 24.04.09	Germany
Metalloobrabotka	25.05. – 29.05.09	Russia
Metalform Mexico	02.06. – 04.06.09	Mexico
Stanztec	16.06. – 18.06.09	Germany
MSV 2009	14.09. – 18.09.09	Czech Republic
Corte & Conformacao	05.10. – 07.10.09	Brazil
Productronica	10.11. – 13.11.09	Germany
METALFORM / FABTECH	15.11. – 18.11.09	USA
DMP 2009	18.11. – 21.11.09	China
BLECHEXPO	01.12. – 04.12.09	Germany

At this year's Resale fair, Bruderer will be displaying a BSTA 25H, built in 1979 and which has been fully mechanically and electrically overhauled and decked out in the new white Bruderer standard colour.

Visual documentation will give customers and interested parties a first impression into how Bruderer swaps „new machines for old“, taking second-hand equipment in its original state and servicing it into a (virtually) new machine.

Whether you are interested in the overhaul of an old Bruderer automatic punching press or the purchase of a used BSTA, the Bruderer sales staff at Resale will be looking forward to meeting you and discuss the various solutions on offer.

Bruderer GmbH: Hall 2, Stand 401

Morrissey Technology – synonymous with versatility and diversification

Morrissey Technology, headquartered in Malaysia, is an engineering company with strong technical foundations. It has experience and specialist knowledge in various sectors and prides itself on being a one-stop industrial solutions provider for all kinds of manufacturing requirements in various applications, including automotive LEDs lamp level II assembly, high-speed precision metal stamping, sheet metal work, assembly and electronic parts.

Morrissey Technology is an expert in the design and manufacture of high-speed precision stamping tools and metalwork. With many years of experience to its name, the company has made a name for itself in the manufacturing of precision micro-electronic mechanical components such as connectors, lead-frames, value-added assembly and micro-motor components.

Its wide client base includes leaders from the optical, electronics, telecommunications and automotive industries, and significant investments in machinery and facilities have enabled the company to offer a comprehensive range of products and services from the design stage all the way through to semi-finished goods.

Enhancing precision and productivity with Bruderer

The selection and adaptation of an overhauled Bruderer high performance stamping press BSTA 25A back in 2007 took Morrissey's capabilities to another level, and by the end of 2008, another seven machines had been added, four of them with the new „B“ control version. The decision to invest in Bruderer paid off handsomely in 2007, helping to increase production capacity for high quality

products with the added advantage of reduced tooling downtime. The control offers a dynamic ram adjustment and variable tool changing, thus making a real contribution to reducing the set-up time to a minimum.

To position itself as the one-stop shop in the connector pin business with a range of value-added services to customers, Morrissey Technology intends to expand its production facilities to a total of 20 machines over the next two to three years, allowing the company to develop a new product range and penetrate additional markets.

Excellence and continuous improvement for the customer's benefit

Morrissey Technology will continue to strengthen its core competencies in design, development and the production of microelectronic components by using its R&D facilities to promote a safer environment, with the aim being to collaborate with high-precision tool-makers and other high-end stamping houses. Its philosophy is to achieve total customer satisfaction by providing quality products and services with the focus on excellence and continuous improvement.

The company has obtained ISO-9001, ISO-14000 and TS-16949 certificates in recognition of its achievements in quality control processes, and has built up strong relationships with such well known companies as Phillips-Lumileds, Hirose, FCI, Molex, Minebea-Matsushita Motor, Agilent, Jabil, Cisco and Benchmark.

www.morrissey-tech.net
www.misb.net.my



Morrissey Technology producing for the automotive industry on Bruderer high performance punching presses.



Clamason directors Anthony Ridding (left) and Philip Clarke (right) receiving the "Gold Award for the Business Environment Charter".

Thanks to close cooperation at every stage of production between Clamason Industries, Bruderer UK and Simac Masic, an exemplary engineering solution for a critical small precision component has been created which exceeds the stringent quality requirements of an international healthcare original equipment manufacturer OEM.

The growing number of medical devices which feature Clamason's precision pressings now extends well beyond the more traditional range of pressed scalpel blades, pins, rods and implants. All of the company's medical components are fully process-validated using design, installation, operational and production qualification protocols

Clamason presses home critical engineering advantage

(DQ, IQ, OQ and PQ). Furthermore, the Clamason team is also trained in the use of URS (user requirement specifications), CAPA (corrective and preventative actions) and GMP (good manufacturing practice) – all essential standards in gaining medical industry approvals.

A winning team in healthcare applications

For this particular application, Clamason's new state-of-the-art Bruderer BSTA 250-75B press with decoiler and crop-off station runs in a dedicated cell at speeds of up to 800 strokes per minute, producing two parts per stroke. The 25-tonne, PC-controlled press has a bed length of 750 mm and features quick-change tooling for JIT manufacture.

A Simac Masic „Stampede“ 3D real-time vision system ensures zero-defect production of the intricate and highly toleranced healthcare components which are fed from this press in a continuous strip. The in-line inspection of 100% of the thin metal parts, which makes quite a change from the previous UK-wide system of sample-based inspection based on periodic checks and charts of trends, requires the measurement of four key features to a 50-micron tolerance.

Versatility is key

In other applications for the Bruderer BSTA 250-75B, ten or more components can be stamped out per stroke at over 1000 strokes a minute, and if four or five measurements are required per part, the Simac Masic „Stampede“ inspection system can perform up to 50,000 measurements per minute!

The Clamason engineers were trained comprehensively on the new machine at the Bruderer plant in Frasnacht, Switzerland, where the company was founded over 60 years ago in 1943, going on to become a world leader in stamping technology and a byword for precision. Most spare parts are also held conveniently in stock at the Luton headquarters of Bruderer UK, who offer an impressive door-to-door delivery service within 24 hours.

www.clamason.co.uk
www.bruderer-presses.com
www.simac-masic.com



Medical washer produced on Bruderer BSTA 250-75B.

Maximum die space

Zetka Stanz- und Biegetechnik GmbH & Co. KG has a pretty simple formula for success: their three ingredients are know-how, commitment and perfection.



In the future, tools will be made a little larger at Zetka thanks to the extended bed width of 1250 mm on the new BSTA 510-125. The punching press guide system is also ideally situated along same die line level as that of the press tool.

The company is based in Füssen, in the Allgäu region of Bavaria, and manufactures punched and formed components from strips and wires, the more complex the better. Many punched and formed parts are then processed further, either sprung with riveted or welded contacts or electro-plated, with punched parts often combined with plastic.



Klaus Zettlmeier: „We want to grow in a manageable way.“

The company stands out from the crowd in a number of ways, not least because it has just invested in a new high-performance automatic punching press – yet another example of Zetka looking to the future.

Together with its own tool-making plant, Zetka has an annual turnover of some 12 million euros, 60% of which is generated by the automotive industry. The electronics sector is its second major customer, providing some 20% of turnover. There have been plenty of recent innovations in the electrical cabinet making and household electronics sectors, as CEO Klaus Zettlmeier explains. „We are focussing on these technologies and markets to differentiate ourselves and to create some balance to the amount of work we do with the automotive industry.“ The batches and production figures have risen continually over the years, with 50,000 parts being a very conservative estimate. As for the future, the sky's the limit...

The company was founded in 1968 and currently employs 130 people who work in a production area stretching over 7,000 m². Klaus Zettlmeier and Christian Kallenbach are the CEOs – with both men extraordinarily good at what they do. Interestingly enough, it was actually their fathers

who created the company over 40 years ago, with the two sons taking over the reins in 2001 and committed to continuous growth as their main target.

Punching simple parts is not what Zetka is all about. This is a company which thrives on added value, with Zettlmeier explaining that „we have adopted a system of handling large orders as quickly and efficiently as possible“. The standard of production is on a level that is simply too expensive for cheap, simple parts however, but as both CEOs point out, „this is not what we are aiming for“.

Christian Kallenbach

„Here at our location we can only make money if we use the best equipment and machinery,“ says Zettlmeier. The company invests regularly in the future to make sure that costs are evenly spread out, particularly since the demands both of their customers and of their own high standards of quality require more facilities than the average manufacturer. The CEOs are using the company's resources in a calculated way. „We are on the attack as far as the competition is concerned and investing in technology that promises us an advantage.“

Zetka already has eight Bruderer automatic punching presses, and at the beginning of March assembly began on

» The servo feed has a variety of advantages that we can use straight away. «

the latest machine, a BSTA 510-125B, which is an automatic punching press with a 50-ton pressing capacity and a 1250 mm die space. The two CEOs first saw the machine in action at the Euroblech 2008 trade exhibition. Their main reason for buying was the die bed area, which at 1250 mm is significantly larger than on current machines. The exhibition also gave them the opportunity to look at the additional equipment available for other machines, which helped them make up their mind in favour of the BSTA 510. An example of this is the BSV servo feed which is available as an option. „The greater compatibility was what we really liked about the Bruderer machine,” said Zettlmeier, explaining his choice. The optional BSV is completely integrated into the Bruderer B-control.

The prospect of new customers and their demands also determined the choice of the servo feed. It has a whole host of advantages that can be implemented and directly put into practice, one of those being the simple retooling. And since Zetka likes to offer added value to its customers, the two CEOs both saw the possibility of integrated solutions. „This specific solution gives you the option of a second feed that only needs to be installed as and when necessary, and does not cost any more.”

The operating staff at Zetka has plenty of experience with the control system of the new machine as it the same as the one on the existing equipment. „Our people are fully up to speed on the B-control,” says Kallenbach, before going on to list some more of the advantageous features. „We have full confidence in the technology and reliability of the



Christian Kallenbach: „The new machines give us the kind of advantages that even the Asian producers envy.”

Bruderer machines, and these are very important criteria whenever we are preparing an order.” The quality assurance employees use the internal audit instrument to improve the functioning, meaning that the strengths and weaknesses of each product can be consistently analysed.

As mentioned before, the new machine is an investment in the future. „It will enable us to attract new customer groups as well as offering our regular customers a new range of production possibilities.” There have as yet been no orders which would have required such a machine to be



One of Zetka’s visions is having quality management which aims to achieve zero defects with in the production. Clear and accurate production is both a welcome side effect and a strategy at the same time.

purchased, but Kallenbach and Zettlmeier are confident that after a decent start-up phase, they will obtain a high workload for the press. Benchmarking was obviously carried out before the new Bruderer press was ordered, and it revealed that Zetka customers had not requested large-volume units since they believed that the 30-ton press was state-of-the-art as far as machinery was concerned. „There is therefore the potential to reach capacity purely with our existing customers,” says Kallenbach.

Healthy running-in period

The new automatic punching press will not be operating at full capacity from day one. Whenever the current machines are being pushed to their limits or urgent orders come in, the new machine will be brought in to show its qualities and prove its worth. For any future orders which require all new functionalities to be fully exploited and for which a new tool has to be built, it could take as long as five months until the new tool is ready to go into production. Klaus Zettlmeier smiles, preferring to see this particular situation as a challenge, saying „it’s not as if we do not know what to do with the machine.” He recalls a similar situation when the first 5-axis machining centre was bought. This „crazy investment” was followed a mere three months later by the next order for a new machine – a bigger one. Processing machines such as the DMU 100 mono block and electric discharge machines with fully automated change heads are part of the incredibly well equipped die shop, which operates as an in-house service provider. This section recently moved into a newly fitted and fully air-conditioned site and is working to such a capacity that there is barely the time to even think about external orders. The lion’s share of tools remain in-house at Zetka for serial production with around 10% going to external clients who are all Zetka customers. Whenever there is any talk of further expanding Zetka activities, „plastic parts” and the combination of injection moulding and punched parts are two recurring themes. „The one thing

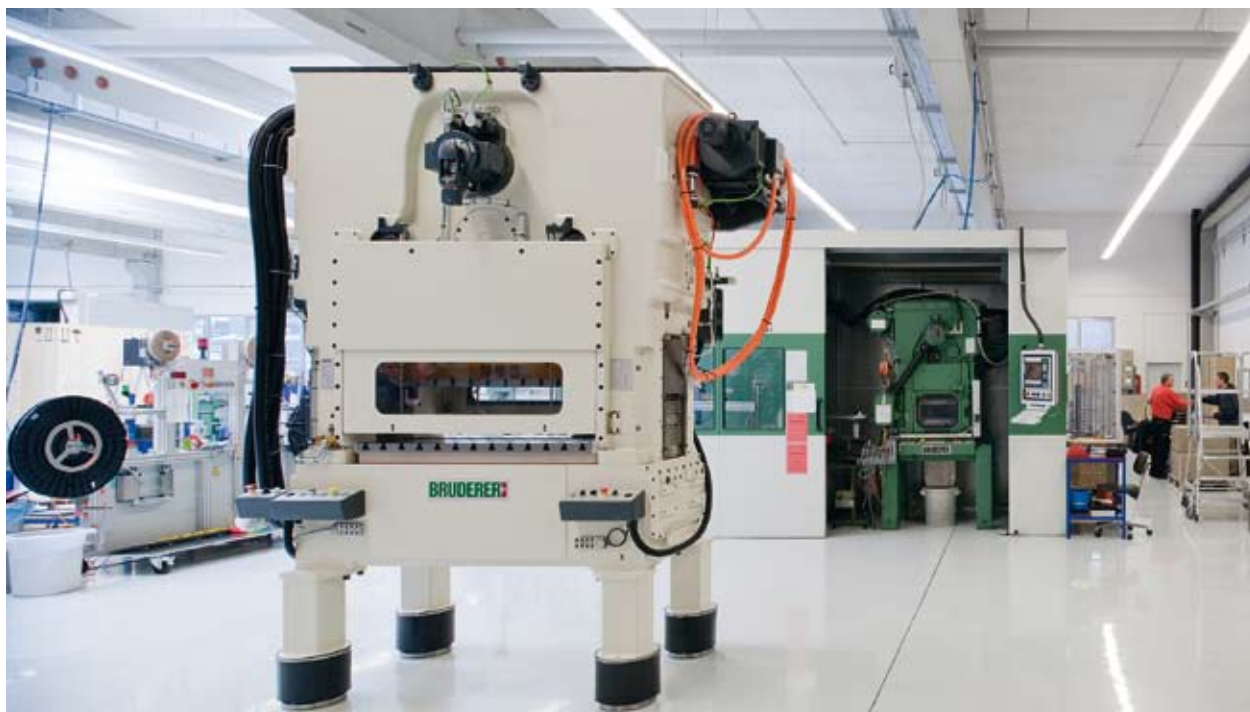
that we want to be for our customers is a total contractor,” states Zettlmeier. In the same way that Zetka specialises in high-quality, complex punched parts in large volumes, they are also specialists on the plastics side, and Zetka is already working with two highly specialised suppliers. „We’re well on track as far as this is concerned.”

Having state-of-the-art technology in-house and knowing how to make the most of it is of the utmost importance for the company as far as the CEOs are concerned, and this applies to the machinery as well as the tool-making technology. New innovations are always being tested out, for example using materials such as ceramics or carbides. „We are mainly trying to find out two things – is it worth developing in terms of our punching tools and will it give us an advantage in terms of maintenance?” says Klaus Zettlmeier, explaining the two main priorities.

www.zetka.de



Well versed: Staff were already acquainted with the B-control system on the new BSTA.



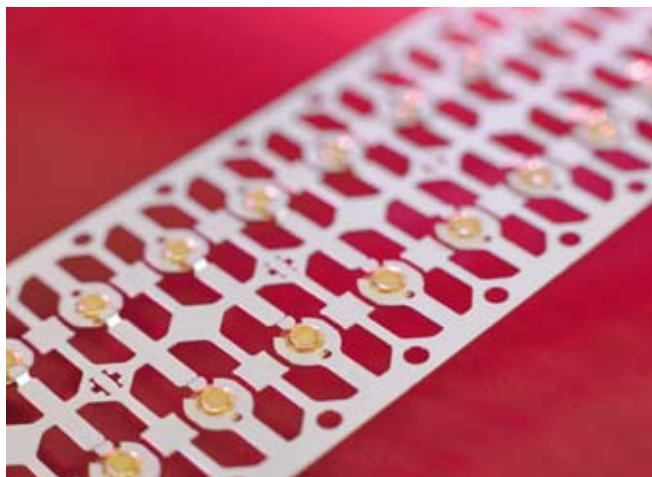
It is worth providing extra space to make working areas comfortable – good accessibility makes logistics simpler. Peripheral modules such as coilers can be easily adapted.



In-house tool production is Zetka’s mainstay, with new technologies and quality top of the list of priorities.

Infinite quality within the speed limit

What does the term „high infrastructure“ really mean at a production company like Rolf Hänggi AG? Visitors find out as soon as they arrive – it looks as if the firm has only just moved in. Everything is “state of the art”, and the sense of cleanliness is an outward reflection of the company’s discipline.



Head of punching Marc Maradan, tracks down even the slightest imperfections in micro-punched components with a magnifier.

Hänggi’s mission statement reads as follows: „We want to be at the forefront of the small, precision sector of micro-stamping“. The Grenchen-based company is achieving its mission, supplying almost all of the high end watch manufacturers in Switzerland and enjoying global demand for its punched parts.

The company relies on its ultra-modern high-performance machinery, with very few pieces of equipment in the tool room more than three years old. The Bruderer automatic punching presses in the stamping room are always operating but never pushed beyond their limits, and therefore have an extended life of several years. All of the machines are grouped together according to task and well spaced out. This is also the case in the air-conditioned area which houses the wire eroding machines in the tool room, while the floors, tool cupboards, shelves and other facilities are all brightly coloured.

The company was founded in 1990 by Rolf Hänggi and began production of punched parts and tool manufacture two years later. Regular investments in machinery right from the very beginning have already paid off, with the com-

pany always taking into account the lifespan of a machine in terms of costs. After all, high efficiency standards, an appropriate level of automation for the machines, longer tool life and qualified personnel can easily cover a higher initial outlay. When capacity bottle-necks had to be dealt with using less sophisticated presses in 2007, it demonstrated how tedious it is to work with conventional equipment, as Pascal Hänggi, the founder’s son, recalls: „Being ideally adapted to the demands of our customers means that we think in terms of processes – indeed in complete processes, and we organise our infrastructure and our machines around this.“

You would need a calculator to work out the average size of the production runs and batches at Hänggi, and even then this would not reveal much information. The watch-making industry purchases punched parts in quantities usually reserved for manufac-

turing industries, only these parts cannot be produced by hand. Lead frames make up 60–70% of production and are primarily for the electronics industry, and overall, as Pascal Hänggi points out, „we currently have a capacity of 15 – 20 billion parts“.

The perennial favourites are lead frames for LEDs which are implemented throughout almost every different sector. Other products for semi-conductor producers and the automotive industry are also very much in demand, while solar and medical technology are significant growth sectors for the company.

Around three-quarters of all production is exported to Asia, even though larger orders from

the Swiss watch-manufacturing industry have been coming in over recent years.

„Although we are exporting from one of the most expensive countries in the world, we are still managing to remain competitive,“ says Hänggi junior, who also sees potential in the domestic market. „We export certain components which might also find some customers here in Switzerland.“

The secret of Rolf Hänggi AG’s success may well stem from the fact that the company is less concerned with competing with other pressing companies than with offering new processes. „We set great store by precision and repeat accuracy and also how we can solve any problems our customers have,“ Pascal Hänggi continues, explaining that etching technology is a very competitive process when it comes to lead frames. Complex forming technologies can challenge more expensive turned parts, while punching is often an alternative to laser technology in the medical sector.

Sticking to the limits

Hearing aids for example require a piece the size of a fingernail to be punched containing no fewer than 196 holes – in fact including the forming element, the tool has almost 300 punches. Tools with even more punches are far from uncommon, and Marc Maradan, in charge of the stamping department who has been with Hänggi right from the beginning, swears by Bruderer presses for these and indeed all other dies.

He certainly takes care of the machines, making sure none of the presses are operated at maximum stroke rate or loaded to the limit. „I can work to a far closer tolerance when the machines are not at full load,“ explains Maradan,

» Clear workflows and well documented processes are what really matter. How many parts we produce per hour is not important to us – how many we produce per week is. «

Pascal Hänggi



Careful product handling, even down to the peripheral equipment.



Coils are wound automatically.

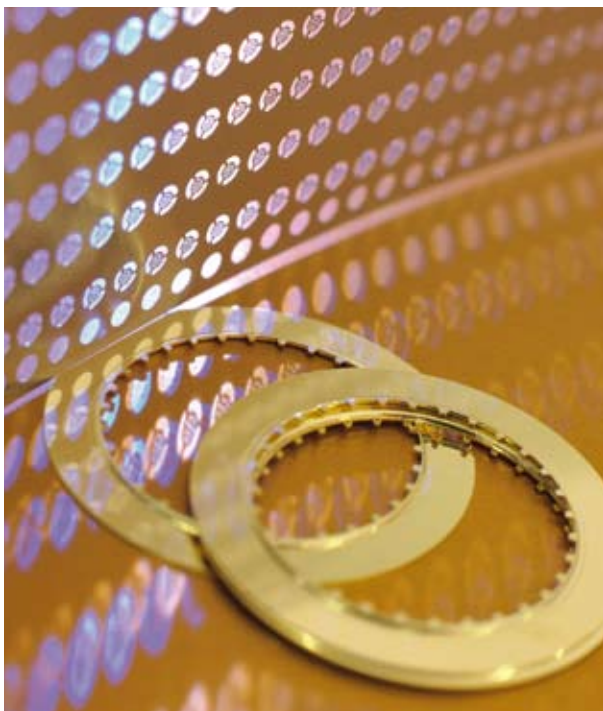


The operations room: Hänggi specialists are often asked for advice on micro-punched components with a complicated design.

and the more power he can keep in reserve, the more stable the quality of the parts is.

While other companies strive to hit the maximum stroke rate and press force when using their Bruderer automatic punching presses, Marc Maradan keeps his machines well within the limit, almost like having a Ferrari that never goes above 70 mph. Any time „lost“ by doing this is easily made up, since there is no need for readjustments or reworking, no over-production and no unnecessary use of materials – the repetition is perfect. Thomas Hofmann, his contact person at Bruderer, points out another design feature which has an influence on the quality, namely that „the die set is maintained on the centre line of the ram guide of the press“. Maradan can see the advantage of this particular feature, adding that „the way the press is constructed and coordinated with our tools is the foundation of our reputation for quality“.

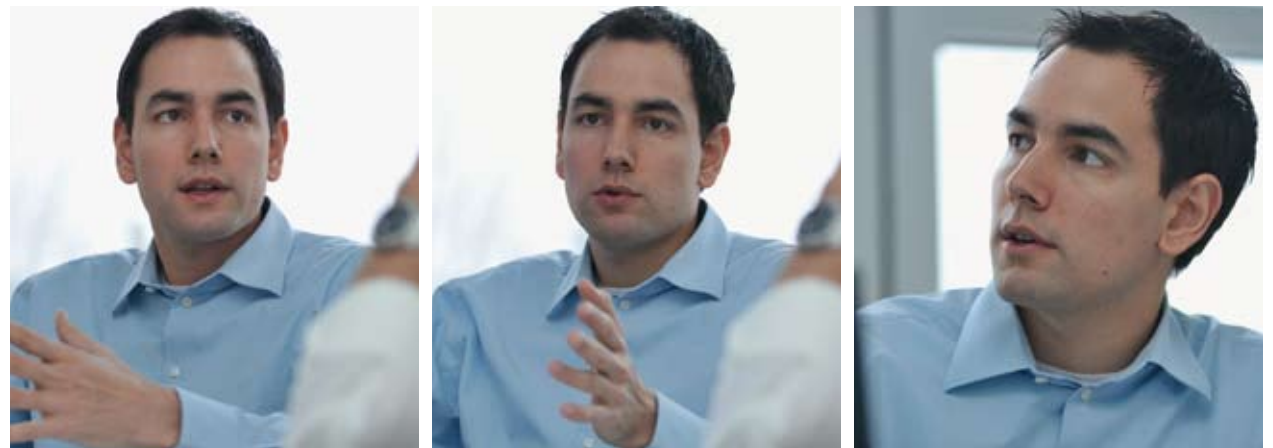
„The fact that we only use Bruderer presses is an important factor in the reliable and consistently accurate way our machines work,“ says the head of the pressing room, who over a career spanning some 30 years has got to know – and love – all of the Bruderer presses of the past three decades. Maradan cites an example of this reliability: a 32-stage die for lead frames of 0.125 mm-thick copper material can punch several million parts before it is re-sharpened.



Cutting clearance is often only 1 – 3 µm.

„The machine can be running around the clock for several weeks,“ he says, with the Bruderer automatic punching press working with large coils up to 34 hours at a time. „Our

Whereas previously they were tied to specific cycle processes for strip material, now they theoretically have no restrictions. Experienced operators know that increased stro-



Pascal Hänggi: „We invest a lot more time and therefore quality into the process and thus we don't have to carry out any rectifications.“

press can run for 100 hours at a time if the material supply is guaranteed,“ says a confident Thomas Hofmann, who is a technical consultant at Bruderer. It would be technically feasible for example to weld the coils at the end to ensure continuous material supply. Hänggi lead frames have no welded seams however, which is why the largest possible coils are fitted.

Conversely, it can happen that the presses are retooled up to six times a day, meaning that servo feeders and CNC control are welcome features. Peripheral equipment such as strip lubrication is already fully integrated into the control as well as feeding and tool monitoring. „This means that we can be flexible in the order processing,“ says Maradan. The key to every new order is the tool number which contains all of the control information. The feed length, crank angle for material feed, height of stroke, lubrication amounts and actual dimensions are all calibrated and available.

Servo feed – always adapted

„The main advantage for us of servo feeds is the sensitivity with which the equipment works,“ continues Maradan. Compared with traditional feeders, servos have fewer moving parts which can sometimes lead to processes or cycles being displaced. The feed used up until now – the BBV190 – was „the best there had ever been“ according to Maradan, who has since seen his expectations exceeded with the introduction of the servo feeder, saying that „it takes things to a different dimension“.

ke rates often mean that the mechanical feed needs to be readjusted. Servo feeders on the other hand are not subject to any dynamic influences, at least as far as this is concerned. Hänggi has gained further in flexibility by implementing the latest Bruderer press installed in 2008, a BSTA 300-75B with BSV170 mounted on the left hand side and an optional strip guide table with strip end sensor mounted on the right hand side. There is the possibility to either push or pull the strip, as Hofmann explains. „Depending on the material being worked on, you can turn the tool round and change the direction of rotation of the servo feed.“

The two aspects of quality

Quality is the norm at Hänggi, and a high level of it. Production lays down the criteria for this, but monitoring is still necessary with zero errors being the aim. Should one mistake be found among several million good parts, then „crisis management“ leaps into action to discover the cause. The functionality should be in no way impaired. Parts which are as delicate as butterfly's wings yet much smaller simply cannot be checked manually, and work carried out on the strips is primarily checked with a vision system. The slightest distortions or micro-particles that are pressed into the material by the feed roll might alter any further galvanic processing or welding processes and are therefore to be avoided, and of course the watch-making industry demands flawless surfaces.

Satisfying your hunger for training and knowledge

Do you have a hunger you would like to satisfy? Then take a look at what is on the menu for our training programme and order some courses!

Bruderer automatic punching presses are famed for their precision and longevity, and this guiding concept for BSTA machines and their high-quality design guarantees excellent results and top productivity. There is however another key element behind this success, namely our customers' employees.

The right results from the right investment

Their knowledge and specialist insight into Bruderer automated punching presses enable them to use the machinery profitably and to keep the quality of the parts that are produced at a consistently high level. A Bruderer press that is correctly operated and well serviced guarantees the owner decades of reliable and economic pressings of the most varying complexity.

As part of our training programme, our customers can have their employees trained on a regular basis. With the current economic situation, production facilities are often well below capacity making this the ideal time for this kind of investment in training initiatives. In Germany and Switzerland, for instance, investments such as these are often subsidised by the employment offices.

The right location for the right training

Our well equipped infrastructure at the Bruderer head office in Frasnacht, Switzerland, provides everything you need for comprehensive training:

- A training room with various high performance automatic punching presses from the BSTA range
- Machine controls for the Sinumerik WS 510P/805 SM-P, Bruderer B- and BE generations of systems
- BBV, BZV and BSV feeds
- Various peripheral equipment

On request, we can carry out training sessions either in one of our competence centres or at the customer's location on-site.

Our training team is made up of trained engineering specialists with on site time served practical experience. They can pass on information to all levels, from beginners to the more advanced, and also have some invaluable tips for the Bruderer automatic punching press service and maintenance staff. The course languages are as international as our customer-base, with training sessions carried out in German, English, French and Italian. Course documentation is provided in printed form or as a CD.

The right course for the right people

Before any course gets under way, the content is discussed in detail with the customer to make sure that it is adapted to the area of competence, level of knowledge and individual needs of the relevant participants. If it becomes apparent during a course that it would be useful to cover additional topics, the programme can be adapted at short notice. As is the case with the BSTA machines, we steer clear of mass-produced products, preferring to provide tailor-made offers which correspond to the genuine requirements of our customers.

Our courses for machine operators demonstrate how to operate our BSTA machines, because even the best automatic punching presses are only as productive as the employees that operate them. In a one-to-two-day course, we provide the following training:

- Operating our BSTAs
- Machine control
- Establishing work processes
- Setting up punching tools
- Economic use of accessories



Maintenance staff being trained in the latest developments of electrics.

Well maintained Bruderer automatic punching presses guarantee the highest levels of productivity and quality over time. In a two-to-three-day course, we train electrical and mechanical service employees in the following areas:

- Electrical maintenance: Machine control, operating controls for automatic punching presses, identifying errors, diagnostics, exchanging components, software updates, data storage, integration of peripheral equipment
- Mechanical maintenance: The mechanics behind automatic punching presses, maintenance/servicing, setting up/starting up, work processes, feed units BBV/BZV/BSV, identifying errors, diagnosing errors, correcting errors

Good reasons for professional training

Good training is only half of the story – good continuous follow-up is just as important, particularly in the electrical sector, and we have managed to keep the "Bruderer network's" knowledge at a high level over the years by having the right offers and ideas.

Once the course has been completed, the participant receives an ISO-recognised certificate, which is not only a real benefit to the employee but is also an advantage to the employer when it comes to the recertification of his company.

As you can see, there is a whole host of good reasons to give your employees further training. The time is right – we look forward to discussing the various possibilities with you!



Courses can be tailored to meet the needs of individual employees at the ideally equipped Bruderer training facilities in Frasnacht, Switzerland.