

# NETSHAPE

Hatebur magazine for horizontal cold and hot forming – 1/09



PENN: The AMP 70 XL has now turned a 20 year long vision into a reality

# EDITORIAL

## A LOOK INTO THE CRYSTAL BALL



"Have you already bought your new car as you originally planned?

Why not? There has never been a better time to buy." The financing terms offered by the seller or available through consumer credit are also more favorable than ever before. But despite all that, car sales are collapsing to an extent never experienced before. Our customers, car manufacturers and their suppliers have been directly affected by this development, as was Hatebur not long afterwards.

The recession triggered by subprime loans (mainly "junk mortgages") and derivatives was initially a financial problem. It was followed by a considerable and global loss of confidence in the banks. And now, that disquieting gut feeling has turned into a crisis. A feeling of insecurity makes a poor consumer and investor.

We are at the start of a lean period, the end of which is difficult to estimate. "Economic prophets" are forecasting two to three years.

Hatebur, a manufacturer of capital goods, has noticed the effect of this crisis in the absence of new orders for machines and in customers' desire to take delivery of their machines later than originally planned.

This collapse in the sale of machines and spare parts forces us to manage cashflow and liquidity with particular care. We are therefore particularly engaged in project investments which ensure our place as market leader in our particular field of technology. New procedures and processes produce a higher level of customer value. We are convinced that we can achieve our aim at prices which are acceptable to the market. We therefore look positively towards the future. But until we reach that point, I am obliged to recognize that while we will also continue to promote and foster the interests of our human resources (our employees), flexibility and a certain readiness to make sacrifices will be indispensable.

Bruno Niederer, Finance Director

## CONTENTS

### 3 NEWS IN BRIEF

Short reports from the world of Hatebur.

### 4 PENN – the AMP 70 XL has now turned a 20 year long vision into a reality.

### 10 SERVICES – Precision on-site line boring.

### 12 ANDRITZ HYDRO AG – Large-scale machine assembly.

### 18 INSIGHTS – Tool manufacture at Hatebur.

### 20 TRADE FAIRS/EVENTS – a retrospective look at IMTEX 2009 and a preview of forthcoming trade fairs and events.



#### Cover picture:

(from left to right)  
Rudolf Penn, Erwin Fritz,  
Gernot Penn.

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## BEST SUPPLIER 2008

Hatebur Metalforming Equipment Ltd. carried out an official supplier evaluation for the first time in 2008. Max Pichler AG from Liestal was chosen as "Best Supplier 2008", having gained 90 points out of a maximum score of 100. This award is now to be awarded annually in future. In the unofficial annual evaluation in 2007, Max Pichler AG had already achieved the highest points score with 85 and has long been considered a reliable partner for bushes (plain bearings) with tight tolerances which meet high demands in terms of raw material quality.



From left: Urs Tschudin (Hatebur CEO), Mr. Suter, Mr. Seppi and Mr. Pichler junior (Pichler AG).



## NORBERT JOEHL SALES MANAGER

Mr. Norbert Joehl came to Hatebur Metalforming Equipment Ltd. at the end of 2008. He assumed responsibility for the regions of Russia, CIS, the Balkan States and Eastern Europe, and took over the sales region of India from Daniel Krieg.



## DANIEL KRIEG TO JAPAN

Daniel Krieg, a long-standing member of staff in the Services division, is taking on a new challenge. From 1st April 2009, he is to assume responsibility for the demanding position of Sales and Aftersales Services Manager in Japan, at the Hatebur subsidiary Hatebur Japan K.K. His term of duty there is set to run for two years.

## FILMS FEATURING THE AMP 70

When the Netshape editorial staff visited the Penn plant in Austria, a new film was being shot showing the Hotmatic AMP 70 XL. As was the case with both of the new product films showing the HM 35 and AKP 4-6 S, the crew from Beck & Friends were filming with equipment which included a special high-speed camera. In this way, it was once again possible to create fascinating pictures showing the forming process of the AMP 70 XL in super slow motion.



## PENN – THE AMP 70 XL HAS NOW TURNED A 20 YEAR LONG VISION INTO A REALITY

📄 + 📷 Stephan Dürer

**Around 20 years ago, a vision was created: a horizontal hot former from Hatebur. In 2006, at the Wire (the international trade fair for wire and wire processing) in Düsseldorf, people shook hands for first time, having quickly reached an agreement. The representatives from Penn wanted a Hotmatic AMP 70 XL. And they got it too, even though the AMP 70 at this time was no longer officially an item in the Hatebur sales program. But it was just the right machine for what Penn wanted in their production plans. Now perfectly developed, more than 70 of such systems have been installed in the last 40 years or so. This is how the AMP 70 came to experience a renaissance. And for other customers as well, as was seen later.**

Why wait for 20 years to realize a vision? Judging by the meeting held at Penn in the Austrian town of Stratzdorf and by the impressions that were formed, it was quite clear that Penn stands for continuity, confidence and quality. Not just as far as its customers are concerned but also its employees. The Penn Group today operates with around 800 employees at four sites in Austria. The Jihlava (CZ) site has around 700 employees. The Group achieves an annual turnover of approx. 100 million euros.

*New production plant in Stratzdorf with a roofed area of approx. 11 000 m<sup>2</sup>.*



# HATEBUR

EXTENSIBLE NETWORKS FOR THE FUTURE





## *“Horizontal forming is another world.”*

It all began in 1965, when Rudolf Penn started out in business with the acquisition of a small forge in the Waldviertel area. Always based on the principle that growth can only be achieved with healthy roots, the Penn Group continued to enlarge, always looking towards the future, right through to the present day. The decision to buy a Hatebur forming machine was therefore no accident. Penn required more capacity for the production of forgings, so it was therefore the right time to enter into partnership with Hatebur. There was, however, also an awareness of the changes that were involved in the production process. “Horizontal forming is another world,” Gernot Penn, Managing Director of the plants in Austria, pointed out during the meeting. Until that

time, Penn had been forging exclusively on vertical formers.

### **A HATEBUR MACHINE NEEDS SPACE**

Once the decision to buy the Hatebur hot former had been taken, the question of finding a suitable location for such an installation became a pressing matter. The present location of Penn's headquarters in Imbach near Krems was unsuitable for the installation of an AMP 70 XL for several reasons. The factory in Imbach is situated in the middle of a residential area and is not very well connected in terms of transportation infrastructure. A decision was taken very quickly to choose a plot of industrial land (approx. 30000 m<sup>2</sup>) close to the picturesque town of Krems an der Donau. “It was not just that the land was being sold at a favorable price, it was ideal because it is right next to an electricity substation (power supply for the Hatebur machine) and the motorway

*A look at the AMP 70 XL and the spaciouly constructed factory building.*



to Vienna. It couldn't be better!" said Gernot Penn. The "AMP 70 XL" project could now get started. At Hatebur, work was busily underway assembling the machine, while in Stratzdorf, the architects were getting down to designing the new factory buildings. Both teams finished their work at about the same time. "It wasn't completely without its problems," pointed out Erwin Fritz, Technical Works Manager. "We had never had to deal with such a large-scale installation before. The whole infrastructure had to be reviewed again and the structural engineers really worked up a sweat when it came to designing the foundation." In total, 1500 tonnes of concrete and steel were used! Looking at the new factory building today, you can't help but be amazed. Everything has been very spaciouly designed and harmonized down to smallest detail. "We put up a building for the Hatebur machine, measuring 80 x 30 metres, and naturally wanted to make it perfect," added Gernot Penn with a smile. With an investment of around 20 million euros (including the Hatebur installation), this was an enormous project. Then, after a very short commissioning phase, the hot former actually went into production in the autumn of 2008.

### COMPLEX COMPONENTS FOR THE CONSTRUCTION INDUSTRY

The manufacture of components presented an additional tough challenge in the AMP 70 XL project. During an initial stage, Penn also purchased an agreement for the development of tools by Hatebur in addition to the machine itself. This was virtually the first chapter of a new production procedure at Penn. The first components that are now being forged on the AMP 70 XL come exclusively from the construction industry. In the case of one type of forging, it was even possible to manufacture two components at the same time in one forging operation – an extremely complex matter for tool design and construction but highly efficient once in production. Gernot Penn found it hard to believe. "We installed the tools and after just half a day, the first components were already coming out of the machine." "During this initial phase, collaboration with the tool development engineers from



*The AMP 70 XL team.*

*From left: Gerald Krapf, Manuel Siegl, Andreas Vaishor.*



*You soon work up a sweat when the parts emerge from the machine red hot.*

***"...hard to believe: After just half a day, the first parts were already coming out of the machine."***





*A look into the tool area of the AMP 70 XL.*

Hatebur was extremely positive and good-humored."

To strengthen their own expertise in tool development and manufacture, Penn has doubled its personnel capacity since the purchase of the Hatebur installation and has again increased training for its apprentices in this field. In addition, investment has been made in state-of-the-art 5 axis milling machines. A clear indication of how production will run in the future.

a relatively small share of business in the agriculture and railway industry. In the factory in the Czech Republic, the proportion of business is approx. 80% in the automotive and 20% in the construction industry. In Austria, it is practically the other way round. The largest customer country is Germany. Within the Penn Group, the factories always work closely together when it is essential to find the best possible solution for customer components. As a result, components will often be forged in the Czech Republic and then undergo machining and finishing in Austria. "We are moving more and more towards becoming a finished part manufacturer and away from being a mere forged part manufacturer." In order to promote this trend, the Penn Group has very effectively organized itself across a wide range of metal machining capabilities. They can now work significantly more closely with customers and make the most effective use of their expertise in the field of compo-



#### **AUTOMOTIVE AND CONSTRUCTION INDUSTRY**

At their plants in Austria and the Czech Republic, Penn manufacture components mainly for the automotive and construction industry, with



ment development. In this way, countless customer-specific components have already been optimized and redesigned. "In his work, my father was always finding new ways to innovate", Gernot Penn announces proudly. "If we are always just that little bit out in front, then our customers benefit from that as well."

### THE HUMAN TOUCH

Technological advance is not the only thing that is always in evidence at Penn; they also bring a decidedly open and friendly manner to proceedings. The human touch, which today, amidst all the hard facts and figures, has all but disappeared. "Fast action and straightforward negotiation – those are the virtues which are valued. People can rely on us," explained Gernot Penn. "Here in Europe, closeness to customers and flexibility are essential factors for a successful partnership."

### INCREASE IN PRODUCTIVITY

Back to the AMP 70 XL. Simple facts argued in favor of procuring the new hot former. In comparison to drop forges, productivity could be increased from 7 to 70 parts per minute and, in the same breath, the factory in the Czech Republic was able to concentrate on capacities for conventional forgings. For Penn, however, the most pleasing thing about the whole development was the fact that capacities

***"We would have no hesitation in recommending Hatebur as a partner."***

could now be created for new customers, who previously had to be disappointed. The new way forward: Large-scale forging production is now to be run on the Hatebur AMP 70 XL.

The basic technical data of the AMP 70 XL was a further important factor for investing in the Hatebur system. With its total press capacity of 15 000 kN and wide range of application for component weights of between 400 and 5000 grammes, it exactly met the requirements which Penn demanded from such an installation. Hatebur stood out as a machine manufacturer because of its years of experience, its excellent reputation in the market and reliable supply of spare parts with an after sales department close to the Penn plant.

"We are very happy with the new installation and have no hesitation in recommending Hatebur as a partner."

#### ***For more information, contact:***

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*Everything from one source: Forgings are processed further in the Stratzdorf plant itself.*



## HATEBUR-LUMAG SERVICES – PRECISION ON-SITE LINE BORING

📄 + 📷 Stephan Dürer

**The still young company Hatebur-Lumag Services AG with its new portable precision boring unit has an extended range of services immediately available to Hatebur customers. Ideal for refurbishing shearing slide, driveshaft and crankshaft bearing seatings as well as ejector bores.**

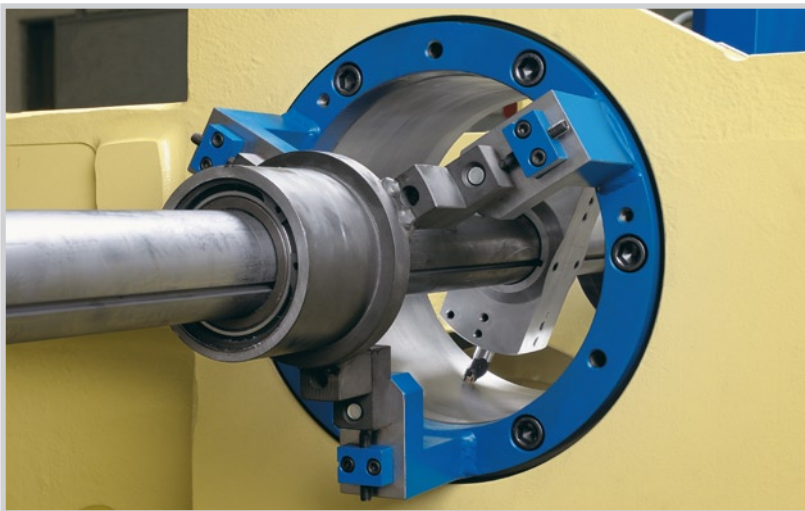
With its new finishing unit for precision boring all types of machine-cut holes, Hatebur-Lumag is taking the next logical step on the way to providing customers with a comprehensive service package.

### **MACHINE-CUT HOLES FROM 65 TO 600 MM**

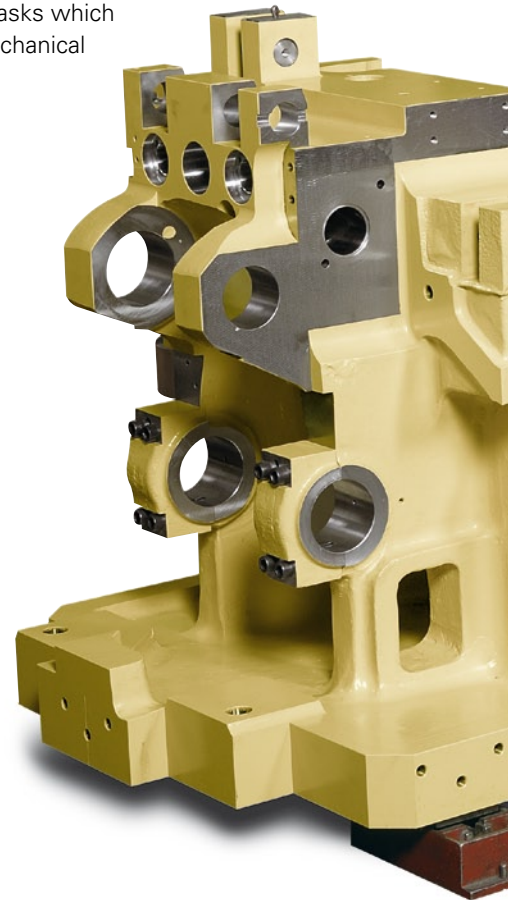
The spindle unit can handle bore sizes ranging from 65 to 600 mm and can machine up to a length of 3.5 meters, enabling it to cover a wide range of machining tasks

which can be performed by mobile finishing equipment.

Very compact and easy to handle, the machine has already achieved its first extremely positive results on a Hatebur hot former. Thanks to its electronic control system, the unit achieves very accurate results in tasks which require mechanical finishing.



*The mechanical machining head rotates on a driven shaft.*





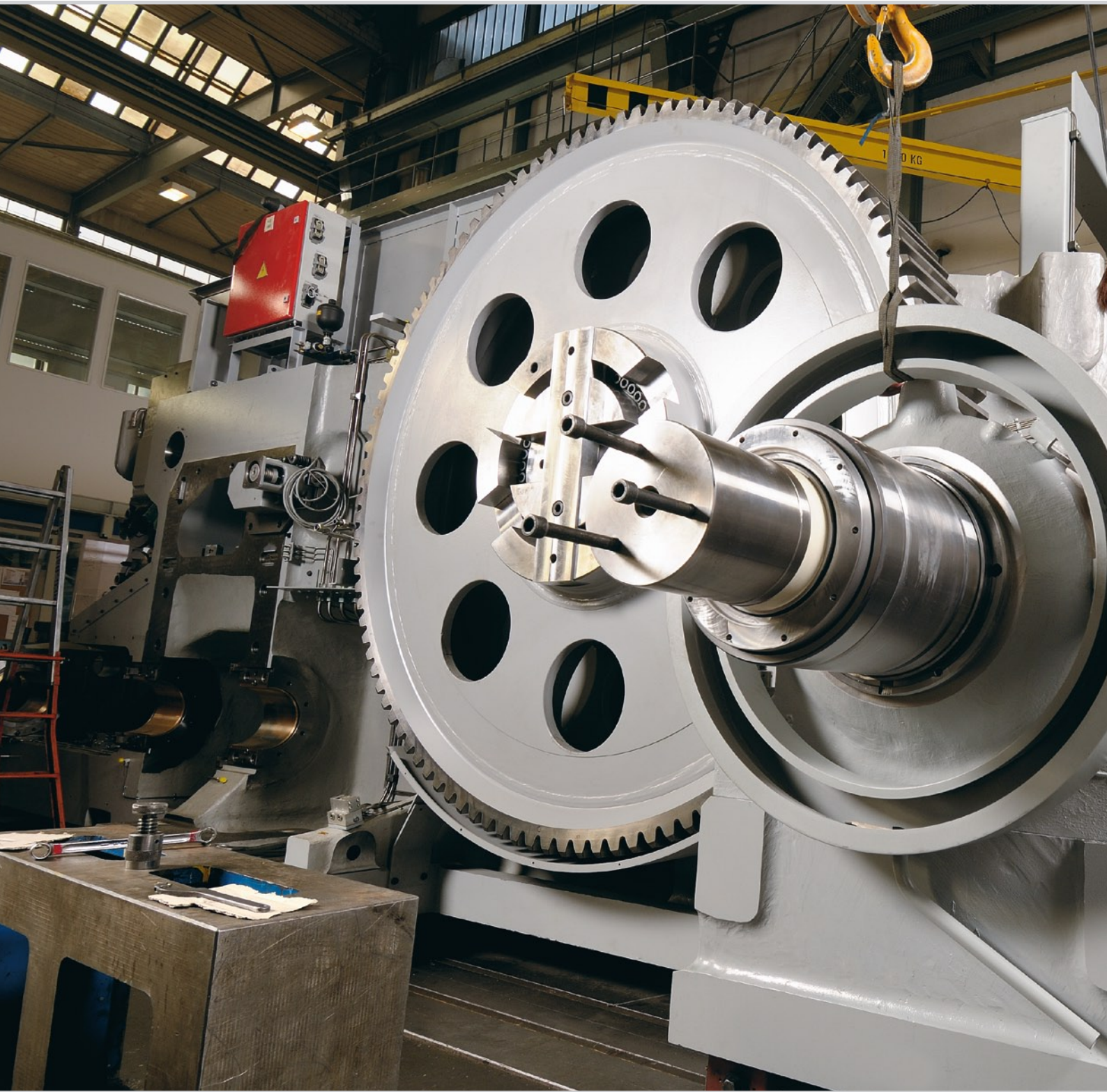
### FOR USE ON ALL HATEBUR MACHINES

The machining unit can be used on all Hatebur machines. Ideal applications include precision boring shearing slide, driveshaft and crankshaft bearing seatings as well as ejector bores.

The technical staff at Hatebur-Lumag Services would be pleased to provide you with further information if required and can be reached under tel. no. +41 62 754 16 01.



*The precision boring unit in use on a frame part of the Hotmatic AMP 20 S.*







## ANDRITZ HYDRO AG – LARGE-SCALE MACHINE ASSEMBLY

📄 + 📷 Stephan Dürer

It all began in 1962. At that time, the company Bell Maschinenfabrik AG in Kriens near Lucerne assembled the first machine for Hatebur. Right through until today, after almost 47 years, the partnership around a quality product has remained unbroken. The name of the company then known as Bell Maschinenfabrik is today no longer to be seen at the site in Kriens. Instead, the ANDRITZ HYDRO logo has been prominently displayed on the factory building since January 2009.

Have I come to the right place? On entering the assembly buildings at ANDRITZ HYDRO, I first found myself standing opposite an enormous Pelton wheel fitted to a hydroelectric power turbine. It is very impressive, as you stand next to it and learn that wheels like these are used to generate electricity from water power. "So where are the Hatebur machines?" "We assemble Hatebur machines down there in the next two buildings," explained Hans Nyfeler from ANDRITZ HYDRO.

And, lo and behold, the sight was just as impressive as we drew near to the two assembly areas for the big Hotmatic HM 75 and AMP 70 hot formers.

### 1600 M<sup>2</sup> FOR HATEBUR

"We have just about 4000 m<sup>2</sup> for assembling systems for the hydroelectric industry and, of course, for medium to large-scale Hatebur forming machines. We need about 1600 m<sup>2</sup> for Hatebur," explained Hans Nyfeler. He virtually acts as the interface between the Hatebur headquarters in Reinach and the ANDRITZ HYDRO assembly plant. Everything comes together under his care and he also acts as the final point of coordination for the Hatebur orders.

*Impressive proportions: the assembly of a Hotmatic HM 75 XL.*

### EVENTFUL HISTORY

Back to ANDRITZ HYDRO and the history of the assembly plant in Kriens: From Bell Maschinenfabrik to Bell-Escher Wyss Maschinenfabrik, then from Sulzer Hydro to VA-Tech Hydro, through to the present-day company known as ANDRITZ HYDRO AG. An eventful history, including a few changes of ownership which (and this becomes quite clear after speaking to various people) have contributed to the maturity of the workers at the Kriens site. It is therefore no surprise to hear Mr. Nyfeler claim that he has a very flexible team. "Not only can we employ our staff on the assembly of Hatebur machines but also deploy them short-term in assembling hydroelectric systems when there are peaks in demand. A great variety of different machines and systems have already been assembled in these buildings."

### STRATEGIC SIGNIFICANCE

When I asked Mr. Markus Pauli, the ANDRITZ HYDRO AG CEO, to explain to me the operations of the Andritz Group from a global perspective, I wasted no time in putting the question: "What sort of role does Hatebur play in such a large conglomerate which has its core businesses in pulp and paper machines, and machinery for using water power?" "We are essentially mechanical engineers and want to make the best possible use of our assembly capacity by entering into partnerships, as with Hatebur, for example," replied Mr. Pauli and then went on: "Business has grown and grown. Assembling Hatebur machines is today no longer just a buffer business but one of strategic significance." "We are making better use of the existing infrastructure, which helps us achieve a higher hourly output. In the end, that provides a more favorable cost structure," added Mr. Nyfeler.

### A NEW MACHINE EVERY FORTNIGHT

In the last 46 years of collaboration, 278 machines were assembled in Kriens and delivered. By the end of 2009, it will be 283. "There were times when one Hotmatic



Interviewees:  
Markus Pauli, CEO  
(top).  
Hans Nyfeler,  
Production Order  
Project Manager  
(bottom).





AMP 30 was leaving the assembly buildings every fortnight!" explained Mr. Nyfeler proudly. Today, about 20 highly qualified employees work in the assembly team on every aspect of Hatebur machines. Each is a specialist in his own field and always has his attention aimed at a high level of machine building quality for which Hatebur is well known among its customers.

A rough calculation of all the hours spent on assembly during this 46 year period produces an unimaginable total of 750,000 man hours. Given an annual output capacity of 1700 to 1800 hours per employee, it is possible to work out for oneself just how many people at ANDRITZ HYDRO have already been involved in working on Hatebur machines.

***"There were times when one Hotmatic AMP 30 was leaving the assembly buildings every fortnight!"***

#### **LARGE-SCALE MACHINE ASSEMBLY**

In addition to the AKP 5-5, AMP 40 and AMP 50 models, ANDRITZ HYDRO has latterly also been assembling the large-scale AMP 70 and HM 75 machines at the Kriens site for around six years. After the decision was taken to assemble these two large-scale hot formers at the Kriens site, the assembly areas had to fitted out accordingly. "Considering the high

*A view of the ANDRITZ HYDRO AG factory site in Kriens near Lucerne.*







Top: Assembly areas for the HM 75 XL and AMP 70 XL.

Bottom: A look at the assembly of an AKP 5-5. In the background, an AMP 50 XL and an AMP 40 S.





weight of large-scale machines like these, we had to adapt the foundations and crane capacities to accommodate them,” explained Hans Nyfeler. “But this investment has now paid for itself, because so far we have already been able to assemble and deliver four AMP 70s and five HM 75s. We’ve managed this with average throughput times of 12 to 14 months per machine.”

### LOGISTICS PLAY AN IMPORTANT PART

When you look at the assembly areas, you see a lot of individual pallets with components and partially preassembled assemblies which will later be fitted to the machine frame. So it’s really quite clear how that all works. “In actual fact though it’s not quite so simple as it looks,” Mr. Nyfeler explained to me. A large buffer zone is required to provide an intermediate storage area for certain parts. Given the size of the machines and the correspondingly large dimensions of their component parts, arranging storage is always a logistical masterstroke. For this purpose, ANDRITZ HYDRO makes about 1000 m<sup>2</sup> storage space available for Hatebur. “At the moment, the procurement and supply is underway for four large-scale machines of the AMP 70 and HM 75 models. These machines will be going into assembly with a time horizon of two to four years. These are challenges that we have to deal with every day and work together to overcome,” said Mr. Pauli, concluding our very informative conversation.

### FACTS & FIGURES

#### Machines assembled at ANDRITZ HYDRO:

144 Hotmatic AMP 30  
6 Hotmatic AMP 40  
22 Hotmatic AMP 50  
4 Hotmatic AMP 70  
5 Hotmatic HM 75  
8 Coldmatic AKP 5-5  
48 BKA 3  
11 BKA 4  
1 BKA 5  
29 PKE 16



*The pressram of a Hotmatic AMP 70 XL is prepared for side guide plate inspection and then carefully lowered into the machine frame.*

ANDRITZ HYDRO – Large-scale machine assembly

### THE INTERFACES

Stefan Bühler and Walter Sönser are in charge of supervising assembly and manufacturing processes at Hatebur and provide the interface between the two companies for ensuring that procedures run smoothly: “We value the high level of expertise in the assembly team and the direct lines of communication at ANDRITZ HYDRO.”



*Stefan Bühler (left) and Walter Sönser at work.*

## TOOL MANUFACTURE – WE NOW TAKE A LOOK AT THE PRODUCT

 Stephan Dürer

Having published a detailed report in the last issue about tool development including design, this time Netshape focuses on actual tool manufacture. A service which is provided exclusively for all types of Hatebur forming machines.

### Part **2** “TOOL MANUFACTURE”

Tool development using simulations of the forming process (both hot and cold), as well as the simulation of kinematic development within the machine itself form the basis for the subsequent design and final manufacture in a variety of production processes.

In this regard, Hatebur pursues a clear strategy: “We want to provide our customers with everything from one source,” declares Patrick Stemmelin, Processes and Tool Development Manager. “Customer interests are just as multi-layered as the range of services provided by Hatebur. Customers will choose the package of services which is right for them in terms of expertise and capacity,” he explains.

#### A VARIETY OF PRODUCTION PROCESSES

Hatebur is today ideally set up when it comes to tool manufacture. Alongside the established procedures such as turning, milling, eroding, hardening, grinding and polishing, a variety of hard machining processes are also used for the manufacture of high-quality forming tools. In addition to up-to-date and modern machinery, human expertise also plays a decisive role in determining the workmanship of the final product. The 15-man team is very well aware of the high requirements demanded from tools. Extremely accurate manufacturing specifications coupled with a high level of machine part durability are essential.

#### IN-HOUSE HARDENING SHOP

Hatebur is able to influence tool durability thanks to its in-house hardening shop. “Thermal hardening is a big plus,” declares Patrick Stemmelin. “Since we control this process ourselves in-house, we always know exactly how the tool has been processed right through to the end. In an external hardening shop, there may be times when a tool is included with other metal parts in a single hardening batch under circumstances which are far from ideal.”

#### FAST AND FLEXIBLE

If tools need to be adapted at short notice or a customer urgently requires a replace-



*A glimpse into the in-house hardening shop*

ment tool, Patrick Stemmelin and his team are able to provide a fast and flexible response. A new tool is usually available within two days, depending, of course, on the level of complexity involved. “But we’re only able to do that because we have the whole process chain under one roof,” explains Mr. Stemmelin with a smile.





*A tool set consists of shaping as well as holding and changeover parts  
(Picture: tool parts for a hot forming machine).*

***“Customer interests are just as multi-layered as the range of services provided by Hatebur.”***



*Vertical eroding machine for complex tool geometries.*



*The latest 5-axis milling center at Hatebur.*

## Part 3

### FULLY ASSEMBLED

When tool manufacture is complete, all the component parts of the tool set are then checked. The tool is fully assembled at Hatebur and checked in order to make sure that everything fits together. The customer can then set up his machine without experiencing any unpleasant surprises.

### SERIES PRODUCTION

In the course of its future-oriented machinery modernisation program, Hatebur has been able to significantly extend its range of services. More precisely, Hatebur has now become an effective partner for the series production of replacement tools.

### “TOOL TRIALS”

in the next issue of Netshape (2/2009).

# IMTEX 2009 – REWARDING CONTACTS

At the start of 2009, Hatebur was on the road again. The international IMTEX trade fair for metal forming opened its doors for seven days in the Indian town of Bangalore. Together with other companies, Hatebur was represented on the stand of the Indian agency Voltas Ltd. During the week, Hatebur was able to establish various new and rewarding contacts, despite the predominantly subdued economic atmosphere.

Interest was focussed mainly on Hatebur's medium to large-scale cold and hot formers – a trend which has been in evidence in India for some time now.

The handover of the India sales region from Daniel Krieg to Norbert Joehl (see page 3) also featured among the activities at the trade fair.



*Scenes from the exhibition stand at the 2009 IMTEX trade fair in Bangalore.*



## TRADE FAIRS/EVENTS

Come and visit Hatebur at the following trade fairs/events:

**INTERNATIONAL CONFERENCE ON FORMING** in Fellbach, Germany: 12.–13.05.2009

**METALLOOBRABOTKA** in Moscow, Russia: 25.–29.05.2009

**CHINA PRECISE FORGING CONGRESS** in Chongqing, China: 14.–16.06.2009