

STAMPER

MAGAZINE FOR HIGH PERFORMANCE STAMPING TECHNIQUE

■ A NEW STAR IS BORNE! BSTA 200-60BE „ESSENTIAL“

A new automatic punching press for clearly defined target groups with a just as new control and feed concept

■ INNOVATIONS AROUND THE MANUFACTURING PROCESS

Interesting reports about fluid technologies for stamping and punching processes up to companies for the manufacture of functional components

■ MECLOSTAMPI – AN ITALIAN STORY OF SUCCESS

How a small handicraft enterprise turns into a successful and heavily expanding company in Saronno, North Italy

■ MACHINE CONTROLS: A VIEW ON THE NEXT GENERATION

What satisfied the simplest requirements not so long ago resembles a switching center today – in which direction do things develop?



Dr. Frank Heines

Dr. Frank Heine is Associate Partner at the Malik Management Zentrum St. Gallen (Malik MZSG). His key activities are strategy development, restructuring & reorganization, as well as cost management.

The Malik MZSG is a leading provider of Management Consulting and Management Education. Around 200 employees work at the locations St. Gallen, Zurich, Vienna, London and - since lately - Shanghai. Malik MZSG systematically searches for the perfect answers to the question: What is correct and good management.

Globalization with good judgement

It is four out of five Swiss Francs that the Swiss machine industry earns abroad. The export world champions from Germany are similarly successful in the world market. The strong market position has always been based on technology and innovation leadership as well as high customer benefit. Additionally, the efforts in terms of cost reduction and cost efficiency have further improved the competitive situation.

Simultaneously, Asia successfully operates in this field as well. More and more providers also from these countries pit their strength against the competition. Large home markets with high price intensity, as e.g. in China and India, the increasing qualification of the personnel, as well as state-of-the-art production systems are the perfect prerequisites for global expansion.

The reasons for this increased international orientation are obvious: The companies are looking for new, attractive sales markets, they follow their customers, or try to benefit from resource advantages through their local presence. This is where the term “globalization” comes into play. It is challenge and nightmare together. It is used so frequently that one might believe it is clearly defined. It is not.

Globalization has many meanings. Its use therefore regularly entails a lot of misunderstandings. Globalization does not mean that the whole world is a “village” with more than 6 billion people. The cultures of this world are not going to assimilate or uniformly orient themselves towards a Western way of thinking and living. Finally, it does also not mean that each company or its products must be represented in each country or part of this world.

However, from today’s point of view globalization means at least that:

1. one must not principally exclude any place in this world from the various dimensions of economical activities and thus from the entire value adding network,
2. national borders do no longer effectively protect from competition,
3. one must observe globally in order not to be caught off guard, which does not mean, however, that one is forced to act globally, too.

The globalization is older than satellite TV and internet. From the Venetian and Florentine trading houses via the Fugger and Jesuits up to today, globalization has had its ups and downs, its glamorous times and setbacks. From its history, we may perhaps be able to learn the one most important thing: Good judgement.

Coming soon ... The new BSTA 200-60BE „Essential“ will be introduced to the market in about four months time. We use this edition to present to you our latest development which adds a new dimension to companies specialized in the stamping of small and high precision parts.

“Why does BRUDERER place a new automatic punching press in this segment?” you may want to ask. Well, the answer is quite simple: The demands put up by the market have changed considerably and the BSTA 200-60BE is the answer to such changes. Following a thorough and precise market study and many talks with our customers all over the world, the new requirements were converted and realised not only in the machine but also in a new control and a new feed design.

In those fields where high-precision micro parts must be stamped in large numbers, namely in the electronic, watch making and automotive industry, things have undergone enormous changes during the past 5 years. The materials to be stamped became ever thinner, the feed pitches ever shorter, the required precision ever higher, and the pricing pressure ever stronger. Furthermore, the process following the stamping process, as for instance the assembly of the components or the over-moulding of the punched parts, requires an ever higher accuracy and above all, maximum repeatability. With the BSTA 200-60BE „Essential“, BRUDERER is able to fulfil these requirements.

The automatic punching press

The press force in the target segments is not the primary problem. Most applications require press forces of a few tons. Therefore, the new machine type was designed for a press force of 20 tons. For BRUDERER this means that the machine may actually be operated with these 20 tons without affecting the high precision and machine and tool life.

One new feature is the use of a drive system using 2 connecting rods in a machine with 20 tons punching force. This brings along an essentially higher stability and precision in the punching process. In addition, the unique ram adjustment by BRUDERER is realised in the new BSTA 200 - this unit is able to automatically compensate any offset in the BDC area during the punching process.

The punching tools which became longer and longer despite the ever shorter feed intervals caused us to define a tool loading area of 600 mm. Alternatively, the automatic punching press will also be available with 700 mm tool loading area starting from the middle of 2007.

The standard model of the automatic punching press is designed as fixed stroke machine. This mainly fulfils the demands of the Asian markets where most of the machines are used for the production of electronic components. However, our sales program includes the adjustable stroke as an option in order to also satisfy other markets. With the smallest fixed stroke of 8 mm, the machine may be operated at a speed of 2'000 spm.

The feed units

The roller feed unit BBV 180 is a new development as well. Like the other roller feeds by BRUDERER, it is mechanically driven via a cardan shaft. The new BBV 180 allows for the quick and simple replacement of the rollers which improves the flexibility and productivity. If so required by the process, also a gripper feed unit may be used.

The control

On the basis of the proven B control, we have designed and developed a new machine and process control. The „B-Essential“ fulfils all requirements of a state-of-the-art control and is very easy to operate. Via the touch screen, the operator may enter all relevant information quickly and in a perfectly structured way or may even update and optimize these data during the punching process. The operation is aimed to focus on the capabilities of the operator than to the automation. Back to the roots of the machine – and only what is needed in the process – is our motto. The hardware is configured in a way that all rotating elements, as for instance ventilator and hard disc, were eliminated. Concerning the hardware, the main focus was placed on reliability and long life. The concept also resulted in a considerable reduction of the control cabinet size.

Summary

The new high performance punching presses BSTA 200-60BE and BSTA 200-70BE „Essential“ offer the perfect choice for the production of small but high-precision punched parts. Through a design and construction precisely tailored to the needs of target group and marked by cost-conscious considerations as essential factor throughout the entire development phase, a machine was built which will boost the competitiveness of our customers. In addition, we attached great importance to easy handling and maximum productivity through the choice of the appropriate control components and feed units.

www.bruderer-presses.com

Specifications BSTA 200-60BE/BSTA 200-70BE

Press force	kN	200						
Tool loading area	mm	600/700						
Stroke heights	mm	Fixed stroke: 8, 15 (standard) or 25						
		Adjustable stroke: 8, 13, 16, 19, 25, 32, 38 (7 steps)						
Adjustable stroke	mm	8	13	16	19	25	32	38
Speed max.	spm	1'800	1'500	1'350	1'240	1'080	950	830
Fixed stroke	mm	8	15	25				
Speed max.	spm	2'000	1'440	1'100				
Ram adjustment range	mm	40						

Impressum

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Extension of tool opening on used BSTA 25H

Many BRUDERER customers around the world know this situation: Due to increased tool length the tool loading area of an existing BSTA 25H is too short. We have built more than 1'000 of these presses and many of them do run for decades every part of the world. Most of the machines are used but still do a great job and to scrap them would be a shame. Why not sending them to one of our competence centres for a complete overhaul and use this opportunity to extend the tool opening from 540 mm to 650 mm.

Instead of scraping the machines or selling them to machine dealers, BRUDERER offers you the possibility to increase the tool opening from 540 mm to 650 mm during a mechanical overhaul as from summer 2006. This solution enables you to still use the older machine even for longer progressive dies for many years to come. More than 250 overhauled BSTA worldwide prove that this investment is absolutely worthwhile – even more in the future when extending the bed opening to 650 mm which allows you to get ready for longer dies. Therefore only three new components are necessary: A specific ram, a base plate and the clamping plate of the BSTA 25L. Also a revision of the Guide support and the machine case are realisable. Furthermore only a few small parts are necessary. During a revision this reconstruction can be managed without any problems.

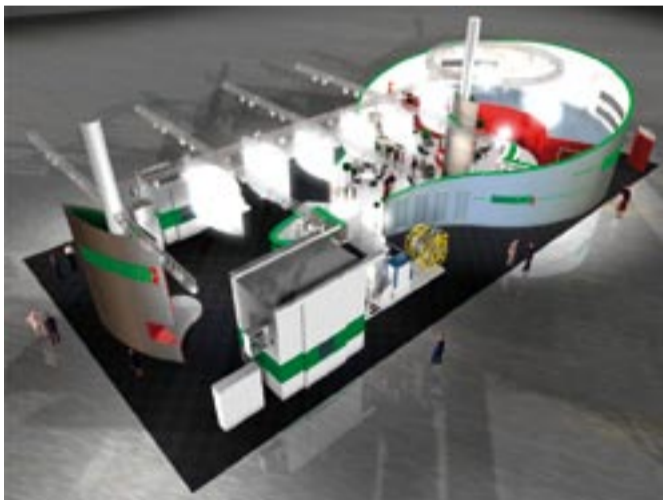
We offer you this extension in the following subsidiaries: BRUDERER AG Switzerland, BRUDERER GMBH Germany, BRUDERER PRESSES (Far East) Singapore, BRUDERER Machinery (Suzhou) China and BRUDERER K.K. Japan. In case you would like to get more detailed information please do not hesitate to contact one of the above listed companies.



3D-illustration of a punching press type BSTA 25H, extended from 540 mm to 650 mm

Preview of the EuroBLECH Exhibition 2006

Take part in the vibrant world of stamping and visit us on this year's EuroBLECH 2006 in Hanover, Germany. We will demonstrate to you in an impressive way why our automatic punching presses – next to the high-speed manufacturing of stamping parts – prove to be as perfectly suited for applications at slower speeds.



The highlight on our booth will be a production line for the manufacture of housing covers for electric motors. This highly complex stamping process – in which a BSTA 800-145B automatic punching press forms the core piece of the entire system – is a real challenge: During the stamping process, an additional 4 M5 threads are cut into the deep-drawn stamped parts with press-fit bearing seat. We will show our guests which criteria an automatic punching press must comply with, in order to produce such high-grade punched parts at constant quality level. The finished housing covers are unloaded, using a conveyor belt which then transfers the parts to the cleaning system.

Another highlight of this system is a BSV 170 type servo feed unit in stand-alone design. As this sophisticated solution is independent of the control, it demonstrates to our guests that e.g. even older automatic punching presses may easily be re-

rofitted with state-of-the-art feed units.

But there is more: A second production line – comprising a punching press of type BSTA 500-110B with two BSV 75T type servo feed units – manufactures superior parts. Both applications prove that a BSTA creates an outstanding ROI even at relatively low production speeds thanks to its high accuracy and process stability.

In perfect cooperation with our competent partners and co-exhibitors, we offer you an interesting information platform all around the world of stamping and will be pleased to discuss with you the latest trends and technologies in control engineering. We will also be happy to advise you on individual questions in a pleasant atmosphere at our booth F24 in hall 27. Immerse yourself in our extensive knowledge and take home with you helpful and valuable ideas.

We are looking forward to welcoming you as our guest at the EuroBLECH in Hanover.



www.bruderer-presses.com
www.euroblech.com

Exhibition previews Asia

Preview JIMTOF Japan 1.11. – 8.11.2006

BRUDERER takes part in this year's JIMTOF in Japan from November 1 – 8, 2006. The JIMTOF is one of the world's three largest exhibitions of machine industry and is held in the exhibition hall of the Tokyo Big Sight. Occupying a hall area from 82'660 m², 5000 exhibitors will be introducing the latest technologies for sheet metal processing.

BRUDERER will present the BSTA 250 with an interesting application and an extensive range of accessories. Motivated by the successes in the Japanese market of the past months, where we were able to place several BSTA at well known customers. In the local Japanese electronic and automotive industry, our approaches and innovative solutions for these applications have proven to fulfill the high requirements.

We would be pleased to welcome you as our guest at East-Hall 1, booth E1029.



Preview DMP Dongguan, China 15.11. – 18.11.2006

Directly following the JIMTOF we will participate in the DMP International Machinery, Materials and Mould Exhibition Dongguan in the South of China, where we will present a punching press of type BSTA 250.

The DMP trade show takes place in the "Guangdong decaying internationally Exhibition centre" and is considered as important platform to innovative enterprises and solutions in Southern China. The region Guangdong imported and exported goods in the value of 428 billions US\$ (535 billions CHF) in the year 2005. This impressive number is much higher than the GDP of Switzerland in 2005 (457 billions CHF). 238 billions US\$ out of it are the export quote where the machine industry and the electrical products are the largest part.

Take this opportunity and visit us at Hall 3B, booth M41. Our customer advisers would be delighted to show you the latest technologies.

Reader survey STAMPER

Dear Reader

We would like to thank you for your interest in this magazine for high-performance stamping technique.

Help us to make the STAMPER even better. After having published the magazine for 2 years we would appreciate your opinion and suggestions concerning our company magazine. Please, fill in the questionnaire and return it to us by fax until 17th November 2006 under:

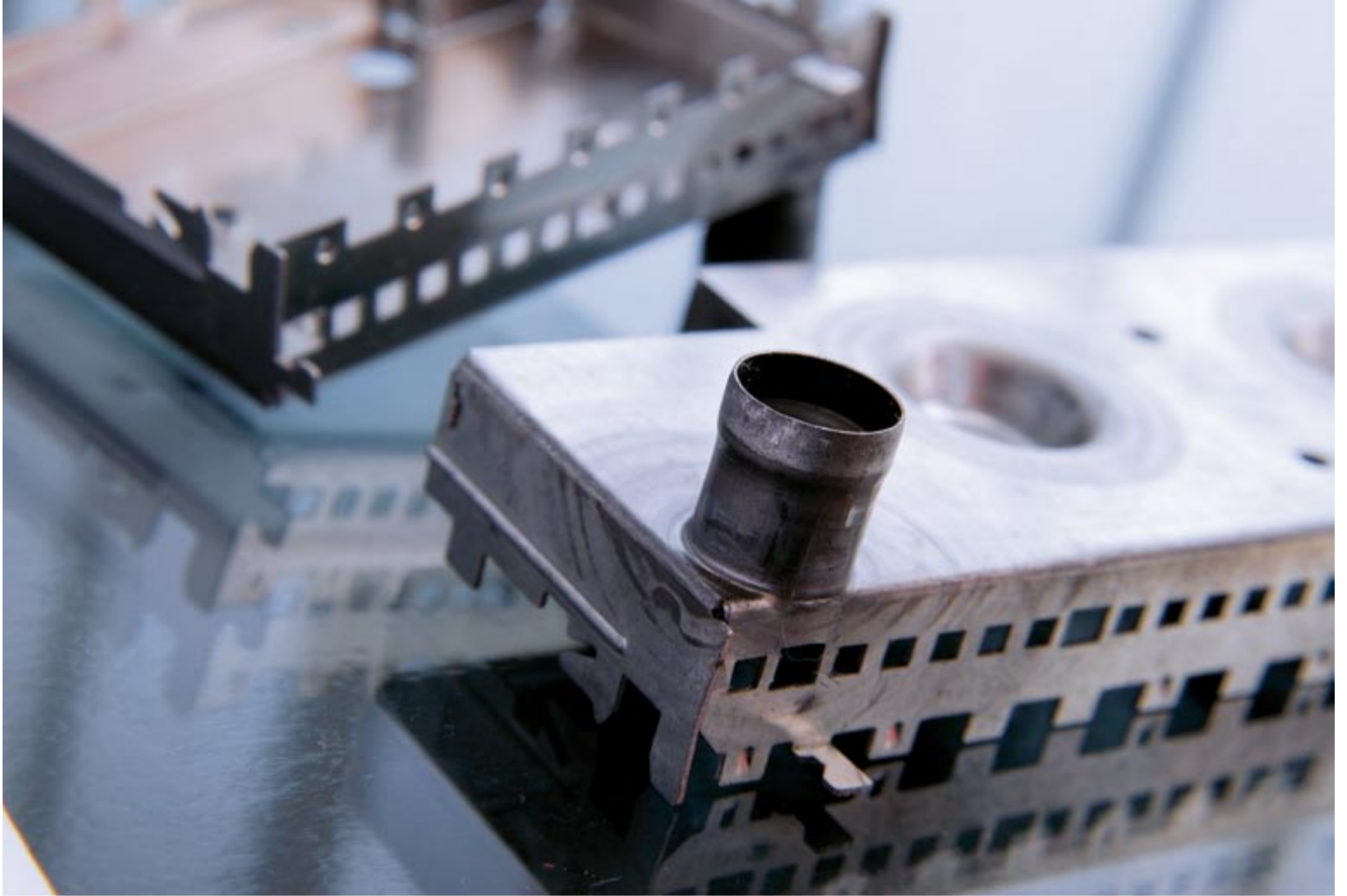
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Ms. Knuth will also be happy to receive your suggestions and ideas by e-mail under knutm@ch.bruderer-presses.com or by phone under +41 71 447 77 50.

Thank you for your time and cooperation
Your BRUDERER Team

BRUDERER

MECLOSTAMPI – An Italian Story of Success



In 1968, MECLOSTAMPI was founded in a small premise close to Saronno. Under the management of Antonio Canobbio, the small handicraft business developed into a rapidly growing company. In 1978, the company moved to Lomazzo, today's headquarters, where the team was expanded by the new Head of Engineering, Riccardo Fiorencis, who turned out to be a significant driving force and source of innovative ideas and stimuli developing into an indispensable pillar of the management. We at BRUDERER are proud of having accompanied this Italian model company a long way over a long period.



Responsible for the success at MECLOSTAMPI:
Signore Antonio Canobbio

The innovation spirit has always been the driving force and the thread of the business strategy of MECLOSTAMPI. The secret behind their business success: With the latest technologies, the quality standards for all production processes were increased thus paving the way for the future. To name just a few examples: The engineering office, responsible for developing

and planning the punching tools, disposes of a state-of-the-art IT network employing the latest CAD/CAM systems for two-dimensional or three-dimensional machining. In the milling shop, all machines are linked to the CAD/CAM system. High-tech was also introduced to the production systems. Here, the high-power and high-accuracy vertical machining center by Yasada is especially noteworthy. The fully air-conditioned EDM division disposes of the latest machines with linear motors and in addition of electric-discharge machines for the machining in an oil bath with extremely thin thread.



Gives impulses: Giuseppe Canobbio and Riccardo Fiorencis, undeniable capacity at MECLOSTAMPI

As this allows for a higher part quality to be achieved, this is where all active parts of the punching tools, produced from carbide, are machined. The management system for quality assurance is based on the UNI EN ISO 9001:2000 standard. The metrology division is equipped with the latest state-of-the-art instruments with specific advanced software and with

IT tools for statistic process monitoring.

Like the BRUDERER AG, MECLOSTAMPI has realized time and again during the company's history that next to the latest technologies it is last not least the employees who have a considerable share in the success. The thumb rule being – you have to provide for optimum conditions for top-rate perform-



Competent and responsible for a successful production:
Valter Canobbio

ance if you intend to demand such performance. Therefore, MECLOSTAMPI attaches great importance to the education of the younger employees. In close cooperation with the local educational establishments, also the ambitious junior staff is given a chance. However, not only inward but also outward cooperation is something to which great value is attached. Therefore, nobody seems surprised that the perfectly harmonic cooperation with BRUDERER already dates way back. Long before the building of their own pressroom in 1991, they kept up good relations with our field staff and engineers – relations which

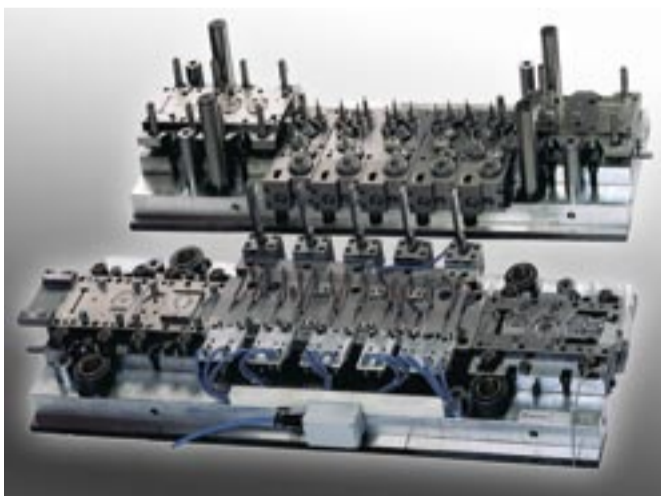


have permanently been intensified over the past 15 years. The vivid exchange of opinions and experience is marked by mutual respect and complete confidence.

Through the setup of their own pressroom, a particularly big stone was set rolling towards BRUDERER by MECLOSTAMPI. As additional service, the opportunity opened to carry out extensive tests at the newly developed tools. Under realistic production conditions, pre-series productions could be run. Furthermore, MECLOSTAMPI owes one other exceptional market

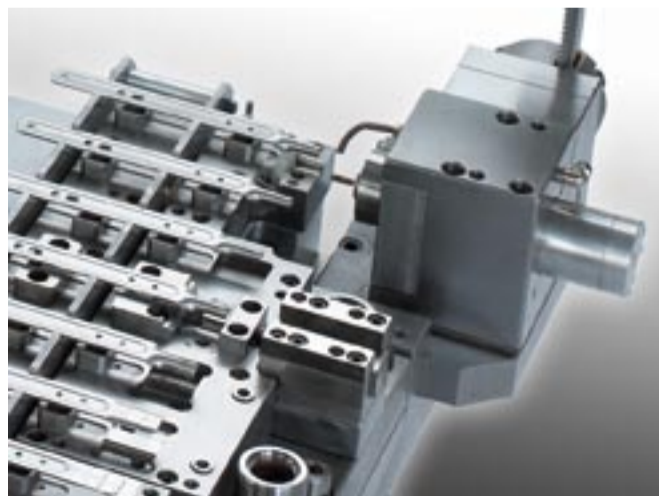
MECLOSTAMPI and BRUDERER – an unorthodox team?! Hardly; we like to hear, though, when voices from Italy time and again praise the special advantages of our automatic punching presses.

Next to the high speed, it is above all the extreme accuracy and the high reliability that convince customers. This is the only way of granting the high standard relating to the quality of the punched parts and the long life of the punching tools even in the future. The permanent efficiency control of the punching



Progressive punching tool for complex geometries of stamped parts made by MECLOSTAMPI

position to their often and well proven tapping units for follow-on tools with which they have been established in the market for over 20 years by now. The success of the units is due to maximum productivity combined with highest quality, precision, and reliability. Numerous customers, especially from the automotive industry, profit from this unique competence edge.



Lower part of a punching tool with integrated unit for thread cutting

tools under real production conditions and the analysis of the results achieved confirm the management's conviction that maximum efficiency can only be obtained through a perfectly harmonized combination of tools and punching machine. In this sense, the cooperation with BRUDERER was the right choice for MECLOSTAMPI.



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SANKYO SEISAKUSHO Co.:

Experts in high-speed feeders

SANKYO has been providing high-speed motion control products for over 30 years since developing Japan's first "Roller-Gear Cam" indexer in 1973. Today, SANKYO's high-speed cam solutions serve a wide range of industries including the high speed stamping industry. Our solutions contribute to maximizing the productivity of our customers with unsurpassed speed and precision.

In 1980, SANKYO introduced the "Variax", a new high-speed press feeder driven by a roller gear cam mechanism. Since then, more than 4,000 Variax feeders have been installed on presses all around the world.



The Variax is manufactured in Ichikawa, Japan

The increase in demand for electronic components (for mobile phones and consumer electronic devices), and motor core stampings places even further demands on precision and speed. Additionally, the final product continues to get smaller

requiring the use of thinner gage material. For example, most electronic components are now being made from material 0.05 to 0.08 mm thick, and motor core stampings from 0.25 to 0.35 mm thick. The path through which this material passes (from the feeder to the die) includes guiding and other elements that can affect feed accuracy and make it more difficult to feed at high speeds with high precision.

One connector manufacturer producing parts (2 mm wide by 0.1 mm thick) at a 2 mm feed pitch at 700 spm experienced feed pitch errors and inconsistent repeatability. SANKYO's solution was a Variax VGM8. This is an extremely small feed designed to mount directly to the press bolster. SANKYO installed one for this customer close to the die. As a result, the accuracy of the feeder was directly transmitted to the die. Not only did this eliminate feed pitch error, repeatability became



Variax VGM8 (VG mini) for thin gage material and short feed pitches

consistent and allowed the customer to increase the speed up to 1000 spm.

Sankyo also develops stamping line solutions such as the Variax loop controller to enhance feeding stability and final product quality.

Specifications of the VGM8

Size (W x L x H)	mm	250 x 210 x 121
Feed pitch max	mm	8.0
Stock thickness max.	mm	0.5
Stock width max.	mm	30.0
Stroke/minute max.	spm	1'000
Feed speed max.	m/min	2.0
Weight	kg	15



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PRESSCOMP: Dare to Dream

When a dream turned into reality it shows the true passion of a person. Mr Moshin Asgars dream became true

He started his professional career in a small tool shop. 1983 he set up his own company PRESSCOMP International Pvt Limited Bangalore with an investment of 500'000 Rupies that covered a working area of approximately 2000 sqft. Initially catering to only a couple of customers, it made a modest beginning with four power presses and a couple of grinding machines manned by a few highly qualified and skilled staff.

Mr Asgar, a technocrat, who had dreams to revolutionize the Engineering Sector in India in manufacturing high precision press components and also to own one of the BRUDERER high performance stamping machines one day. Nothing could prevent him from completing his life's dream. In May 2003 he finally bought his first BSTA 50A. Today, three automatic punching presses „Made in Switzerland“ are installed at PRESSCOMP in Bangalore.



Transpose dreams in facts: Mr Peter Fernandez from BRUDERER India and Mr Moshin Asgar, owner of the company PRESSCOMP in Bangalore/India

Besides being an ISO 9001 certified company, PRESSCOMP has been supplying high quality stamping parts and press tools to a range of satisfied customers like Schneider Electric, ADC Krone, Tyco Electronics, Kodak, Novar India, etc. PRESSCOMP has also received the award for the "Best Vendor for Tool support for stamping dies" from Schneider Electric.



At this time, we would like to take this opportunity to express our thanks to Mr Moshin Asgar for the many years of close cooperation our companies have enjoyed. We also trust that our close business links will continue to flourish both now and in the future.

This example shows that investing into BRUDERER machines will satisfy your demand and help you to succeed in today's markets.

Since 1943, BRUDERER customers have trusted us to provide practical, expert and system-wide advice and support. We are proud on the long term relationship with our worldwide customer base. This basics for us is to provide good pre-sales service through a project phase as well as an outstanding after sales service.



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SLE electronic trust in the manufacturing location Bavarian Forrest Congratulations from BRUDERER to the opening of the new production building

2006 is not only a special year for sports in Germany, but also for the innovative electronic company SLE in the Bavarian forest: In particular the manufacturing of special machines of SLE electronic needs more space, in order to satisfy the requirements of the international market.

Already after 10 years the headquarters in Grafenau must be extended by a new factory. For the opening ceremony in June, the Bavarian Minister of Commerce, Mr. Erwin Huber gave SLE the honour and delivered the opening address.

In the address he pointed out that „production in Bavaria has a future. The State of Bavaria and the whole region can count themselves lucky, to have such an innovative and successful company like SLE electronic. It is deeply rooted in the Bavarian forest, internationally effective and expands from the domestic location“.

Within a few years SLE electronic developed to a world-wide operating and successful company that has been awarded several times for its product range.

With innovative solutions for High-Tech control systems in the field of connectors and the wiring harness production for the automotive industry, as well as with coating, preservation and cleaning of surfaces in the industrial manufacturing applies: SLE electronics is an essential partner.

Foundation for the business success of SLE electronic is the highly qualified and dedicated staff and the enterprise program for innovation:

“We always keep at it – we always want to meet the requirements of the market with our products and develop our company further with always new ideas”.



SLE headquarters and production plant in Grafenau



Managing Director Liebl and the Bavarian Minister of Commerce, Erwin Huber, during a guide through the new production plant

SLE electronic will be on the booth of BRUDERER as co-exhibitor at the trade show EuroBLECH 2006 and will introduce the modular strip lubrication system BSS 5000 and BSS 7000. In addition they will show innovative solutions for preservation and cleaning during the stamping process.



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Stamping-Days 2007 – Interview with Ulrich Brosz

Interview with Ulrich Brosz about success and prospects of the Stamping-Days 2007 in D-Pforzheim



Responsible for the Stamping-Days: Ulrich Brosz

Stamper: Mister Brosz, in less than a year the third Stamping-Days™ are going to take place in Pforzheim. The Stamping-Days™ are considered the leading trade show for state-of-the-art high precision stamping technology in this industry after no more than two events. To what do you attribute this success?

Brosz: Principally to three factors. First of all to the location of the trade show. Pforzheim happens to be the stronghold of high precision stamping technology, and also this industry must make itself increasingly visible to its customers and markets.

Second there is the rather narrow specialisation of the trade show in the stamping technology sector – and its peripheral areas. As exhibitor, we only accept companies from the inner core of the branch; in this way the Stamping-Days™ are not diluted and remain highly interesting to exhibitors and visitors.

And third it is of course the structure of the trade show that tips the scale. The Stamping-Days™ are conceived as a what we call 'Tischmesse' - a kind of contact or 'business-to-business'

trade show. Which means that the majority of exhibitors present themselves in a standardized environment with uniform booths. We will continue to foster and cultivate this familiar atmosphere at any rate.

Stamper: In view of so many positive signs allow the question of how the state of affairs is right now one year before the event?

Brosz: We are almost completely booked. A couple of square meters are still to be had. It is under these perfect conditions that we start canvassing visitors to the show. Things can hardly be better for all parties involved.

Stamper: However, rumour is spread that there are capacity problems at the place of the event?

Brosz: Yes, in the CongressCentrum Pforzheim virtually every square inch is occupied, and we will probably have to reduce the area of the large stands from the actual maximum of 27 down to 18 square meters in order to at least partly shorten



The Stamping-Days are conceived as „table trade show“

the waitlist. Many long-standing exhibitors have enlarged their booths, numerous newcomers come with medium sized stands.

Stamper: Under these circumstances, the question arises as to whether the Stamping-Days™ will remain at the location of Pforzheim?

Brosz: I was already asked this question after the first Stamping-Days™. And my answer is still the same: The Stamping-Days™ are inseparably linked to Pforzheim - and the capacity problem will have been solved until the 4th Stamping-Days™ Pforzheim in 2009. We are working on it...

Stamper: Another rumour has it that you are planning a new trade show in Dortmund?

Brosz: Yes, that is correct. We are in the pre-planning phase for a new trade show in Dortmund which will be of high interest also to stamping companies due to its conception. However, the new trade show will be no competition to the Stamping-Days™. The premiere is scheduled for November 2007; I am sorry, but this is all I can give away at this point of time.



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MOTOREX AG LANGENTHAL: Fluid technology for stamping and forming processes

Back in 1917, the family company started the production of leather and floor cleansing and care agents – today, the BUCHER-MOTOREX group is the largest oil refinement company in Switzerland. At its headquarters in Langenthal, the company employs more than 230 employees working in the research, development and production of pathbreaking lubricants. Above all, the activities of the MOTOREX AG LANGENTHAL focuses on the demands and requirements of the industrial sector.



Langenthal: Think tank and production site

At the headquarters in Langenthal, you will always find an innovation spirited atmosphere; it is here where the complex formulae are developed, new products are fathered, produced, and marketed imaginatively. By the way – the latter in such a successful way that MOTOREX was awarded the popular GfM (Schweizerische Gesellschaft für Marketing) prize some time ago.

The core competence of MOTOREX clearly lies in the tribologic new and further development of high-quality lubricants. Since 1974, the MOTOREX AG LANGENTHAL has focused on the particularities of the industrial usage of cutting oils, cooling lubricants, forming lubricants, cleaners, etc.

The result is the pathbreaking MOTOREX SWISSLINE – a complete product line reflecting the broad know-how of MOTOREX in metal machining & metal forming.



SWISSFORMING CONTACT-metal forming and stamping fluids

Efficiency and process stability are the focus of each production workshop. Under the name of SWISSFORMING CONTACT, MOTOREX developed a series of innovative heavy-duty metal forming lubricants free of chlorine and heavy metals. Sophisticated formulae and meticulously matched additives grant a perfect sliding friction characteristic for all machining processes. This efficiently prevents cold weldings and the forma-

tion of built-up edges as they especially occur with high-speed automatic punching presses. Another highly positive effect are optimized cutting and shearing surfaces and a longer tool life.

SWISSFORMING CONTACT was developed in the frame of a „MOTOREX SYNERGY PROJECT“. In this way, valuable findings and perceptions of all participants (machine and tool manufacturers, users and MOTOREX) could be integrated into the product profile thus systematically exploiting synergies.

Did we make you curious? Do you wish to learn more about how SWISSFORMING CONTACT can optimize the production process also in your company? Then contact us for more information at:



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BRUDERER Servo feed units of type BSV as „stand alone“ model

Following the market introduction of the servo feed units as integrated solutions for the B control in spring 2005; we now offer our customers the control-independent variants as 'stand-alone' model to be retrofitted to BRUDERER automatic punching presses.

Separate operating panel, flexible installation options, attachment packages for the uncomplicated and fast retrofit to the automatic punching press, extremely slim hardware interface to the machine control cabinet, simple and all-embracing operation; to name just the benchmark data of the BSV type servo feed units in 'stand-alone' design.



BSV 70 with separate operating panel as „stand alone“ model, mounted on a punching press of type BSTA 300

For the actual handling and operation, we rely on our proven B-control concept. For this purpose, several core functions were adopted for the 'stand-alone' operation:

Features at a glance

- Simple operation via 5.7" touch screen
- Tool and material data management
- Flexible parameterizable cam control with 4 customized cams (angle-angle and angle-time)
- TDC shutdown
- Language control, easy-to-use menus for commissioning
- Integrated password hierarchy system
- Display and archive for error messages
- Simple and fast connection via Ethernet



Easy to understand and simply to use: the operation of the BSV „stand alone“ model is operated by „touch-screen“

In technical terms, the BRUDERER servo feed units of type BSV as "stand alone" model match the integrated solutions. An extremely slim hardware interface to the machine control cabinet and the flexible mechanical assembly options allow the fast and uncomplicated retrofit even to older BRUDERER automatic punching presses.

Please contact us and let us convince you of the versatile opportunities to efficiently retrofit your machine.

BRUDERER

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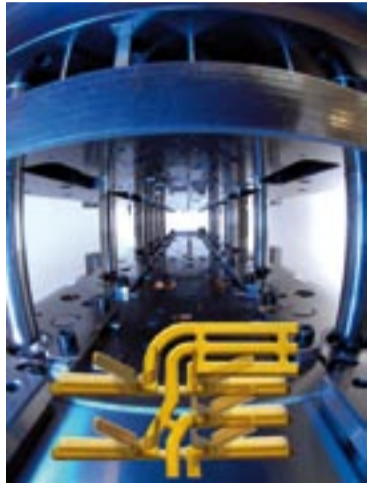
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HOFFMANN GmbH: Good is not good enough

A very high quality level in the stamping-technique is a result of efficient optimizations of the entire process chain. The consistent expansion in the enterprise levels of Hoffmann GmbH ensures increasing customer satisfaction.

Extensive investments in advanced production techniques and the expansion of staff with highly qualified employees currently form the medium-sized family-owned company. These activities cause considerable increases in the flexible productivity with high-quality management up to the traceability. The enlargement of production facilities by more than 1'000 m²



– on the existing ground as well as the rented hall in immediate proximity – effect the construction, the tool shop, the production and the complete logistics department.

In the interest of major customers and also to the advantage of smaller companies, both the development competence and data compatibility

are increased with the expansion of the 3D CAD construction. This facilitates a faster construction with computer-assisted collision detection as well as a premature starting tool and process optimization. The tool construction – one of the core competences of the company – is extended with a further erosion-machine for the fulfilment of complex requests. Along with these measurements the capacity of the complete tool shop was almost doubled.

The new BRUDERER BSTA 300 high precision stamping machine expands the manufacturing spectrum and allows the production of endless stamping-parts up to a strip width of 150 mm and a strip thickness of 2 mm in three shift operation.



Checked quality at Hoffmann: VideoCheck VVC 600

Special importance is drawn to the 100% quality control of the stamped parts. In this field the company has already extensive experiences with a monitoring cell VideoCheck VVC 600 in high-quality control by means of precise and reliable image processing. Three cameras guarantee an extremely exact inspection technology working for far more than 1'000 parts

per minute in automatic operation. After the inspection follows the automatic 12-fold winding unit. Consequently also the new stamping line contains of such equipment.

The complete quality control facilitates additionally an extended charge pursuit and documentation. With this state of the art quality management important steps have been taken to complete the traceability of the production. The high demands of the automotive industry are met.



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DIGIEMME SRL: Experience and competence in manufacturing systems

DIGIEMME is renowned for their transfer solutions. For more than 30 years this company offers not only customized and innovative solutions on small sheet metal parts but also superior precision. But that's not enough: DIGIEMME is aiming for complete project management for the preparation of the whole manufacturing plant.

DIGIEMME was founded 1974 in the North of Italy and developed to a leading tool maker, producing hardware for the furniture sector. Following on from their superior expertise and knowledge of tools, they introduced into the market the first transfer device to be installed on mechanical presses for the movement of parts from one station to the next into the stamping tool.

This was the beginning of DIGIEMME's experience in transfer tools. In comparison to progressive tools, there are a lot of advantages and solutions for different requirements. Besides allowing a remarkable saving of raw material, the "transfer" solution allows more precise, clean blanking, rotation and overturning of parts to execute complex operations. Moreover transfer tools mean less maintenance and easier inspection and cleaning, since the tool is divided into stations, as well as improving insertion and in die tapping procedures.



Electronic transfer TE2A450

Therefore due to the versatility of this solution and above all the expertise of technicians, today a variety of customers rely on DIGIEMME's operating solutions. The tool quality is guaranteed by the use of high performance materials, parts built with high precision using innovative machines and superior engineering experience. This and the ongoing research for solutions, gives to DIGIEMME a very diverse range of customers.

Although traditionally linked to furniture hardware, the company now has customers in various markets: from heating radiators, light switches, ball bearings producers, to car precision components. The resourcefulness of technicians has increased the specialization of transfers and strip-feeder



DIGIEMME mechanical transfer on BRUDERER Press BSTA 60

production. The range of transfer options from which customers can choose include mechanical and electronic transfer, both with the same importance for their different features. Mechanical type transfers are fast and very reliable, electronic types on the contrary allow a greater versatility, because they can not only be retrofitted on presses but also used on tools of different sizes and shapes. The same technology is applied to coil feeder production, with compact dimensions and high performance. Today the DIGIEMME knowledge and ability often means that they are able to supply complete production

lines for stamped parts. The company has in fact moved the Research and development department for the production of complete systems composed of press and its accessories to a location of 1'000 m². This is a further guarantee to their customers of reliability, performance, and quality of parts.



Some parts made with DIGIEMME transfer tools



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KUMMER GmbH + Co. KG:

Success does not come all by itself

Kummer is known as a specialist for tool, stamping, plastic, and assembly technology and engineering. The successful company from Ötisheim selectively pursues a policy of innovative technologies and occupies around 100 employees.

Times have become more difficult. The economy regains momentum but very hesitantly and the news seems to consist of merely negative headlines these days. But they still exist, the successful companies defying the general trend and comprehending unfavourable conditions not as a problem but as a challenge. Kummer is one of these companies.

Divided into four business divisions

Key industries, as for instance the automotive industry, nowadays demand more from their suppliers than the mere made-to-order production. That is why Kummer has established itself as a system partner who not only manufactures precision stamped parts but supports and accompanies the customer from the product development up to the smooth just-in-time delivery of complete component assemblies.

In the fields of tool engineering, Kummer develops tools as they are required and prerequisite for a rational production. Founded in 1970, the company disposes of decades of experience and has selectively invested in the latest machine tools during the past years.

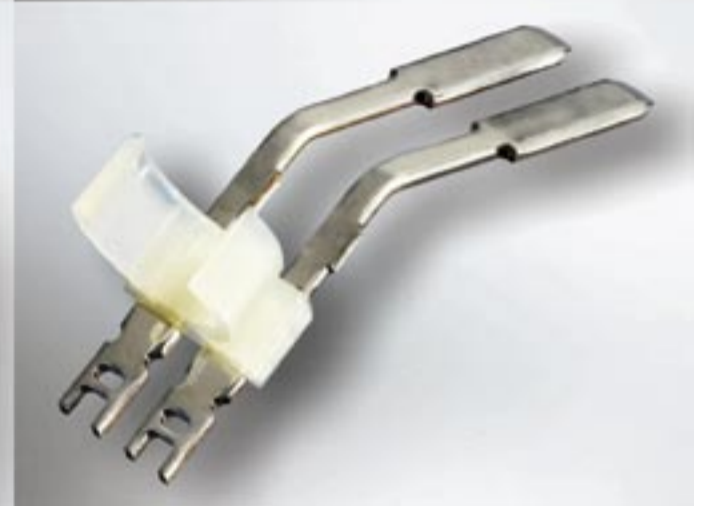
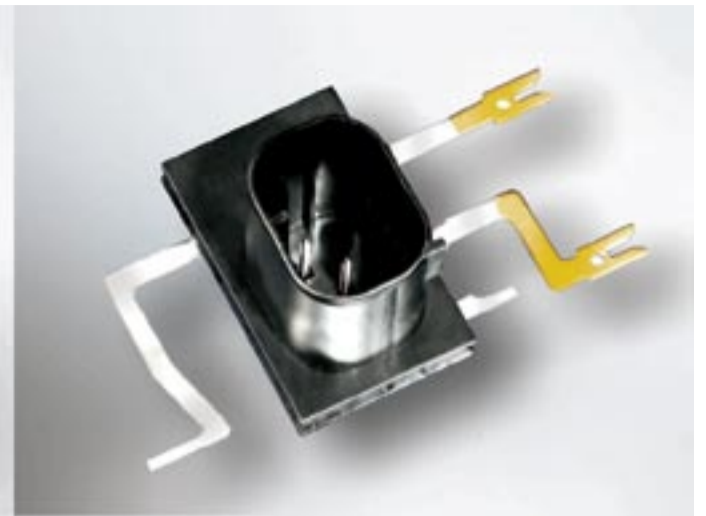
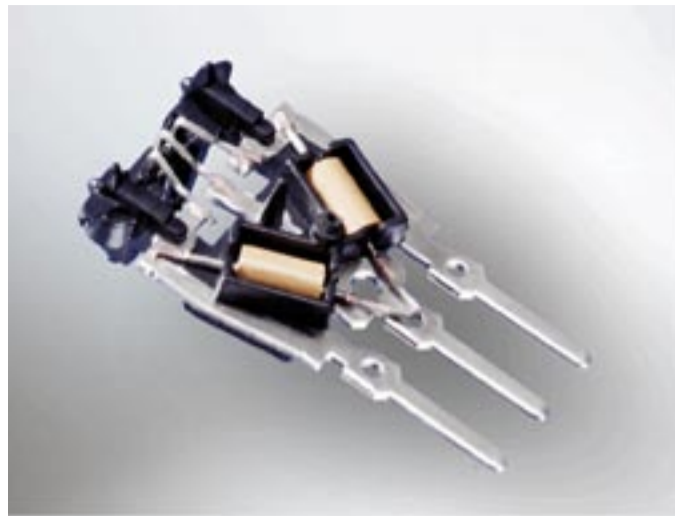
Kummer also employs state-of-the-art machines for the stamping technology. The automatic punching presses of BRUDERER support the production efficiently. The presently operated 9 systems will be expanded up to 11 production lines still this summer due to the permanent demand for quality products by Kummer. This constant growth impressively



demonstrates the high acceptance of the company Kummer throughout the various industry sectors.

Raw materials may be metal bands or strips with widths of up to 400 mm and a thickness between 0.04 and 3 mm. Next to conventional stamping and bending, special machining processes are also possible, like for instance deep drawing, flush trimming, thread forming, riveting, resistance welding or laser welding.

The plastics technology sector has specialized on directly insert-moulding stamped parts from metal with function



elements from plastics. In the fields of this special insert-moulding process, Kummer has achieved the reputation of an innovator by applying innovative machining technologies combining maximum precision with highest efficiency.

Assembly technology is another sector on which Kummer has developed into a reliable outsourcing partner supplying complete function modules from a single source. Here, ready to use components are produced as they are mainly used in electrical engineering and mechatronics.

Quality on international level

The manufacture of high-precision components requires controlled machining processes and a highly specialized measuring technology. That is why Kummer places the emphasis on a consistent quality management. It is borne by the philosophy that precision knows no compromise and nothing but perfectly faultless parts may leave the production site.



Normally, such parts are produced in the so-called reel-to-reel process where several machines are connected in series in order to execute the required working processes, as forming, bending, plastic injection moulding, and cut-off. However, this procedure has a number of disadvantages. Set-up times are relatively long as changing a part entails tool changes at several machines at a time. Furthermore, the working cycle of all machines must be adjusted to the slowest machine of the production line. As this would be the injection moulding machine in this case all punching presses linked to it must be operated at snail's pace thus remaining far below their actual productivity.

These inadequacies kept bothering the keen thinkers at Kummer. They reflected about summarizing several working cycles in one machine. The result was a further developed reel-to-reel procedure which is called "follow-on composite insert-moulding" at Kummer. It is a new technology offering the



customer crucial advantages: Tolerances are reduced to a minimum. The reject rate is considerably lower. Cost-intensive manual handling is avoided to a large extent. The entire production process is more stable, faster and less expensive.



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VISIKRON Terminal Control

Efficient artificial vision system for the modern stamping industry

Visikron is a versatile artificial vision system for the inspection of stamped products. While primarily designed for quality control, quite a few customers have found other interesting uses.



There are various artificial vision systems for the stamping industry on the market. Many of these are equipped with sophisticated processors, others impress with elegant packaging, and some are easy to operate and user-friendly. Nonetheless, the stamping industry needs all of these features - and more - in one system.

The customer is in this case an important manufacturer of electronics. More than 40 automatic punching presses are installed in his factory – the majority is equipped with artificial vision control systems. In many cases, the operating speed exceeds 1'500 strokes per minute (spm). After several months of working with the vision system, the production engineers discovered an interesting additional benefit and unexpected use of the machines: the measuring instruments graphically



represent data in real time; the measurement results show certain tendencies depending on the increase or decrease of defined values thus permitting to predict possible failures in the main system of the press. In other words, the vision equipment not only verifies the quality of a product, but also monitors the operating condition of the machine avoiding loss of time and money due to breakdowns and downtimes.

The Visikron Terminal Control is the result of 20 years of experience in the use of artificial vision in the stamping industry. The concept of the Visikron is based on 2 principles:

Advanced, reliable, and adaptive hardware

- PPT Vision Impact Processor, digital technology immune to electrical noise, "C" or "T" series depending on the speed of the required process
- Vision system, auxiliary PLC and a variance of frequency for direct connection to the web - simple control via touch-screen monitor
- Modular concept
- Virtual keyboard on the touch-screen monitor
- Bidirectional input, one or two band carriers
- Direct control via the main system or from an intermediate station
- 2 or 4 cameras in a vertical position, with telecentric lenses and low-distortion mirrors for the frontal view
- Infrared lighting
- Resolution up to 1600 x 1200 pixels
- Universal guide that permits quick and easy adaptation to a large range of products
- Four directional wheels with brakes
- Drawer for storing adjusting tools
- Integrated miniature personal computer
- Electrical protection through UPS system
- Capacity to control peripherals

Specific software individually developed for the stamping industry

This software – developed solely for Easycontrol S.L.– makes the programming of demanding inspection applications very simple. You do no longer need a qualified engineer to operate the vision system. A plant operator can quickly and easily be trained to use, edit, or even write programs.

- User-friendly menu, convenient presentation of data, results and images
- Inspection history of defective products for each camera
- Inspection history of images of defective products
- Log of events stored on hard-drive
- Easy creation and modification of applications
- Generation of statistics (measurements, counts, percentage, graphs, CPK, etc.)
- Hardware setting screens (gains, seals, calibration)
- Step-by-step assistance for program creation: visual examples and help text, level of grey adjustment via histogram, "drag and drop" system to locate "ROIs", test functions, and "go-back"
- Possibility to inspect 1 or 2 areas in each image
- 3 positions per camera (1 general, 2 internal)
- 20 settings per camera
- 8 measurement settings per camera (4 for oversize, 4 for undersize)
- 2 radial curve settings per camera
- Reference arrangement by family for storing and/or loading



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Machine controls: A View on the Next Generation

Let us turn back the wheels of time: not so long ago the scope of a machine control was focusing on just the simplest functions. There was no such thing as a tool safety device, monitoring of the press force was unheard of, and storing parameters still was a dream of the future. If one compares today's machine controls to the old generations we have to realize that modern types resemble system control centres and are able to take over complex tasks in fully automated operation. In earlier times, training was a foreign word, the few functions were self-explaining: the jet plane as symbol for high-speeds (spm), the snail for slow speeds, etc.

So one might wonder why machine controls offer ever more functionality and become ever more complex with extensive functions and can no longer be operated or understood without training. If we compare a state-of-the-art control to a mobile phone we will have to realize that also for using the mobile phone we have to fall back on the operating instructions - provided that you wish to take pictures using your mobile, send multi-media messages, match data via Bluetooth, change the background of the display, etc.

Added by the fact that factors like globalization of the markets, varying requirements and different comprehension of things concerning "look and feel" do not really make things easier for a manufacturer. Despite the influences to be taken into consideration, a mobile phone model is sold in identical design worldwide - and successfully so. This makes you wonder though why Europeans are capable of using Asian mobiles and vice versa.

Let us cast a glance on further factors referring to the machine control: Simple functionality of a control is vital where long machining times - especially on single purpose machines - have to be achieved. In such cases, the set-up of the punching press is rarely changed; programs to support retooling are not required. However, things are quite different where the tool may have to be changed daily in perfect coordination with a complex periphery. Not to forget a couple of monitoring system for tools, quality and machine. In such cases the support through an advanced machine control to help change the set-up is indispensable, unimaginable today.

From the production manager's point of view, the operation of the control should be the same for all automatic punching presses like for cars in pre-electronic times: steering wheel, throttle, clutch, brake, manual shift lever – full stop! Some of you may approve, but many will also shake their heads in disagreement: On the one hand because these cars do no longer exist nowadays - and not without reason - on the other hand because everyone had to learn how to drive anyway even decades ago. Let us assume that nobody would buy a car without electrical window-lifts, air conditioning, airbags, etc. today.

Despite all these technical "refinements" one forgets, that the distance between A and B can be reached by car without these features.

As manufacturer of automatic punching presses, we precisely rise to such challenges and develop based on the B-control a new concept with a reduced performance range. This concept contains all basic functions needed for the operation of a punching press. A machine control with primarily reduced scope of functions, with increased focus on long-run products, easy and intuitive to operate and offering the option to also adopt known functions for the stamping process to a limited extent. The main features of a simplified control named BE "Essential" will be introduced in a first step and includes:

Reduced hardware

Compact single-cabinet solutions with minimum footprint

Limited number of controlled axes

Peripheral power supply unnecessary

Fixed defined scope of functions - no special solutions

No rotating storage media, no fan in the PLC

New safety control with reduced hardware components

Reduced software

No pre-defined or programmable retooling sequences

Expanded freedom/responsibility for the operator

Reduced visualization without the loss of important information

Simplified operation with touch screen

In a next step, this simplified control is to allow for using the core functions of the machine and to embed them in the user's own control environment. This may be useful if, A: the automatic punching press as such only makes out for a small part of the production system, or B: the operating concept within a company is to be standardized.

This is achieved by isolating the technology functions like machine and process functions. This part of the so-called isolation is the most difficult one as in principle a ready-for-use series machine is practically turned into an OEM product - just as if only the mother board with plugged-on processor would be supplied as computer.

By now we encounter a high number of machining processes for which the automatic punching presses are no longer 'loosely' connected to the peripheral devices. The integration of stamping and forming - as partial process in an all-embracing

manufacturing and assembly line with complex material logistics - is in full swing in many areas. The production systems do no longer manufacture single stamped parts but rather system components or finished/ready-for-use products; the companies become no less than system suppliers in this process.

Also the B control profits from these considerations towards a simple control. Next to many small details, which have already been realized, the known operating panel comes equipped with a touch screen which - on some of the screens - will simplify the operation. The functions the operator is used to are maintained.

The simplified control will be used for the new Automatic Punching Press BSTA 200-60BE for the first time offering the following functions:

Machine functions

Stepless speed adjustment (spm), energy control

Stroke adjustment fixed/manual

Ram adjustment using servomotor with integrated position encoder

Dynamic compensation of the ram position with support points

Mechanical feeds with manual adjustment and digital display of the feed length

Four randomly programmable cams for customer-specific applications

Options

One servo feed unit with separate control cabinet, operation integrated in the machine control

Press force measurement using 2 sensors

Tool safety device with 4 or 8 channels

Position monitoring with 4 inputs, plus BDC positioning control through tool-integrated measurement

Essential features of the operation

Touch screen

The machine operator always works in set-up or auto mode

Changing parameters during the set-up process takes immediate effect, no retooling required

www.bruderer-presses.com

BRUDERER Homepage: Frequently asked questions

Question

What is the difference between the insertion depth measurement offered so far in relation to the analogue ram depth control (eddy current sensors) with distance measurements in the die?

Answer

At the present version of the insertion depth measurement the position of the ram is measured by a magnetic tape. Due to the fact that the measuring system is attached to the ram and the guide support, only the ram position is measured and not the actual die position. The new measuring method is very close to the actual stamping process as the sensors are mounted in the die itself. Obviously, this improves the process and parts accuracy.

Question

Is it reasonable to integrate the insertion depth measurement if the tool is equipped with mechanical stopper blocks?

Answer

The insertion depth measurement at the ram / guide support has its limits when using tools with stopper blocks. For this purpose the measurement unit is too far away from the process (or the stamping die respectively). With the analogue BRUDERER ram position control, the distance is measured by means of eddy current sensors, which are located in the die. Therefore this system can detect displacements of the ram in BDC more accurate or stop the machine in case the set limits are exceeded.

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

Preview of STAMPER 1/07

- Presentation: New BSTA 200-60BE and BBV 180
- Exhibition preview: BLECHEXPO Stuttgart 2007
- Articles around the manufacturing process
- The latest news about control systems
- Next issue: in the beginning of June 2007