

# NETSHAPE

Hatebur magazine for horizontal cold and hot forming – 1/08



NEUMAYER TEKFOR: first HM 35 marks the start of a new era

# EDITORIAL

## DEAR READERS,

Regular and open communication with our customers and other experts in the industry is an important principle for us. It has always been something we have worked on at Hatebur and has been a major feature of our good customer relations. You are now looking at the first issue of our new magazine. It gives me great pleasure to introduce you to "Netshape" as the latest addition to our choice of communication platforms.

There are always plenty of background stories to relate about Hatebur and its world. Our corporation is a global operator with a number of new subsidiaries. Innovative products are in the pipeline. Our service department is



more dynamic and effective than ever. In short, there is lots of good news we are keen to share with you. Because you are an important part of our story. Among the hottest news items is the Hatebur Hotmatic HM 35, of which six examples have already been sold – to clients in Germany, Japan and Korea. The most recent has just been commissioned at the automotive supplier Neumayer Tekfor. A premiere that we report extensively on in this issue. While another article looks in detail at the development of the HM 35. We hope that those and the other reports in this issue provide you with interesting and stimulating reading.

Urs Tschudin, CEO

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## IMPRINT

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## ADDITIONAL SUBSIDIARY PROVIDES PROXIMITY TO NEW MARKETS IN ASIA



Additional to the subsidiaries in Germany and Japan, Hatebur established a new subsidiary in China – Hatebur (Shanghai) Technology Co., Ltd – at the beginning of this year. With the new presence in the market, Hatebur will be able to meet the high expectations of its Chinese customers in the areas of support and new machine sales.

*Yu Zheng Hua, the man in charge at Hatebur (Shanghai) Technology Co., Ltd.*

## NEW ADDITION TO DEMOCENTER: THE AKP 4-6 S

The Hatebur Democenter has just gained a new machine. A Hatebur Coldmatic AKP 4-6 S which was commissioned in April. The coldformer was installed and tested by the company's own engineers. It is now up and running and ready for demonstration, tool trials or trainings. Visitors now have the opportunity to witness the impressive machine in "live" production.



## NEW EYECATCHER AT HATEBUR

The foyer of the Hatebur headquarters in Reinach (Switzerland) has undergone a complete transformation. Over a period of three months, the design and ideas of a renowned architect have been implemented. The result certainly stands up to examination. The bright colors and open, spacious architecture create a modern and appealing impression. Welcome to Hatebur!









*The new Hatebur Hotmatic HM 35 horizontal hotformer.*

## NEUMAYER TEKFOR MOVING UP A GEAR

 Anita Werten  Stephan Dürer

A new era has begun. Marked by a long-awaited premiere recently staged in the heart of the Black Forest. But if you thought we were talking about a production of a Grimm's fairy tale, you would be mistaken – though perhaps not entirely. Because, to a certain degree, we could describe it as a modern fairy tale. The first chapter of a happily-ever-after tale set in the world of metal forming. And written in Hausach. The town that is home to Neumayer Tekfor, a leading development partner for ready-to-fit parts in the automotive industry. An idyllic spot where, around two years ago, the decision was taken to consolidate the company's position as a global pacesetter by the purchase of its first Hatebur Hotmatic HM 35. It is an investment that promises much, because it should secure the technological leadership of the company for many years to come.





The latest product innovation from Hatebur is absolutely groundbreaking. The horizontal, four-stage hotformer offers its users the ultimate solution to the constantly growing needs for ultrahigh-precision and rapid production. It may sound like the realms of fantasy, but the Hatebur Hotmatic HM 35 is a machine that appears to perfectly combine the features of both a hot and a coldformer. It is a world-first that impresses by its unrivaled production rate of up to 180 forged parts a minute while simultaneously meeting the most exacting criteria for ultrahigh-precision production quality previously associated only with cold forming. An achievement made possible by its unique infeed and shearing system along with the reliable transfer system which lateral discharge enable parts to be delivered extremely gentle. Other outstanding features are the efficient cooling system, quick tool changeover, AC drive technology, approved machine design concept, and excellent user-friendliness. Too good to be true? By no means, because this seemingly futuristic dream is actually present-day reality.

The result of an expert eye for current market requirements, a visionary view of the demands of the future and the ability

ment of the company's stand-out products to date.

#### **“VORSPRUNG DURCH TECHNIK” REINTERPRETED**

With the acquisition of its first Hatebur Hotmatic HM 35, Neumayer Tekfor has added a high-quality precision forming machine with entirely new potential to its already extensive array of production plant. An investment that aims at substantially boosting the ongoing strategic development of the company and making a definitive contribution to securing its future prospects. “We are advancing the technology and getting a step ahead,” explains Oliver Maurer, Plant Manager. The key factor being that, “We can secure our lead by making sure we are at least six months to a year ahead of our competitors.”

#### **UNLIMITED TRUST**

The pilot project came about on the basis of a 50-year relationship between Neumayer Tekfor and Hatebur. Nevertheless, we should not forget that we are talking about an investment of several million euro here. Such a step is never without risk. The courage to invest is part of being a successful business, but at the same time, the

***“We are advancing the  
technology and getting a step  
ahead”***

*Camshaft for an  
Italian sports car.*

to respond correctly to market trends. And backed up by a position of technological leadership that Hatebur has occupied for decades in its global sector and has proven to be a decisively successful factor in the develop-

## *“Having four stations means precision. You get closer to the finished shape of the product”*

quality and reputation of Hatebur machines was a sure indicator of the soundness of the decision.

### **LIMITLESS SUCCESS – STARTING WITH HATEBUR**

Neumayer Tekfor Group products are in demand throughout the automotive industry. The Group reported turnover of 600 million euro in 2007. Of that figure, an impressive 160 million euro was earned by the production of 1,700 different articles by Neumayer Tekfor in Hausach – the headquarters and most important arm of the globally operating group. And the vast majority of those components were forged on hotformers supplied by Hatebur. The main products are for camshafts, connecting systems and engine and gearbox components which perform to the highest standards on cars and trucks produced by renowned vehicle manufacturers.

### **BIRTH OF A NEW GENERATION OF CARS**

The main purpose for which the Hatebur Hotmatic HM 35 will be used involves the production of a large number of new parts with precise forming requirements. Maurer sees opportunities for growth in the production of gearbox components in particular. “They require high precision as well as offering the prospect of suitably high production volumes.” In view of the good sales opportunities with existing clients plus the new Asian markets, the trend towards

gearboxes with more gears signals attractive potential for Neumayer Tekfor – already a big seller of transmission components. Being able to manufacture with a hotformer that has four forming stages instead of three is a unique situation for Neumayer Tekfor. It is clear to Project Manager, Eugen Armbruster, that, “Having four stations means precision. You get closer to the finished shape of the product.” In combination with the shorter throughput times, which equates to lower costs, this capability takes the company into a “new dimension”. In other



*Above and below:  
Oliver Maurer (Plant Manager) and  
Eugen Armbruster (HM 35 Project  
Manager).*





words, it clears the way for new developments. For innovations which, experience shows, the automotive industry is only too eager to adopt. Because Neumayer Tekfor deals in a business whose aim is to satisfy every desire.

#### **KNOCK-ON EFFECT – THE BENEFICIAL BYPRODUCT**

It's not just from a financial viewpoint that there is good reason for celebration. The acquisition of the new machine also triggered a genuine chain reaction in organizational terms. There was excited anticipation







once Neumayer Tekfor made the decision to purchase the Hatebur Hotmatic HM 35. "It gave the whole company a boost," relates Maurer. The preparation phase was intense and exciting. Amazing work was accomplished by the highly motivated team – including a number of challenges that had to be overcome for the Hotmatic HM 35 to be incorporated in the production line. Regardless of whether you are talking to office staff in the various departments or walking through the production shops to where the Hatebur Hotmatic HM 35 stands, the positive side effects are clearly evident throughout the company and at every level. A real raising of motivation has taken place. Another way in which the company has "invested in a new era".

#### OPTIMISTIC FUTURE PROSPECTS

As for how the story continues, the first products made with the machine have already been very positively received. With a demand level of around 50 million cars worldwide and in view of the future new developments by Neumayer Tekfor, much is still to come from the Hatebur Hotmatic HM 35. Car enthusiasts have much to look forward to!

*Another way in which the company has "invested in a new era".*



## POWERFUL PARTNERS JOIN FORCES TO PROVIDE SUPPORT SERVICES

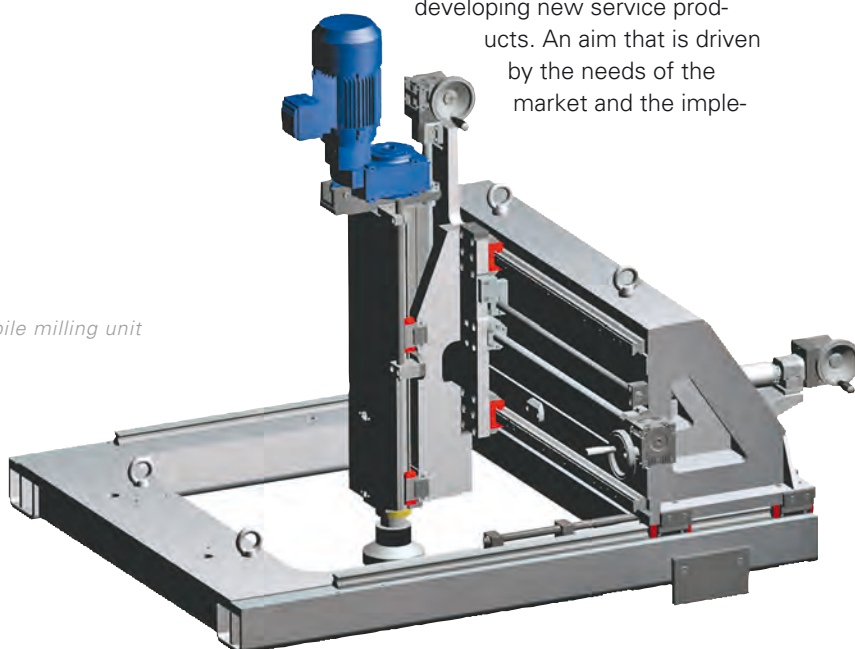
📄 Anita Werten 📄 Attila Barbetta

Service has become an increasingly important aspect of business in more recent times. Both customers and producers recognize that the best machine is only as good as the service that backs it up.

For Hatebur, customer service is now the company's second largest branch. An attractive range of services offers machine buyers the added value that makes the difference. Including reliable supply of spare parts and a comprehensive maintenance and servicing spectrum – provided by experts for experts anywhere in the world. Hatebur recently teamed up with Lumag AG, a partner in this sector for over 20 years, to create a new service provider and further advance its already powerful position in the repair and maintenance business. Called Hatebur Lumag-Services AG, the new operation brings together the experience of the two companies with the aim of jointly developing new service products. An aim that is driven by the needs of the market and the imple-

mentation of which is already well under way. The development of a new machining unit designed exclusively for the Hatebur machine types is one of the first examples. First used at the end of May 2008 for the AMP 20 (S) and AMP 30 (S), the device is perfectly adapted to the Hatebur hotformers so that it easily attaches to the machine body and, therefore, enables it to be quickly serviced. Re-milling and re-bedding – required on hotformers due to wear on the contact and bearing faces of the tool block and the pressure plate – can thus be carried out with shorter downtimes, more cost-efficiently and with the high level of accuracy required. And on site, of course.

*Mobile milling unit*





# SWISS PRECISION AT WORK

📄 Anita Werten 📷 Stephan Dürer

The Brugg assembly plant in northwestern Switzerland covers an area of roughly 600 square meters. There are another 500 m<sup>2</sup> of warehouse space where the necessary components are stored prior to use. We are talking about the facility owned by M+S Brugg AG. This is where some of the Hatebur high-quality precision forming machines are assembled, tested and shipped out to their final destinations – like mega watch movements.

M+S BRUGG – high-end machine assembly





M+S BRUGG – high-end machine assembly

*Above left: Hotmatic HM 35 assembly stations. Above right: AKP (coldformer) assembly stations.*

Productivity as far as the eye can see. A grid pattern of activities extends the length and width of the voluminous assembly plant. There is total concentration at the assembly stations, part racks and setdown points. Stacker trucks transport components of diverse varieties along forklift lanes in the shed from the warehouse to the assembly stations. The parts are then immediately mounted on the machines in the appropriate places by the fitters. Experts who know precisely which component is required next. The fitters have the benefit of the most advanced tools and implements. The plant also houses cranes for lifting heavy gears and large components or moving the heavy subassemblies.

Against this background of industrious activity, the third Hatebur Hotmatic HM 35 is on its way to completion. It is already an impressive landmark. Other types of machine whose individual components or subunits are assembled into serie production models are the AMP 20 S and the AKP 3-5, AKP 4-5 and AKP 4-6 S coldformers. Since its first contract from Hatebur in 1955, M+S has assembled nearly 300 machines. All of them

on customers demand. In order to handle the large and constantly increasing demand, no less than twelve top technicians in the M+S team work exclusively on Hatebur jobs. They make sure that the approximately 1,500 different parts involved (about a third fewer for an AMP 20 S) finish up as a perfectly functioning Hatebur machine. Six or seven of the units are assembled simultaneously. Assembly throughput times are 15 to 20 weeks.

#### EVERYONE'S AN EXPERT

The proportion of highly skilled staff at M+S is very large. "Sophisticated machines like the Hatebur horizontal parts formers demand highly qualified professionals who are passionate about building complex pieces of engineering and have the degree of expertise required," points out Erwin Wernli, Assembly Manager at M+S. The production of high-quality and large-scale industrial machinery requires assembly teams who have many years of experience, a thorough understanding of specialized machine design and think as a team. Specialists who talk the language of the customer as well as grasping the developers' intentions – to



*M+S assembly plant in Brugg.*





ensure the machines deliver high productivity over many years of use. Tight teamwork and long-term collaboration between Hatebur and the M+S engineers is an indispensable requirement. It is the only way to make an investment into a valuable asset.

### HIGH-PRECISION

For the machine to do what it promises, the highest standards of accuracy in assembly have to be the first priority. And to meet that demand, specific steps are necessary. The Hatebur purchasing department takes charge of worldwide parts procurement. Every single component is then individually checked at M+S prior to fitting. In that way, potential faults are minimized even before the machine is built and exceptional quality standards ensured.

The assembly proper of the Hatebur machines starts with the positioning of two heavy components: the base is formed by the machine frame. After it has been given its distinctive color in the paintshop, the press carriage guides are bedded in. Once again, absolute precision is an imperative. Afterwards, the fitting of small parts and final assembly starts. Detailed technical drawings from Hatebur form the basis for subsequent assembly of the machine. Around 20 to 30 assembly drawings – one for each of the machine's subassemblies – along with individual detailed drawings and parts lists guide M+S through the assembly operations. Individual components or pre-assembled subunits are fixed together by screw, bolt, clamp, socket and bonded joints to make the machine complete. The pipework for lubrication, compressed air and hydraulics is neatly arranged and attached. The machine is put together piece-by-piece



*Above: Erwin Wernli (left, Assembly Manager) and one of his staff discuss a job.*



*High-quality, precision pipework: a trademark of all Hatebur machines (pictured is the Hotmatic AMP 20 S).*

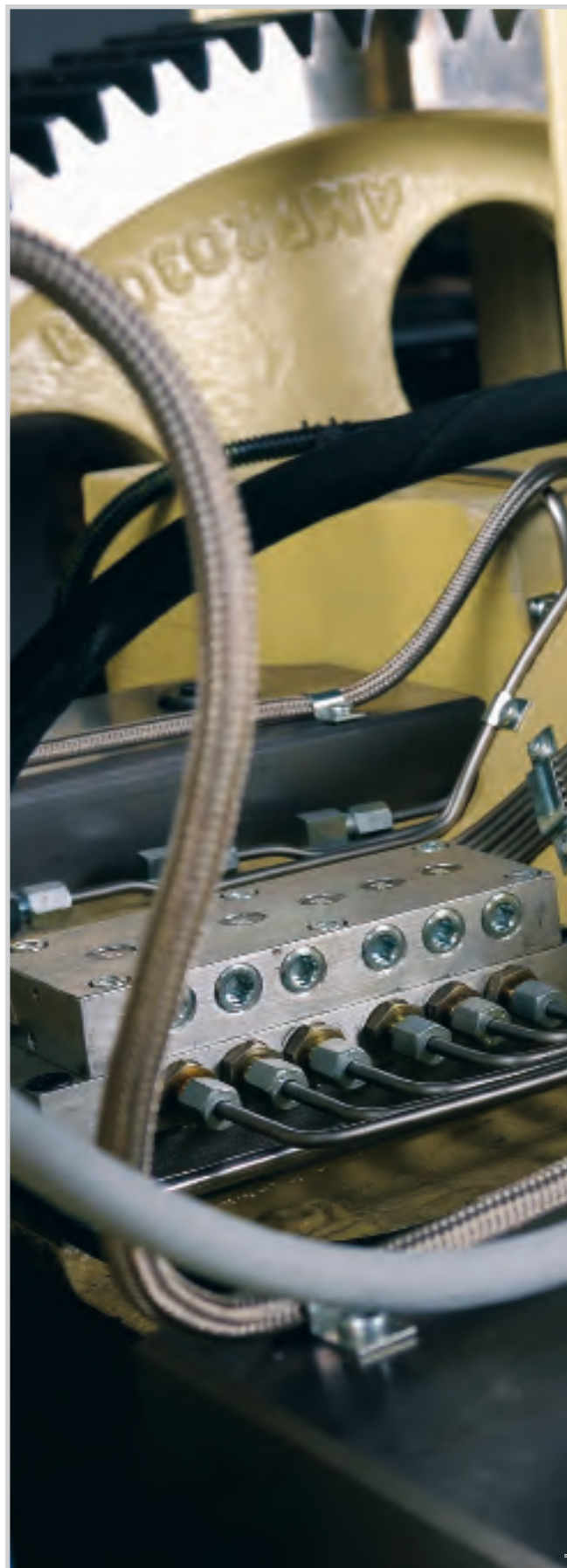
***“That guarantees that the machine is sent to the customer in perfect order”***

like a precision watch movement. Every one of the 1,500 components used in total fits the next with flawless accuracy.

#### **FINAL EXAMINATION**

The last phase is a test run and the calibration of the machine. Once again, skill and sensitivity are required. At the testing station, the machine is put through a careful and detailed examination to make sure that everything is working perfectly. M+S tests the functional capability, searches out any problems and puts them right. All measurements and readings taken in the course of those tests are meticulously logged in test reports and production records. As demanded by the strict requirements imposed by Hatebur.

The extensive series of tests are completed by a double-check: the machine is once more subjected to mechanical and electronic inspection to the most exacting quality control standards by Hatebur's own service and electrical engineers. “That guarantees that the machine is sent to the customer in perfect order,” elucidates Wernli. Once that examination has been passed, which apart from a few very minor inadequacies, has always been the case up to now, the machine is ready to be shipped anywhere in the world.











*Bernard Carray in action.*

### THE INTERFACE

Bernard Carray is in charge of assembly and production monitoring at Hatebur and as the interface between the two companies. He ensures that the processes run smoothly. "After such a long-standing relationship, M+S and Hatebur work together like a well-oiled machine themselves. As a professional provider with enormous technical expertise, M+S actively helps us continually optimize assembly processes and machine quality. And that goes for new machine designs like the HM 35 just as for improvements to existing models and installations."

### FACTS & FIGURES

#### Machines assembled by M+S:

- 100 Coldmatic AKP 4-5
- 50 Coldmatic AKP 3-5
- 8 Coldmatic AKP 4-6 S
- 130 Hotmatic AMP 20 S
- 2 Hotmatic HM 35



## 3 VISIONARIES – 5 KEY FEATURES

📄 Anita Werten, Christian Bürgin 📷 Stephan Dürer

A new generation of hotformers has seen the light of day. Hatebur's Hotmatic HM 35 offers its users ultrafast hot forming with which a vast diversity of precision forged components can be produced with exceptional efficiency. The HM 35 was brought into the world by a skilled team of professionals. "Netshape" spoke to three of them.



*Christoph Pergher*

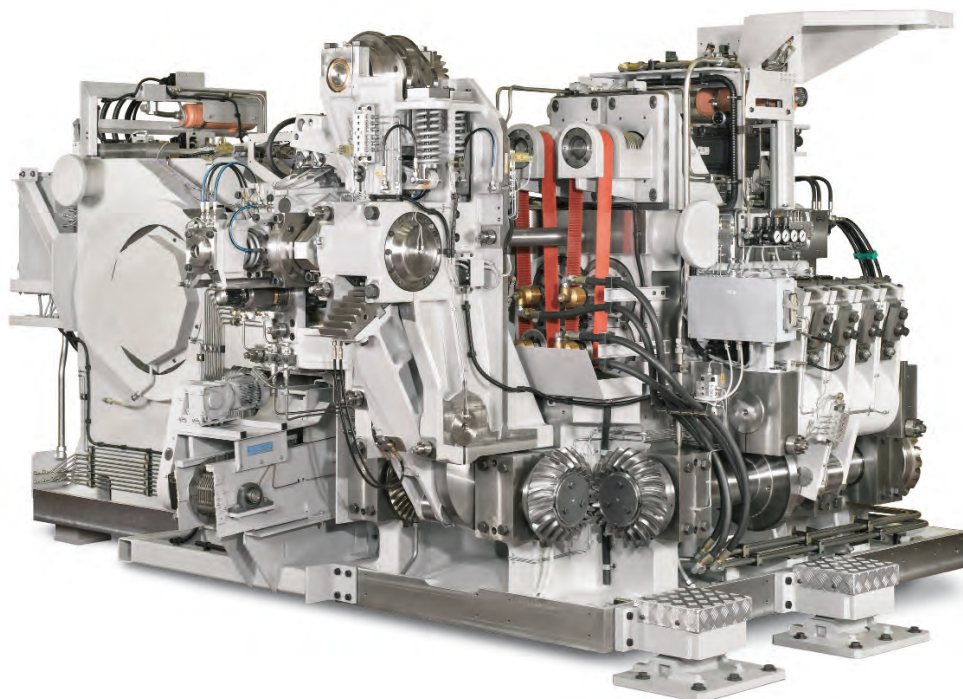


*Patrick Stemmelin*



*Klaus Helfer*

In it from the outset: Christoph Pergher, Head of Machine Design Department, Patrick Stemmelin, Manager Process and Tool Development and Klaus Helfer, Sales Manager. Christian Bürgin, Head of Sales Support and another member of the team, put on the interviewer's hat for this article and so was able to extract some fascinating inside information. Providing perspectives from three different departments that perfectly complemented each other in the creation of an innovative new product.



### HIGHLIGHTS

- Extremely high production rate
- Reliable and efficient transfer system
- Remarkable forging-friendly, lateral discharge
- Easy to operate and quick to change over
- More maintenance-friendly

**Mr. Pergher, when was the go-ahead for this project given?**

"The final design specifications were signed off in 2005. Barely 18 months later, the complete production documentation was passed over in stages to the purchasing department. A project team of 20 people put around 35,000 hours of work into the design of this machine."

**The development of such a complex system demands a very broad range of technical disciplines. How do you organize the team of developers and make sure communication between everyone involved functions properly?**

"Simultaneous engineering was the key to success for us in this extremely ambitious project. Within the department, we coordinated the concerns of machine design, electrical engineering and system planning in an interdisciplinary project management team. Regular meetings with external groups critically examined and optimized the concepts created."

**What were the biggest technical challenges of the project?**

"Achieving the very good cost:benefit ratio demanded by the design remit within such a short development period caused us a lot

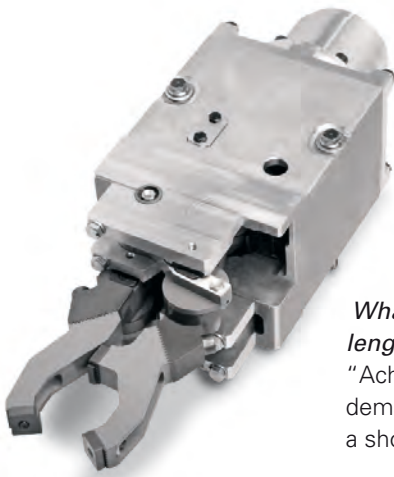
of headaches. For example, three different concepts were developed in detail for the key unit lateral transfer until a solution was finally found that satisfies the exacting demands."

**The HM 35 sports a whole cluster of innovations. But aside from all the obvious new features, one detail stands out: for the first time on a Hatebur machine there is no large drive gear – why not?**

"When proven designs are replaced, there have to be very good reasons for doing so. In the case of the complete press drive system, those reasons were the straightforward and direct power transmission to the control shafts and the substantially reduced inertia due to the absence of the large drive gear. And that reduces production and maintenance costs."

**If you had to pick out just ONE outstanding feature of the HM 35, what would it be?**

"Power density – the HM 35 combines established and innovative concepts to produce a versatile hot-forming machine designed for high productivity and customer benefit."



*The grabs are designed as quick-change units and couldn't be easier to fit and remove.*

**Mr. Helfer, the HM 35 will set new standards for medium-sized, horizontal hot formers. What are the decisive factors in that success?**

"In my opinion, the number-1 success factor is the excellent value for money. Another very important aspect is that the metal-forming industry will be able to produce more technically demanding products with the HM 35 that previously could only be manufactured by different processes or with additional processing stages."

**An out-of-the-ordinary product requires an appropriate market launch concept.****What avenues are you pursuing in that regard?**

"We presented the HM 35 concept to VIP clients in the most important markets three years ago to assess what the market really needed. That was followed by promotion in the trade press and at various trade fairs where we addressed the automotive and bearing industries in particular. The highlight of the market launch will be an invitation to our customers and the whole metal-forming community in the second half of May this year to come and see the HM 35 at Neumayer Tekfor in Hausach. Neumayer Tekfor is our first HM 35 customer. To complete

the market launch program, our representatives and subsidiary staff will be given training at a representatives' convention."

***Will the HM 35 displace the AMP 30 S "workhorse"?***

"I don't think that the AMP 30 S will disappear that quickly because there are still enough products in the "automotive and fasteners" sector for which the 3-stage

process will remain entirely adequate."

***If you had to pick out just ONE outstanding feature of the HM 35, what would it be?***

"The speed is the most impressive feature. To me, the HM 35 is the horizontal hot-forming equivalent of a Formula 1 grand-prix car!"

***Mr. Stemmelin, which products is the HM 35 aimed at?***

"The familiar AMP 30 S product spectrum forms the basis for the HM 35's repertoire. But because of its 4-station technology and highest increased press load, that basic range can be extended up to 75-mm gear-box components and 68-mm roller bearing races."

***Where do you see the greatest potential for future applications?***

"The first production data using the new cutting system has shown very promising results. There is still plenty of potential to be exploited there, especially in terms of the cutting materials used, and also with regard to the actual cutter geometry."

***The HM 35 tool concept uses the same diameter die for all four forming stages.***

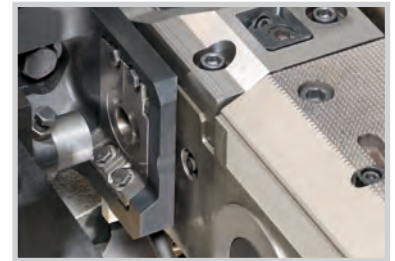
***What are the advantages of that?***

"The unusually large die diameter in the first forming stage opens up new possibilities for the volume distribution of complex forged components and is also required for forming combination

bearing races. Since the machine can also be operated with a 3-station process, it very quickly became clear that the second and third stations are required as equal-status mainforming dies."

***If you had to pick out just ONE outstanding feature of the HM 35, what would it be?***

"Process reliability – the HM 35 concept offers a previously unknown level of process reliability from material infeed through shearing station and transfer system to lateral discharge of the forgings."



*New developments:*

*Top: drive system*

*Bottom: shearing system*







## WIRE 2008 – SUCCESS BREEDS SUCCESS

A total of 73,600 trade visitors from over 90 countries attended the wire 2008 show from 31st March to 4th April 2008. As the world's leading expert forum for the wire and cable industry, including cold forming, the international trade fair once again brought and enormous diversity of specialists under one roof. Among the exhibitors in Hall 14 of the Düsseldorf exhibition center was Hatebur. "Freshly squeezed. Let's talk about cold forming while enjoying a glass of fresh orange juice" was the tag line on the invitations and the ads. Although, this time, the slogan might just as easily have been, "Making a new stand for success".

Equipped with an almost entirely new stand, Hatebur made a much bigger impact. The open, inviting space at the center of a modernized overall layout – including eyecatching presentation panels with integral consultation rooms, clearly arranged showcases and an LCD screen showing product trailers – offered visitors an exceptionally appealing presentation. And, as ever, there was expert advice from fully versed Hatebur delegates on products, services and all the latest innovations. The new, user-friendly touchscreen was on show too.

## TRADE FAIRS/EVENTS

Come and visit Hatebur at the following trade fairs:

**METALLOBRABOTKA 2008** in Moscow, Russia: 26-31/05/2008

**METALFORUM 2008** in Poznan, Poland: 9-12/06/2008

**SOUTH CHINA INTERNATIONAL AUTO PARTS MANUFACTURING**

**EQUIPMENT & MATERIALS EXHIBITION (IAP 2008)** in Guangzhou, China: 29/7-31/07/2008

**MSV 2008** in Brno, Czech Republic: 15-19/09/2008

**BEARING 2008** in Shanghai, China: 23-26/09/2008

**INT. INDUSTRY FORUM** in Kiev, Ukraine: 25-28/11/2008