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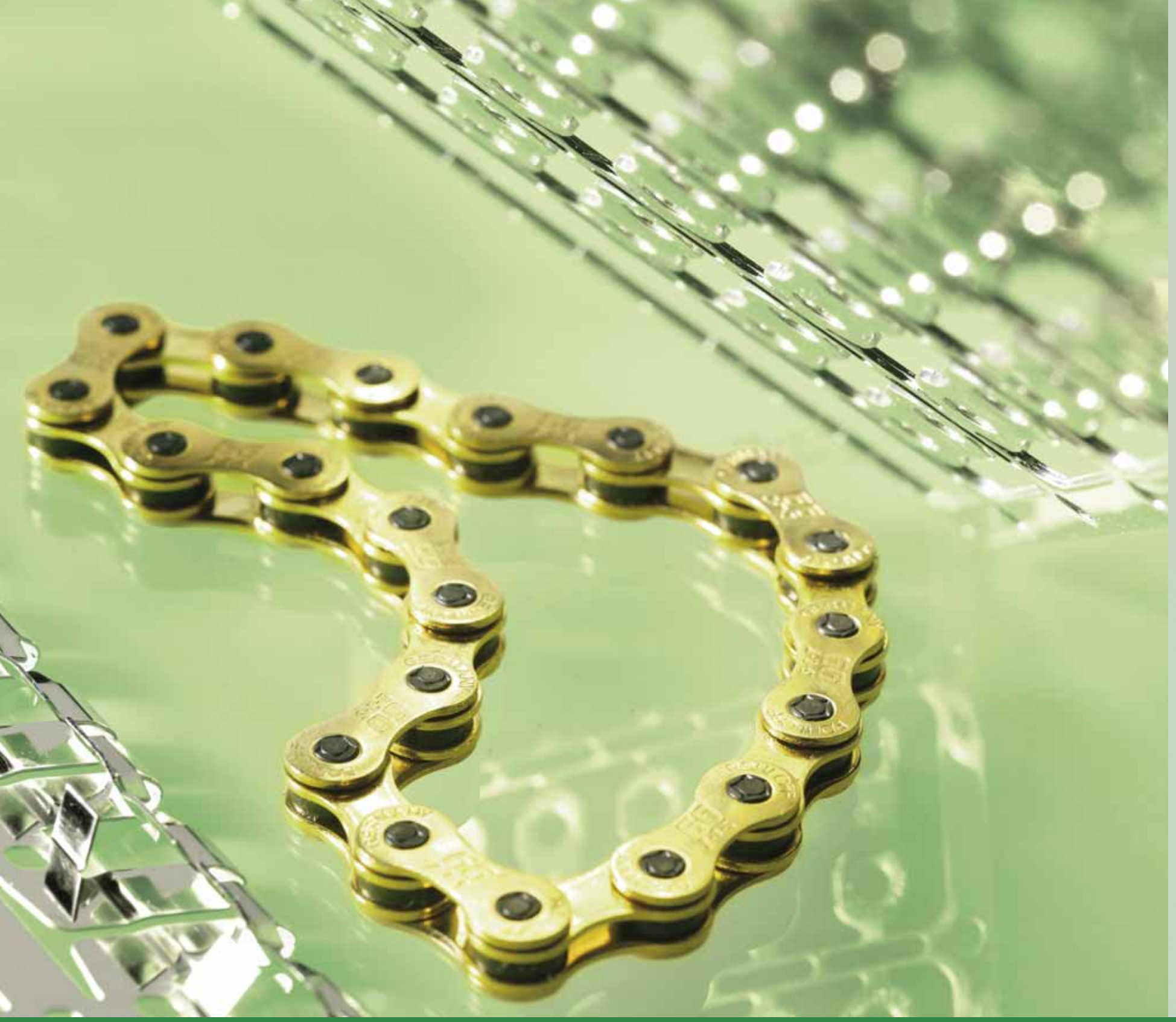

STAMPER

MAGAZINE FOR HIGH PERFORMANCE STAMPING TECHNIQUE

PRE-OWNED MACHINES WITH MANUFACTURER WARRANTY

BRUDERER GmbH has set up an overhaul centre near its headquarters in Dortmund for repairs and overhauls of pre-owned machines

ABSOLUTE PERFECTION: DAWEDEIT GMBH – LÜDENSCHEID

„In our Company men and machine write together the screenplay to the success. – for quality and precision only the optimum counts“

INNOVATIONS AROUND THE MANUFACTURING PROCESS

Interesting reports about experts in die logistics, levelling and feeding technology, noise protection and preservation of stamping parts

NEWS FROM THE WORLD OF MACHINE CONTROL TYPE B

New feature for highest precision: Dynamic ram correction with support points · Often discussed topic: Acoustic analysis and monitoring

BRUDERER

Editorial

Prof. Dr.-Ing. Hartmut Hoffmann

Professor for remodelling and foundry technology –
Tech. University of Munich/Germany

Production that keeps its finger on the pulse

A healthy human being will normally have a heart rate of around 60 beats per minute. However, it has taken human beings thousands of years to reach a point where they are capable of producing parts at the same rate. Back in the days when the village blacksmith used to craft parts individually, it sometimes took hours or even days to achieve the desired shape and this was of course reflected in the price that the customer had to pay.

However, with the advent of modern production methods, it has become possible to produce high-precision parts faster than the blink of an eye. In the case of high performance automatic punching presses that involve progressive operations and highly complex geometrical shapes, it is quite common to find stroke rates similar to those experienced by a human heart following vigorous sporting activity. Even when it is a question of less complex parts, a rate similar to that of a bat's heart (660 per minute) can easily be achieved, sometimes significantly exceeding that of the hummingbird (1200 per minute). Nevertheless, bats remain in hibernation up until around the beginning of April, in order to conserve energy during the period when insects are in short supply and during this time, their pulse rate drops to just 10 to 30 beats per minute.

That is nature's way of achieving rationalisation, but it cannot be emulated within a manufacturing context. Although there is tendency within production to make more sparing use of resources, customers are only prepared to accept this approach if it is coupled with measures that also increase manufacturing plant performance. Anyone wishing to succeed in business needs to keep their finger on the pulse. Hibernation in respect of dies, equipment and especially employees is totally out of the question. After all, the competition certainly never sleeps.

Yours Hartmut Hoffmann

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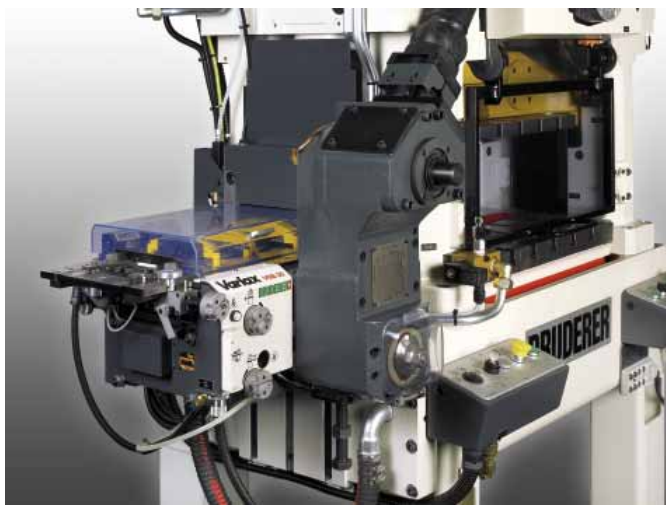
New gripper feeders of the VGB series

The tendencies in the manufacturing of stamped electronic parts clearly show ever smaller pitches and the use of thinner material. BRUDERER adapts to this by introducing a new line of gripper feeders in a co-operation with SANKYO Japan. The newly developed VGB series consists of 3 different models and is based on the know how of both companies in the manufacturing of feeders for the stamping industry. The launch shows to be a great success and to the full benefit of the customers in the electronic field.

The mechanical construction of the new gripper feeders is based on the big experience of both companies, BRUDERER and SANKYO, in the manufacturing and marketing of feed units for the stamping field. The aim was to find an answer on the demand from the electronic market for a gripper feeder that could be not only mounted to new machines but also as retrofits on older BRUDERER machines.
The solution is the VGB series that is available in 3 different models the VGB 30, VGB 60 and VGB 100. A change of applications does not automatically mean a change of machine and the customer can take full advantage of the extremely long life time of BRUDERER machines, maybe in a combination with an overhaul of the machine.



Gripper feeder type VGB 30 attached to a high performance stamping press BSTA 250

Since the feeder series was launched in summer 2005 already 40 units have been attached to BRUDERER stamping machines. Most of the VGB gripper feeders have been used in retrofit projects for older BSTA's in the Far East as most of the manufacturing of electronic parts has been shifted in this region.

Obvious is the very easy handling of the feeder and its very sensitive touch for thin and plated material. Another big advantage is that the feeders can be mounted on nearly all older types of BRUDERER stamping machines without big changes on the machine itself. The feeder can be directly connected to the mechanical drive shaft of the machine and the use of the toothed belt is therefore obsolete.
Furthermore the feeder is connected to the lubrication circuit of the machine and does not require a separate pump anymore which increases the ease of service and the life time of the feeder. Obviously the feeders can be mounted on all new BSTA machines up to 500 kN press force.

Performance chart of the VGB gripper series

Type		VGB 30	VGB 60	VGB 100
Feed length	mm	0 - 30	0 - 60	0 - 100
Strip thickness	mm	0 - 2	0 - 2	0 - 2
Strip width max.	mm	100	100	100
Speed max.	spm	2'000	1'500	1'000
Accuracy	mm	± 0,025	± 0,025	± 0,025
Feed angle		156°	165°	165°

www.bruderer-presses.com

New colour concept for BRUDERER machines

BRUDERER has introduced a great number of technical innovations and improvements for the BSTA high performance stamping machines in the past. With the new colour concept we now give the outside of the machines the same modern and innovative touch.

BSTA 500-110B with new colour concept

Automatic ram correction during the stamping process, more rigid components inside the machine, and state-of-the-art machine control are just a few of the many innovations which have been introduced to the market in the last few years. Unfortunately, the innovations are not always evident from the outside.

BRUDERER has therefore decided to highlight the technical advances of the BSTA stamping machines by a modern colour concept. The chosen colours white and anthracite are distinctive of the new machine generation.

Since the BRUDERER stamping machines were introduced more than 50 years ago the standard colour was green. At that time green paint was very modern because all the other machines in the machine tool and industrial goods sectors were dark grey. This modern and bright colour combination has been very well accepted in the market and the positive customer feedback shows that the decision has been right.

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Pre-Owned machines with manufacturer warranty

One thing is for sure: A brand new BRUDERER Automatic Stamping Machine is unbeatable in performance. Nevertheless there are technical or economical circumstances where a new machine is perhaps not the best choice.

In order to satisfy the needs of those customers, BRUDERER Germany has broadened its already extensive services and now offers repairs and overhauls for pre-owned machines. For that reason BRUDERER GmbH has set up an overhaul centre near its headquarters in Dortmund.

Ulrich Schmidt - Managing Director of BRUDERER GmbH

With this move BRUDERER Europe has copied the success stories from the competence centres in the Far East. "The reason is" explains Mr. Ulrich Schmidt, Managing Director of BRUDERER GmbH in Germany, „that since the foundation of the organisation in Germany 1970, we have sold and installed around 2.500 machines. Our stamping machines have a life span of many decades, even under full load around the clock. Nevertheless, even with the most stringent demands in production quality and the selection of high quality raw material, the machines wear and loose the grade a quality. The result is lower productivity and output. Due to the long service life of the BRUDERER stamping machines in the field and the large amount of machines in operation in Germany, it's now time to set up an overhaul and repair centre."

The pressure of our customers to set up an own repair and overhaul facility in Germany was increasing over the years. As explained above, even a BRUDERER machine does wear over decades of use but other than most of the products on the market, this does not automatically mean the machine is scrap. It is in most cases possible to rebuild the machine and bring it back to its original status. Thus the machine is again fully operational and fulfils the demands of production department for a long time.

Part of the BRUDERER overhaul centre in Dortmund

Schmidt explains: „A stamping machine from BRUDERER is a piece of high tech production equipment where every detail is important to reach highest possible speed with still unsurpassed quality for the production process. This does not only apply to new machines but also on pre-owned machines. No-one knows the BRUDERER machines better than the original manufacturer and no-one can judge the status of the machine better than us. And most important, no-one can give the customer a manufacturer warranty for the overhauls and repairs on our machine - except us!"

Stamping machines and strip feed units are only overhauled and repaired in our facilities with original spare parts "made by BRUDERER". After a mechanical and/or electrical repair the customer benefits from the full warranty on the overhauled and repaired parts. Furthermore we have the flexibility to change the machine specifications to the requirement of the customer and upgrade the machine with the new safety standards.

The conclusion: A pre-owned machine that is repaired or overhauled by BRUDERER Germany, guarantees the same performance as the original status of the machine when it left the assembly works in Switzerland many years before. A great number of very satisfied customers around the globe who have had their equipment overhauled and refurbished underline this statement.

Should the customer request a complete refurbishment of the mechanical parts or an exchange of the machine control (a so called retrofit), the machine has to be sent to BRUDERER Switzerland. We do all jobs at the headquarters of the BRUDERER group which cannot be done in Germany.

www.bruderer-presses.com

DELPHI Neumarkt: „Factory of the Year"

BRUDERER congratulates Delphi Neumarkt for the award „Factory of the Year"

The DELPHI plant in Neumarkt has received this years "Factory of the Year award" in the category "Best Process Quality" for its metal stamping operation. No other company competing in the internationally renowned competition was able to show such a high degree of quality.

„Zero defective parts - 50 months without a customer complaint", this fantastic result convinced the judges. To achieve such a result DELPHI has introduced an internal standard, called „Delphi Manufacturing System". DMS integrates some of the most popular and worldwide advanced quality philosophies such as the Six-Sigma-Process. The goals for the DMS teams, involving members of different departments, are outstanding quality, development optimisation, cost optimisation and Kaizen measures.

In Neumarkt, DELPHI has been producing components for connectors on BRUDERER high performance stamping machines since 1997. DELPHI has achieved its competitive edge through integrated processes in the stamping department. One example: the manufacturing of connectors made of two or three elements was so far a standard multiple process. Today, Neumarkt produces up to 3'000 of these complex connectors per minute with a single stage production on BRUDERER high performance stamping machines.

Productivity and quality: DELPHI stamping shop

The role model facility for stamping technology puts a lot of emphasis on the training and integration of its staff. The complete company structure, starting from the layout of the material flow to different strategies for quality improvements, is based on the idea of maximized efficiency and continuous improvement.

The manufacturing plants are based on the Feng-Shui principle and therefore offer a highly ergonomic surrounding for the highly motivated personnel that produces a wide variety of products in perfect quality. The result is more than three years without an accident in the manufacturing facilities.

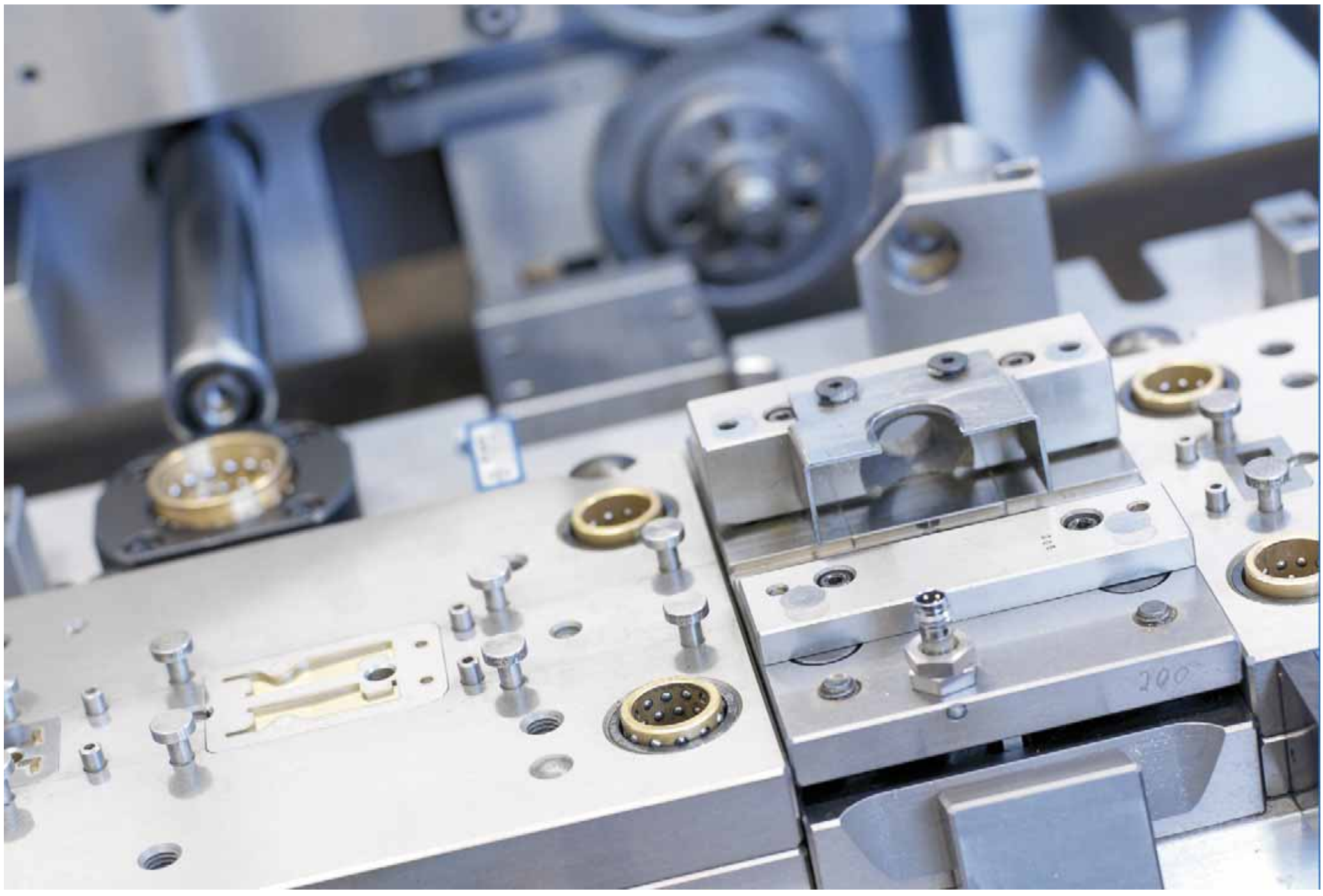
High tech plays an important role in Neumarkt. This year another two BRUDERER high performance stamping machines will be added to the stamping shop.

With right a pride DELPHI Crew: „Factory of the Year" with Mrs Dagmar Wöhrl of "Bundesministerium für Wirtschaft und Technologie"

DELPHI

www.delphi.com

DAWEDEIT – Perfection without compromises!



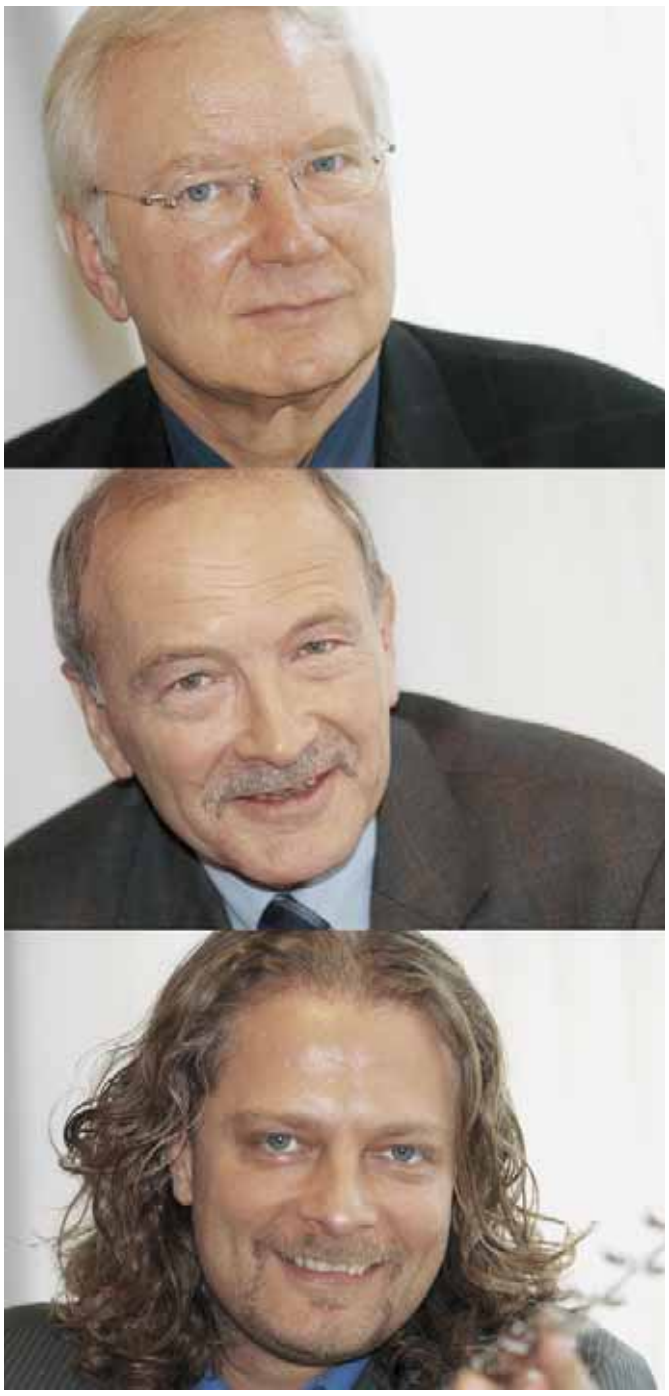
DAWEDEIT: „Our customers are our partners. We would define ourselves as a forward-looking company that has proven itself capable of ushering in technical and technological innovations in its quest for the perfect stamping or stamping/bending part."

Considering the media interest surrounding all the diemakers and stamping technology companies based in the area of Pforzheim, you could be forgiven for thinking that this region (made famous by its jewellery and watchmaking industry) is the only place in Germany where stamping technology can be found. However, there are of course other companies to equal them all around Germany that are also masters of their trade. This elite group of companies from outside the Pforzheim area undoubtedly includes DAWEDEIT GmbH. Based in Lüdenscheid, this company is certainly a force to be reckoned with thanks, in particular, to its comprehensive and high quality range of diemaking and stamping/bending products and services.

Since it was founded 35 years ago, DAWEDEIT GmbH (based in Lüdenscheid/Germany) has prided itself on its key principles of precision and quality. Today the company, which is family-run, offers services ranging from the development and construction of progressive dies, combined stamping and bending dies and welding dies right through to turnkey total solutions including batch production. The key to its success in the tough world of business is its holistic approach. Gunter Dawedeit, the company's Business Director, explains: "We work in partnership with our customers from definition of the remit right through to delivery: it starts with the consultation, project planning and initial design phases and continues throughout the prototyping and die development/construction phases right through to batch production. It covers every aspect and comes close to perfection!"

"Within the context of that, we would define ourselves as a forward-looking company that has proven itself capable of ushering in technical and technological innovations in its quest for the perfect stamping or stamping/bending part," adds his brother and fellow Manager, Siegfried Dawedeit, who illustrates this by making reference to in-die laser welding and the implementation of complex, integrated assembly processes, both of which have long been part of the company's repertoire, but which it has never flaunted.

However, faced with the ubiquitous marketing presence of its competitors in the South, the company has come to realise that despite its natural modesty, it is in fact perfectly acceptable for it to blow its own trumpet. That is what Hans-Joachim Waibel, Technical Manager and Authorised Representative, says as he pinpoints one of DAWEDEIT's particular strengths: "We fully mastered both stamping/bending technology and the progressive process years ago. As a result, when it comes to new projects, we are always in a position to provide customers with the best possible advice about which solution would be most economical for them!" Furthermore, it is not simply a



From above to below: The Managing Directors Gunter & Siegfried Dawedeit, the Quality Management Representative Michael Dawedeit

Powerful Team: „In our Company men and machine write together the screenplay to the success. In terms of quality and precision, only the best will do. That goes for all our internal divisions and also applies in respect of our automatic punching presses."

question of offering customers a choice between these two alternative technologies, as Michael Dawedeit, who is responsible for Quality Management at the company, explains: "In addition, we offer our customers a modular range of services from which they are free to pick and choose. These services range from straightforward job order production using dies manufactured by other companies or the actual construction of stamping dies right through to complex engineering solutions

(within the stamping/bending sector, for example), whereby we will realise projects in-house before installing and running-in process and equipment at the customer's site."
Gunter Dawedeit is 100 % clear about which alternative he prefers and is the best for the customer: "Our forte is our highly efficient process chain. That is why we always perform particularly well whenever we are allowed to handle a project from the development phase right through to batch production without any aspect of it going elsewhere."

And when it comes to batch production specifically within the context of the stamping sector, for decades the company has sworn by equipment manufactured by BRUDERER. "In terms of quality and precision, only the best will do. That goes for all our internal divisions and also applies in respect of our automatic punching presses", explains Siegfried Dawedeit. BRUDERER's machines are not exactly the cheapest on the market, but this is of little concern to DAWEDEIT, except perhaps in terms of the investment timeframes involved. In the words of the Business Director, if you want quality you have to be prepared to pay for it. You also have to continually weigh the cost against other factors. He then elaborates on this by saying "Not only is there a direct relationship between the undisputed BRUDERER quality and a better class of product, but this quality also results in a longer die life, higher utilisation rates and, last but not least, in an extremely high level of process reliability for batch production. That is precisely why, for example, we are perfectly happy to issue extensive warranty periods for our dies, provided of course that they are subsequently used on BRUDERER automatic punching presses."

At this point, Waibel makes the link back to design, where no restrictions have to be taken into account. "Whether it is a question of high-precision dual threads at a stroke rate of 200, of in-die welding, of integrated riveting or integrated assembly processes with feeding of parts: with BRUDERER automatic punching presses, we can rest easy in the knowledge that our innovative ideas will translate perfectly to a real-life production context and that there will be perfect process reliability to match. With these machines, it's always easy and it always works!"

DAWEDEIT has similar expectations concerning the new 800 kN automatic punching presses, which it will soon be using for increased capacity at its base in Lüdenscheid. However, this is a step forward for the company which needs to be viewed in more than simply quantitative terms. Siegfried Dawedeit explains: "Traditionally, we have always concentrated on a sheet thickness of between 0.05 mm and 1.5 mm max. However, we have recently had more and more requests begging us to handle larger requirements. There wouldn't have been a problem from a diemaking perspective, but our 500 kN automatic punching presses meant that we just weren't adequately equipped from a production viewpoint. The more powerful punching force of the new machine and significantly larger die installation space, combined with a 90° strip feed unit, will provide us with a wider range of options and will enable us to offer our customers an even higher degree of flexibility."

Michael Dawedeit who represents the younger generation and will one day inherit the business puts it in a nutshell: "As far as we are concerned, the new 800 kN automatic punching press is a strategic decision, which makes a clear statement within the market about how DAWEDEIT intends to play an even larger role in the future. This is something it will undoubtedly achieve."

www.dawedeit.com

ARKU Maschinenbau GmbH: Experts in levelling and feeding technology

ARKU Maschinenbau GmbH has been working with sheet metal since 1928. The company, which is based in Baden-Baden, has established itself as a market leader in the field of levelling and feeding technology and has sold thousands of its levellers and straighteners. ARKU press feeding lines are used by top SMBs all around the world and by the automotive industry. Thanks to its enduring relationship with successful sheet metal working companies, ARKU systems are now synonymous with precision and high availability.

Headquarters and production plant of ARKU GmbH in Baden-Baden/Germany

Levelling technology is the key area of expertise of this traditional, family-run business. ARKU offers the full range of levellers and straighteners, from feeder straighteners and high-precision levellers and straighteners right through to high performance levellers for sheet metal stock. The company's range of products even includes parts straighteners.

ARKU high-precision levellers and straighteners feature the company's very own EcoPlan® drive concept. This patented drive concept prevents a slip-through of the levelling rollers on the material. This prevents marks on the surface of the material and minimises wear on the levelling rollers. EcoPlan® significantly reduces the load on the individual articulated shafts and increases machine power by up to 30%. High-quality levellers and straighteners are characterised by how easy they are to clean. Block change systems for the levelling rollers make for quick and thorough cleaning. This results in levelling and straightening of a consistently high standard and leads to increased process reliability overall.

ARKU press feeding lines are used by top small and medium-sized companies all over the world and by the automotive industry. The company is able to optimise coil changeover times on strip processing lines. Its double end decoilers are a good example of this. While the system is still running, the new coil can be prepared on the loading side. This minimises changeover times and increases system availability.

High-precision leveller/straightener combined with double end decoiler for optimum levelling/straightening results and high availability

The company is extremely hot on customer service and has a service team of 20 employees. ARKU offers a 24-hour service hotline and can respond quickly in an emergency. The ARKU Service team even offers a strip processing line and leveller/straightener replacement service in view of the fact that new levellers and straighteners can vastly increase the availability of existing systems.

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GFL: Noise abatement is the goal

"The day will come when man will have to fight noise as inexorably as cholera and the plague."
(Robert Koch)

Modern industrial manufacturing processes are geared towards the production of large quantities. Automatic punching presses, moulding presses and milling machines all now operate at speeds that would have been unimaginable just decades ago.

Nevertheless, the downside of this kind of technical progress is that it brings with it an increase in noise levels during the production phase. The negative effects of noise are known only too well:

...aural effects: frequent & prolonged exposure inevitably leads to noise induced hearing loss and can even result in chronic tinnitus. Extremely high noise levels destroy the body's hearing mechanisms.

...extra-aural effects: Chronic noise pollution leads to stress and therefore to gastro-intestinal problems and cardiovascular disorders. Other possible consequences include sleeping disorders, impaired concentration/response times and irritability.

Thus, there is far more to noise control than simply creating a pleasant working environment – in fact, it is the permanent key to ensuring a fully functioning production chain that involves both human beings and machines.

For over 30 years, GfL mbH has been developing and producing technical sound insulation products for every conceivable area of application. On the basis of the experience it has gleaned within the context of sound insulation for the automotive sector right through to heavy industry, GfL can now state categorically that: With the right kind of noise protection in place, there is no reason why any industrial process should now exceed the 80 dB(A) limit stipulated in EU Directive 2003/10/EC, which has been in force since 15/02/06. There are cost-effective solutions available for any application or combination of manufacturing processes.

Gesellschaft für Lärmbekämpfung mbH – Tailor-made sound insulation solutions: Production line at MIELE

Below is an overview of the products and services available from GfL mbH:

- Noise protection and safety enclosures
- Indoor acoustic measures
- Assembly – disassembly – maintenance
- Modernisation of old plant and equipment
- Sound insulation advice
- Planning of sound insulation measures
- Straightforward sound metering
- Custom sheet metal and steel construction

((GfL))

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GÜTHLE Maschinenbau GmbH & Co.: Experts in die logistics

When it comes to die logistics, die positioning and die clamping, Güthle Maschinenbau GmbH & Co. is always the first port of call for the international press and die engineering industry and those who use its products.

Güthle products combine innovation with high quality. This owner-run company has more than 50 experienced employees, who provide a superb level of customer service: "Every remit is different, but we are especially interested in the little details". As a result, the company can implement both standard solutions and complex system applications quickly and on a customer-specific basis.

Frequent die changes (once a week or up to several times a day in the case of shifts) often lead to excessively high downtime in terms of manufacturing plant. In the future, this problem is set to intensify in view of market demands for greater flexibility. By installing suitable die change peripheral equipment, the usual changeover times can be cut considerably. When used on automatic punching presses, ROLLBLOC DIE LIFTERS (which are integrated into the T-slots of the lower and upper clamping plates) enable easy adjustment of the dies. Less effort is required for movement and positioning, which greatly facilitates the changeover process.

The supporting elements (consisting of balls or rollers) are supported by individual springs and subsequently lowered below the level of the clamping plates when the dies are clamped.

The hydraulic versions can be operated by the hydraulic system of the automatic punching press or with the aid of a manual pump. ROLLBLOC hydraulic units (in conjunction with the ROLLBLOC hydraulic quick clamps, which are available in versions to suit a wide range of applications) help reduce changeover times considerably.
Externally, ROLLBLOC die loading arms with a bearing capacity of 5 to 100 kN ensure safe die installation and removal. They form the transfer station for transferring the dies to the automatic punching presses by means of a crane or stacking truck. The bearing drums of the die loading arms, which feature needle bearings, ensure smooth and linear movement of the dies. ROLLBLOC swivel die loading arms can either be permanently mounted on the automatic punching press or can be attached by means of special hooks, enabling them to be used flexibly with several machines.

ROLLBLOC and DILOS are the names of the company's economical product ranges for increasing productivity on the basis of faster die changes.

GÜTHLE
IDEE UND SYSTEME
ROLLBLOC DILOS

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SLE: Integrated solutions for the preservation of stamping parts

Within the context of electrical component manufacturing, especially punched plug-in contacts, quality and performance requirements are constantly on the increase.

Within the automotive industry and specifically where safety engineering is concerned, connectors are becoming subject to increasingly stringent requirements. General vehicle electrics, which are responsible for around 36 % of all faults, have long been the Achilles heel of the automotive industry: Micro vibrations, temperature ranges of –40° C to +130° C, the effects of vapours and exhaust fumes, and service life expectations are just some of the requirements and factors imposed on car connectors.
In addition, the insertion force also needs to be reduced in order to ensure easy and secure assembly along with a constant level of electrical resistance.

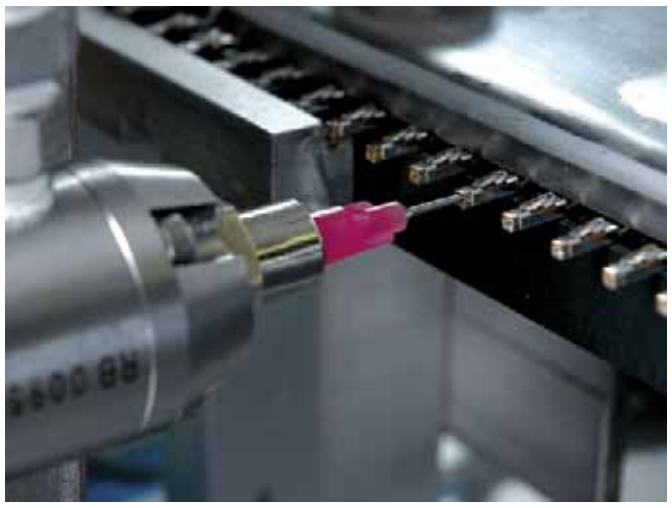
Preservation system type KSS

SLE's novel KSS preservation system precisely controls the volume of gel applied to the contacts, regardless of the metering rate and viscosity of the gel concerned. The KSS preservation system has been developed specifically for use in high-viscosity dosing applications within industrial manufacturing.

It is setting new standards in automated metering technology for miniature connector systems within the automotive sector.

Technical specifications KSS

Size (W x D x H)	mm	1'030 x 1'000 x 1'079
Weight	kg	250
Size of medium container (W x D x H)	mm	140 x 297 x 280
Quantity of gel per contact	mm^3	app. 6
Frequency	1/min.	app. 100 parts



Inserting of gel to contacts for the automotive industry

The KSS preservation system ensures optimum production quality whilst at the same time offering maximum process reliability thanks to its high level of volume consistency. The quantity of gel required for 1000 plug-in contacts is around 2.8 – 3.5 g. The necessary parameters for each application can be easily and conveniently stored in the control system on a die-specific basis.

Under its motto of "Quality is what binds us together" SLE electronic offers a modular process optimisation system for high performance punching, which, in addition to lubrication and the application of preserving agents, also covers the cleaning of punched parts.

SLE
quality engineering

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New: Dynamic ram correction with support points

It is a well-established fact that a change in the machine speed will inevitably lead to deviations from the die reference dimension. Consequently, if a consistently high punching quality is to be achieved, the ram axis must be corrected in line with the speed and desired parts quality.

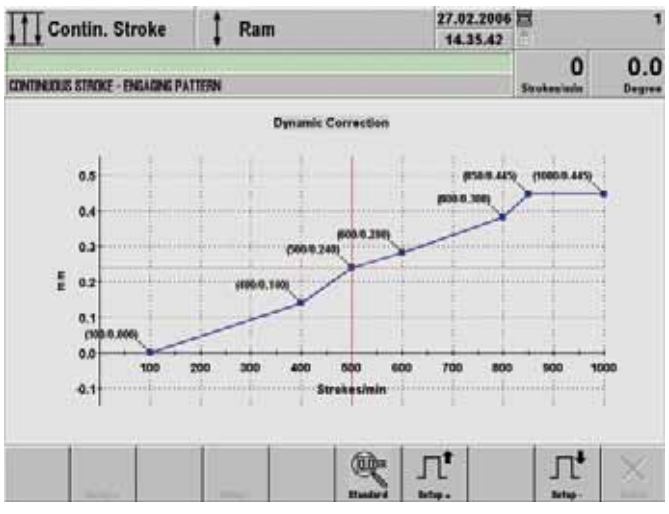
There is a clear relationship between the machine speed and changes in the die reference dimension. Despite the fact that we are aware of this link as mechanical engineers and can express it by means of mathematical formulae, when attempting to master the laws of physics even we have to acknowledge that we are subject to specific constraints. In addition, there are many factors associated with production and processes that cannot be resolved using mathematical formulae.

That is why we need practitioners who can combine high output with high quality. When such a person changes the speed on the automatic punching press, he will continue to correct the ram's BDC position (i.e. the die reference dimension) until the required parts quality is again achieved at the relevant operating speed, whereby the load on the automatic punching press must be kept as low as possible from an economic perspective.

And that is precisely where the "dynamic ram correction with support points" function comes into play. To put this in real terms, it means that we wanted the B-control to handle the ram position correction process fully automatically following a single teach-in operation. This resulted in the following development objectives:

Operator able to define ram positions freely at any speed
Ability to store correction dimensions and correction characteristic in accordance with programmed dies
Linear/interpolated correction between the individual support/correction points
Fully automatic ram correction function
User-friendly, as self-explanatory as possible

In practice, the new function works as follows: When the machine speed changes (regardless of whether it is manually or automatically adjusted, e.g. in the event of a machine stop or change in duty type), the ram correction function will automatically compensate for the change in the ram position. This results in a fully consistent die reference dimension across the entire speed range. For example, punching operations at a speed of 250 spm achieve the same dimensional accuracy as those performed at a speed of 1400 spm. In addition, the operator is kept constantly informed of the ram's current BDC position thanks to the easy-to-understand graphic display.



Automatic punching presses that are already equipped with the previous version of the "automatic ram correction" function can be upgraded to the new "ram correction with support points" function without any problem at all. The upgrade is simply a question of updating the software; no mechanical components are required.

The new "ram correction with support points" function is available now on the BRUDERER B-control in conjunction with selected applications. If you require further information, please contact our sales representative.

Often discussed topic: „Structure-borne noise" – acoustic analysis and monitoring

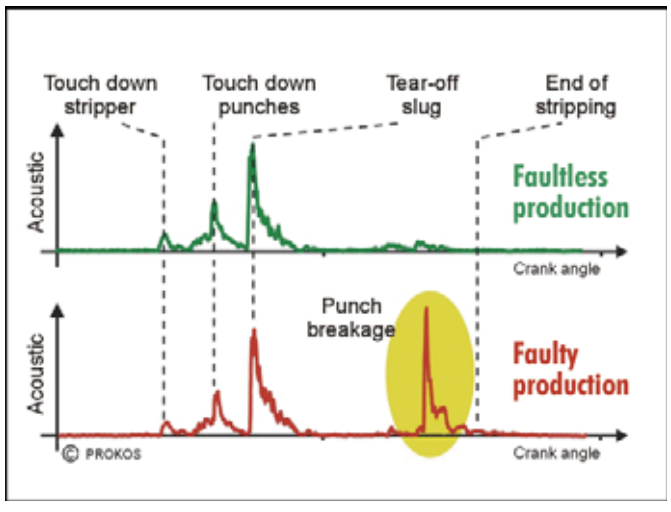
By way of an introduction, it may be helpful to establish what we mean by the term "structure-borne noise". According to the European Environment Information and Observation Network it may be defined as sound that travels over at least part of its path by means of the vibration of a solid structure.

Many people believe that systems for measuring structure-borne noise can be used to analyse noise that is audible to the human ear. In actual fact, noise that is classified as structure-borne is generally within a frequency range that is imperceptible to humans.

Within the context of machining (e.g. grinding, turning, drilling or milling), the analysis of structure-borne noise is a well-established method for detecting changes in the die (wear, breakage, etc.). For a number of years now, the companies that develop and distribute this kind of measuring system have also been enjoying success on the punching technology market. These companies are specialists who, by choosing special sensors and locating them at specific points within the die, are able to glean supplementary information about the tool monitoring function and/or press force monitoring.

Typical punching errors (e.g. breakage of small punches, tears in die-plates and passing scraps) can be detected on the basis of structure-borne noise. As a result, damage to the die can be reduced, the die's service life can be increased and the quality of the parts can be improved.

Every punching process involves a typical, recurrent sequence of structure-borne noise pulses, which are generated when the die components are clamped/released and the material is cut or broken. An increase in, or change to, structure-borne noise indicates process faults or irregularities in the punching process, on the basis of which structure-borne noise monitoring may trigger parts sorting or an automatic punching press stop.



Does BRUDERER offer this technology to its customers? – Yes, by acting as an interface between the customer and the suppliers of such systems right through to integration of the process into the B-control. However, this only applies in respect of certified providers who are referred to as "solution providers". Advice and service are provided by the supplier concerned within the context of his professional competence and are his responsibility.

BRUDERER certified providers:
Dr. Ing. K. Brankamp – System Prozessautomation GmbH
www.brankamp.com

BRUDERER Homepage: Frequently asked questions

Question

On BRUDERER punching presses, the ram guiding system is located exclusively at strip level. Punching presses by other manufacturers feature guiding systems below and above strip level. Does the location of the ram guiding system affect tool life?

Answer

Yes – locating the ram guides at strip level has a significant effect on tool life. As the guides are located at strip level, the tilt angle of the punch is also at strip level. This significantly reduces wear on the tool – even in the case of eccentric load – and extends tool life.

Question

As a component supplier to the automotive industry, the products we manufacture include plug contacts for ABS. Some contact parts of the strip stock (CuZn) are gilded. During the punching process, we are forever finding evidence of abrasion of the gold during feeding (BBV 202), and some of this adheres to the upper feed roller. The results range from marks on the strip to mispitching. We have already tried all possible options (reducing the contact pressure to a minimum, polishing the feed rollers, etc.) but without noticeable improvement. Can you suggest a way of avoiding this abrasion of the strip stock?

Answer

To avoid stock abrasion, we recommend that you start by trying feed rollers with a variety of coatings. Should this not reduce the abrasion, we recommend that you use a BRUDERER gripper feed unit instead of standard BRUDERER BBV feed rollers. Abrasion can also be reduced/avoided by applying a thin layer of oil to the surface of the punch strip just before feeding. This should prove particularly successful if you are using aluminium strips.

Question

When installing punching tools, BRUDERER recommends clamping the lower section of the tool first followed by the upper section, and screwing the clamping plates tight one after the other. Why is this? Would it be inadvisable to clamp the tool the other way round (starting with the top followed by the bottom)?

Answer

Yes. We do not recommend clamping the tool the other way round. The position of the tool must be defined/set by the lower section, as the ram may tilt slightly above the strip level. In order to avoid warps in the tool or machine guides, we strongly recommend proceeding as described.

Question

Where the design of punching tools is concerned, what do we need to be aware of in respect of eccentric loads on punching presses (BSTA 800-145B)?

Answer

Yes – BSTA presses can support eccentric loads, see the corresponding diagrams in the Operating Instructions/Manual.

Further FAQ's at: www.bruderer-presses.com

Preview of STAMPER 2/06

- A report about MECLOSTAMPI, Italy
- Exhibition preview to the EuroBLECH 2006
- Articles around the manufacturing process
- The latest news about control systems
- Next issue: In the beginning of October 2006