NETSHAPE

Hatebur magazine for horizontal cold and hot forming – **1/2011**

MIYAKE CO. LTD. IN IGA, JAPAN: a Hotmatic HM 35, alone amidst strangers

CEO'S VOICE

Dear Business Friends,

Fortunately, economic recovery has arrived sooner than anticipated, particularly in the automotive industry.

Since the last quarter of 2010, this upturn has also had a positive effect on the number of contracts for our new machinery. To our delight, these successes have been distributed around North America, Europe and also Asia.

Not least thanks to a solid financial basis and working short hours in several departments, we have been able to overcome the crisis without loss of expertise. We also used this time intensively for making progress in the research and development areas, and for addressing the latest challenge, which is the strong Swiss Franc.

We have also taken on more staff at our center of competence in Shanghai and extended the facilities, so that we can support our Asian customers more quickly and efficiently on site.

At this point I would also like to mention that our subsidiary in Japan was affected by the extremely severe natural disaster. In spite of this, Hatebur Japan was available to our customers without interruptions for the entire duration of the disaster. We appreciate this very much, and would like to thank our Japanese Hatebur team for their extraordinary efforts.

Among other things, this issue devotes itself to the feedback from our first Japanese HM 35 customer, Miyake. This Hotmatic HM 35 is currently forging about 2 million parts per month. When the Combi-ring process is being used, the system even produces as many as 4 million roller bearing rings per month!

We would like to thank you for the confidence that you have shown in us and wish you continued success in the future. Last but not least, we hope you enjoy reading NETSHAPE.

Your

Urs Tschudin

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Ryoji Miyake, President, (left) and Kenzo Matsukawa, plant manager of Miyake Co. Ltd., Japan, during an inspection.

LEGAL INFORMATION
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CHRISTMAS PARTY 2010 – ENJOYABLE END TO THE YEAR WITH A SPORTING AMBIANCE

A festive occasion for all at Hatebur – including previous employees. At the end of December 2010 we met in the sports lounge of FC Basel and enjoyed the special ambiance and the culinary highlights of a multi-course meal.

Culinary delights from the buffet.

Festive atmosphere with view of the FC Basel football arena.

"E"PORTFOLIO – PRODUCT AND SERVICE INFO ON DVD

An interactive DVD is now available about all Hatebur products and services in German, English, Japanese, Chinese and Russian. As well as a brief introduction to the products and their technical data, film sequences and application examples can be played.

From left: A. Panzeri, P. Galbiati, U. Tschudin (CEO Hatebur), P. Valsecchi, I. Barozzi.

GALBIATI – BEST SUPPLIER 2010

Hatebur presented the supplier award for the third time in January. Italian company Galbiati followed previous winners Pichler AG and Arcade Engineering AG and became the "Best Supplier 2010" with 90 points.
It is worth mentioning that Galbiati has achieved a massive increase since the start of this evaluation program. The first evaluation in 2008 resulted in 70 points.

MIYAKE CO. LTD. –
ALONE AMIDST STRANGERS

Jürgen Fürst Miyake Co. Ltd.

Forged roller bearing and automotive part manufacturer Miyake Co. Ltd from Iga is the first Japanese company to introduce Hatebur technology in the land of the rising sun with the use of a Hotmatic HM 35. The Japanese forging company is impressed by the high standard of Swiss technology and by the breathtaking speed with which precision components can be manufactured while maintaining process reliability. In addition to the speed, the Japanese managers highlight the short changeover times during the frequent tool changes. Because they have also been impressed by the simple tooling concept, it is being transferred to their other existing machines. In expressing requirements which are unusual to European ears, Miyake have produced some surprised-looking faces in Reinach.

Headquarters of Miyake Co. Ltd. in Iga/Japan.

The Hatebur Hotmatic HM 35 that is in service all alone in the land of the rising sun must feel lonely. Not only that, it also stands next to eleven hot forming machines made by another manufacturer in the factory of Japanese roller bearing specialist Miyake. But it is by no means boring for the fastest hot forming press in its class, because it has produced 90,000 to 100,000 precision forgings every day without a word of complaint since it was first put into operation in March 2010, and was producing two million components per month before the natural catastrophe in Japan caused a reduction in demand.

IN JULY, BACK AT THE LEVEL BEFORE THE CATASTROPHE

Immediately after the earthquake and the tsunami, the monthly demand fell to slightly above 1.4 million components. But as early as in June, 90 % of the peak quantities were again being called off and by July, those responsible at the works hope to once again reach the figures achieved before the terrible events took place. The HM 35 will then be able to deploy its strengths to the full.

"We are particularly impressed by the high technological standard of the Hatebur machine", stresses Ryoji Miyake. In so saying, the president of the roller bearing manufacturer Miyake Co. Ltd. from Iga confirms that it was the right decision to use a hot former from a European manufacturer for the first time. The company was founded in 1939 in Osaka, manufacturing today around 400 million bearing rings annually in the two factories in Iga and Shiga, and predominantly supplying the automotive and vehicle industry with high-quality roller bearings. Customers like Toyota, BMW, Nissan, Honda and the

Alone amidst strangers: the new Hatebur Hotmatic HM 35.

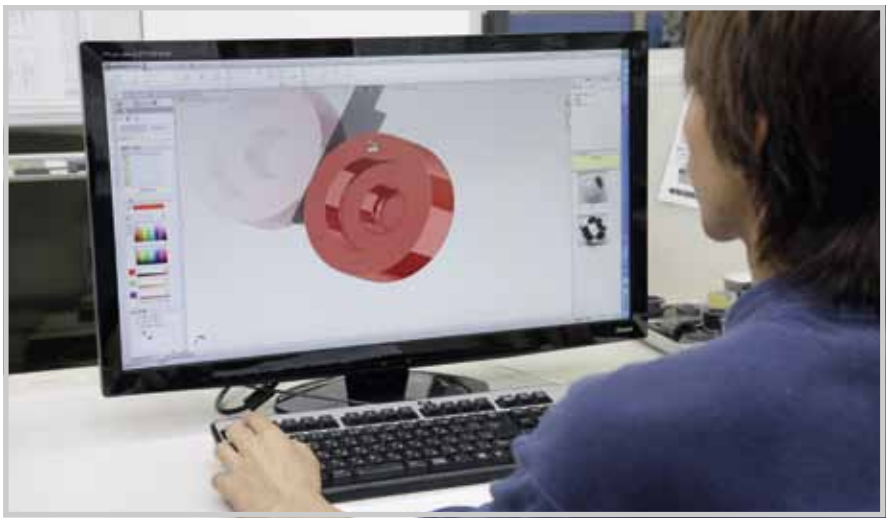
most prominent Japanese motorcycle manufacturers use their components, as do Japanese machine tool manufacturers.
There are no compromises when it comes to the quality of the bearings, which are fitted in gearboxes, for example. The Swiss high-tech machine came just at the right time to replace a machine made by another manufacturer which was getting on in years.

From left: Ryoji Miyake, President; Kazuhito Fukui, Senior Corp. Executive Officer; Kenzo Matsukawa, Factory Manager.

Technical data for the Hotmatic HM 35

Forming stations	4
Total press load	3800 kN
Max. external diameter*	approx. 75 mm
Max. outer diameter for combination blanks*	approx. 68 mm
Bar diameter	18–40 mm
Initial weight	0.06–0.74 kg

* For round steel components, regardless of forming degree, sequence of operation as well as material and temperature.



Preparatory work is carried out at Miyake using state-of-the-art tools.

FEEDER TECHNOLOGY WITH REVERSE GEAR GENERATES ENTHUSIASM

The high-speed forging press particularly scores points because of the high-precision feed-in of the bars, which can be up to 40 mm in diameter, and because of the precise and process-reliable shearing of the material. The reliable cut-off quality immediately produces forgings with consistent volume accuracy and therefore a high level of satisfaction among Miyake's customers. The feature responsible for this consistency is the servo feed-in system which is positioned directly downstream of the induction heating system. Instead of the previously used complex mechanical solution with cam, the servo-driven feed-in system, which was used on a hot former for the first time in 2003, provides a simple and easy-to-operate technology which also operates with extreme accuracy. By means of convenient adjustment from the control desk, the feed-in overstroke is always calculated at the same time. The electronic bar end eliminator system produces, tracks and controls the transition of bars. This makes the bar change safe and economical.

> ***"The tool concept was something new for us, but we can use it to significantly shorten changeover times."***
>
> *Kenzo Matsukawa, Factory Manager*

The Japanese are also enthusiastic about the ingeniously simple design of the shearing tools. Associate Senior Corporate Executive Officer Kazuhito Fukui explains

Now that some initial experience has been gained, the tools are now developed in accordance with the Hatebur concept.

Japanese project management is similar to Hatebur project management – yet completely different in some ways.

how impressed he is with the concept: "We will try to apply this forming tool design concept to all of our machines. Our designers are already transferring the principle." The servo drive also has a gentler effect on the material. After the actual shearing process, the feed rollers engage the reverse gear at lightning speed so that the shearing blade does not come into contact with the heated bar when it travels back. The higher level of volume accuracy and improved cut-off geometry result in consistent die filling. This improves process reliability and repeatability.

SIGNIFICANTLY FEWER PRODUCTION STOPPAGES

As early as soon after commissioning, Miyake is discovering benefits on a daily basis. "We have significantly fewer production stoppages than before since we started manufacturing components on the Hatebur press", affirms Factory Manager Kenzo Matsukawa. Nevertheless, the concept of the tool design was unfamiliar to the Miyake employees, and first had to be thoroughly learnt and assimilated. They had at first tried to develop the tools according to the existing principle, but soon realized that this approach could not be put into practice in a practicable way. Once those responsible had studied the simple concept of the Hatebur tools intensively, they were able to see the benefits immediately. Factory manager Matsukawa again: "The tool concept was something new for us, but once we had engaged with the idea, we were then able to significantly shorten changeover times."

"We are particularly impressed by the high technological standard of the Hatebur machine"

Ryoji Miyake, President

And it is precisely this straightforward tool change that plays an important role. "Although the HM 35 already receives larger batches from Production Planning with batch sizes of 30,000 to 40,000 components, tool changes are frequently required due to the extremely high speed of production", stresses Takeshi Imada, who operates in Japan for Hatebur. When forgings of equal volume are produced at a rate of 180 parts per minute, tool changes are required almost daily. "Of course, the time of between 80 to 90 minutes that is required for a complete changeover increases machine running times and therefore our productivity", adds Matsukawa.

Mechanical clamping technology makes tool changes reliable and saves time. Operators require less force. The tools with die and punch clamp covers and the shearing blade can be pre-assembled outside the machine, so that production time does not suffer as a

Metal-cutting machining.

Forged roller bearing blanks.

Other constituents of Miyake's product portfolio.

Laser-assisted quality control.

result in this case either. The pre-assembled tools are installed with the aid of a tool change gantry and clamped mechanically.

MIYAKE WISHES HATEBUR SUCCESS IN JAPAN

By supplying Miyake customers on time with qualitatively perfect forgings, the aim is to increase their satisfaction even further. Those in charge at Miyake wish Hatebur – not entirely without self-interest – every success in building up their market in Japan. So that they can take advantage of the full Hatebur service quality – and so that the HM 35 is not left on its own in a foreign land.

A great deal of value is placed on regular quality control.

Miyake Co. Ltd.
1626 Sanagu-cho
J – Iga-City, Mie 518-0001
Tel. +81 595 23-5111
www.miyake-net.co.jp

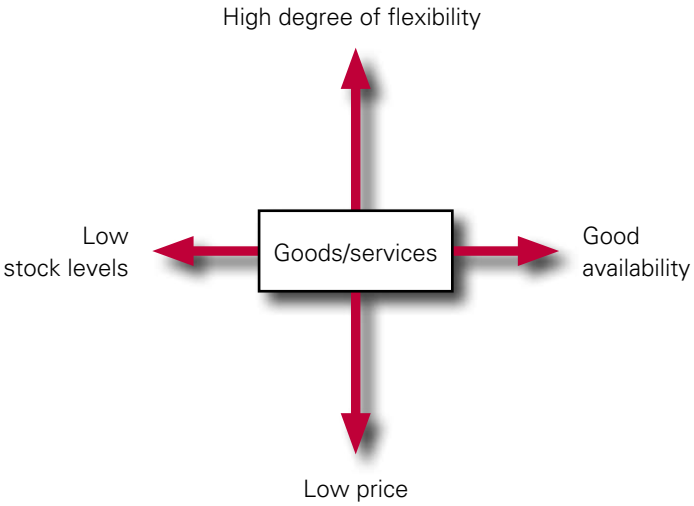
SUPPLY CHAIN MANAGEMENT – AS GOOD AS POSSIBLE, AS STREAMLINED AS NECESSARY

Stephan Dürer

A team that acts, implements and usually operates in the background. These are the employees from Stefan Müller's Supply Chain Management department. Better known as "Purchasing" at Hatebur. NETSHAPE would like to use this article to explain that you need considerably more than employees who purchase goods and services in a modern successful mechanical engineering company.

"Quality is required!" This is how the interview with Stefan Müller (Supply Chain Management divisional manager) started. "Hatebur stands for quality, and this is what we try to live up to in our team", he adds. Everyone in the team carries out an extremely demanding job which includes a rare feature in the mechanical engineering business – Hatebur does not have its own manufacturing facility for hot and cold forming components. The employees do not just have to order components from suppliers, but are also responsible for checking their quality and ensuring that they are available in the assembly plants when they are needed. This even goes so far as involving suppliers in the required quality and playing a supporting role on site. Not without reason. Only the use of perfect components in the machinery generates a high level of customer satisfaction. For many years.

However, Hatebur-internal satisfaction must also be achieved. The keyword is "Risk Management". "We are permanently checking, optimizing and, of course, evaluating the complex parameters involved in procurement. We keep an eye on the raw material markets, scrutinize procurement processes, react to economic changes etc.", says Stefan Müller.



The "exciting environment" of the Supply Chain Management Team.

SPARE PART MANAGEMENT

What applies to the manufacture of new machinery is also beneficial for spare part handling. Spare parts do not only have to be quickly available, but also in original equipment quality. Not to mention at a good price. For this purpose, Hatebur keeps a comprehensive range of spare parts internally and with its suppliers. These are usually blanks or semifinished parts that can be made available on demand at short notice.

If an order is now placed for components, either for assembling a new machine or by After Sales Service, the order quantities are defined in accordance with the objectives of "low price" and "small stockholdings". Some instinctive feeling and a few years' experience at Hatebur is required for this.

And Stefan Müller's team has precisely all of these qualities.
However, it is not just the team's experience that plays a major part in everyday work. Relationships with domestic and international suppliers, many of which have existed for many years, are also important. Any supplier who thinks that he can rest on his laurels is mistaken. The 18 suppliers who have the most sales and are the most important partners from a strategic point of view are evaluated using a practical supplier management system. The best supplier is presented with an award (see also page 3).

EXTREMELY VERSATILE

From the smallest screw to 95 ton machine beds, Stefan Müller's 11-man team misses nothing. Over the course of a year, this represents a considerable proportion of the company's turnover. In order to meet the requirements of such a job in the best possible way, the majority of employees have a technical background as well as business management training. "This is the only way to think your way into the material and be involved in the development of new Hatebur products", stressed Stefan Müller. In this respect, NETSHAPE trusts that you will enjoy your work.

The tolerance of components is tested on random samples on calibrated measuring tables.

The Supply Chain Management team (from left): Antonio Mauro, Vincenzo Cristofano, Mehmet Ali Oezbey, Max Teichmann, Beat Hayer, Rémy Billand, Stefan Müller, Holger Koch, Hannelore Bader, Thorsten Hirsch, Thomas Leuthard, Heidy Baumann.

“007” ON A DIFFICULT MISSION –
THE FIRST ANNEALED CUT-OFF

Stephan Dürer Stephan Dürer, GKN Driveline Trier GmbH

Part 2 **Following the first part of the report “‹007› on a difficult mission”, which dealt with the dismantling and transportation of Hatebur’s biggest hot former at the time (HM 75), the focus is now on introducing and commissioning the Hotmatic. The next steps after transporting the machine when it was introduced at its new location were in accordance with the motto “in calmness lies strength”.**

“007” has arrived! The biggest Hatebur hot former with serial number 007 and model designation Hotmatic HM 75 XL has already been transported 600 km on a heavy load transporter. In south west Germany, Trier to be exact, it is transferred to a multi-axle wagon and pushed into the production bay at GKN Driveline Trier GmbH.

EXACT ALIGNMENT

Now it is a case of installing the machine on the specially prepared foundation. Sounds simple enough, but it is anything but that. Now, firstly the machine is not exactly a lightweight at about 100 tons, and on the other hand, the huge body of the machine has to be set in exactly the right alignment and placed in position. If this is not done properly, undesirable complications could occur during subsequent assembly and commissioning. For this reason, the position in which the HM 75 is placed was measured with pinpoint accuracy beforehand and marked with thin ropes.

INCREASED HEART RATE

The heart rate of all persons involved increases from one minute to the next. Early in the morning, the specialists from the transport company start to construct a rail system on which hydraulic lifting devices will subsequently transport the machine to its final position. Extreme accuracy. The transport professionals prepare for the big moment with quiet efficiency. At 11:55 a.m. the moment arrives. The powerful hydraulic lifting gear raises the machine, making it almost seem like child’s play. Now the HM 75 is suspended about 10 cm above the transport wagon, and is pulled centimeter by centimeter in the direction of its final position. If you look carefully, you can see that the multi-ton machine is still swinging to and fro slightly. It isn’t easy to move this

The machine is moved from the low loader to a multi-axle wagon using complicated hydraulic lifting gear, and then moved into the future production bay.

The machine is pulled into its final position on the precisely aligned rail system.

Extremely concentrated work is needed for the final few meters, in order for the machine to be placed in the correct position. The alignment of the leveling and damping elements by the Hatebur engineers (photos in order starting at top left) is also extremely important.

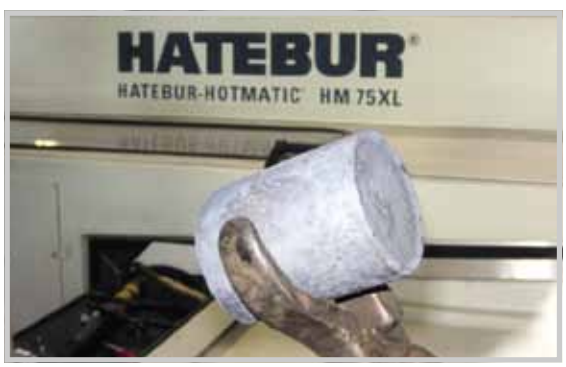
(From top) Centimeter by centimeter, the hydraulic system moves the machine into its end position above the foundation.

(Left) The responsible Hatebur engineers (Rolf Nyfeler and Martin Fugel) direct the machine to the exact final position.

(Right) Like a DJ at the mixing desk ... All hydraulic units are actuated from here.

Just in time for Christmas, mechanical assembly of the HM 75 is complete.

Dr. Helmuth Rohregger (GKN Managing Director North Europe), Sir Kevin Smith (GKN CBE, Chief Executive of Board of Directors), Dr. Roland Seidel (Managing Director of GKN Driveline Trier GmbH) and Urs Tschudin (CEO Hatebur) successfully pressed the start button.



The first cut-off.

colossus exactly over the markings. So the approach is always: wait until the machine stops swinging, check the position and move it again a little if necessary.

"TOUCHDOWN"

At 12:25 p.m. it's done: "Touchdown", the HM 75 is resting on the foundation. Applause breaks out among the watching employees of GKN Driveline Trier GmbH. A great moment in the future service life of the HM 75!

From now on the Hatebur engineers will carry the baton. Part by part, the machine is mechanically and electrically assembled. Units such as the inductive bar heating system, the central lubrication system, the drive etc. are attached, tested and started up one after the other. And similarly to when the machine was placed onto the foundation, the tension gradually mounts.

THE FIRST CUT-OFF

Three months later the moment arrives. Another important milestone is reached. "007" is started up, and brand new bars are already in the bar stock. The operator starts the bar feed. On a section of approximately 19 meters, the new material is heated to 1250 degrees. The water cooling system in the tool area is switched on, and the machine engages with a clunk. Seconds later, the servo-driven feed rolls pull the glowing bar all the way into the shearing station, and the first cut-off in the history of the HM 75 "007" is sheared. Sighs of relief are heard, and beaming smiles spread among the faces of the observers. An important milestone has been reached. The first tools can start to be run in according to plan.

NEW

SHEARING BLADE WITH CARBIDE INSERT –
FOR LONGER TOOL LIFE

Stephan Dürer

Increasing the tool life, quick and easy shearing blade changes and improving shearing quality were clear requirements during the development of a new shearing blade system. Intensive collaboration with Ceratizit, development partner and manufacturer of carbides, started not long ago. The result is now available for all operators of a Hotmatic AMP 20 (S) or AMP 30 (S): A shearing blade with a carbide insert with significantly improved cost-effectiveness.

It was worth the effort. The new shearing blade system, which is now available, meets the vast majority of the development team's requirements. Various field trials at Hatebur customer sites confirmed the results of the tests at the Hatebur demo center in Reinach. The new shearing blade with carbide insert lasts for up to seven times as long as the previous blade. A brilliant result!

SIMPLE HANDLING

As well as the longer service life, the ease of handling when changing the shearing blade has been retained. Whereas the entire blade previously had to be changed, now the machine operator only has to replace the carbide insert with a new one. This is secured using a simple and safe clamping procedure. The shearing blades are manufactured at Ceratizit in Italy.

OTHER MACHINE TYPES

As well as the currently available blade systems for the Hotmatic AMP 20 (S) and AMP 30 (S), blade units for the HM 35, AMP 70 and HM 75 model series will also be available in future. Testing is already in progress. This also applies to fixed blade systems.
Interested parties can contact Hatebur After Sales Service or contact Ceratizit directly.

The new blade system was developed in collaboration with Ceratizit.

SOMETHING WORTH KNOWING – HATEBUR IN SPACE

Jürgen Fürst

How did Hatebur get into space? It's hard to say because, after all, neither our machines nor the parts that are manufactured using our machines play any direct role in space travel. And yet, it has already happened. Admittedly, the story sounds adventurous. But isn't everything an adventure when it comes to space?

The Space Shuttle takes off from Kennedy Space Center in Florida at 14.01 hrs and will be taking the Hatebur ballpoint pen into space. (Photo: Scott Andrews, 11th May 2009)

On 11th May 2009 NASA astronaut Michael T. Good (Colonel USAF, Ret.) set off on a space mission with six other astronauts in the Atlantis Space Shuttle in order to carry out maintenance work on the Hubble space telescope. In his personal luggage for the journey, which covered 14 days and 8.5 million kilometers, Michael Good carried a sterling silver ballpoint pen. The mission was extremely delicate, because it was the final trip of a NASA space shuttle to the Hubble telescope. If you still can't imagine how Hatebur is involved, don't worry – just have a little patience.

Astronaut Mike Good and his sister-in-law Helen Dickinson were honoring the life and work of Dave Dickinson with the ballpoint pen. Dave was the founder of Girard Associates, Inc. and, as a sales partner of Hatebur (a position which he had held since 1965), he sold the first Hatebur hot forming machine in the USA. In addition to the business relationship between Girard and Hatebur, both families enjoyed a very affectionate personal relationship. Until his retirement at the end of May in 1991 there was always a sterling silver ballpoint pen on his desk, which was a gift to him from Hatebur.

And now the story has almost come full circle. Mike Good was presented with the pen by Helen Dickinson, daughter of Dave, who, since his death, has continued his work at Girard Associates, Inc. along with partners Jeff Jones and Bob Bolin. She is also the astronaut's sister-in-law – but that's another story.

The silver ballpoint pen from Hatebur that made the trip into space.

The official photo of the crew of the Atlantis Space Shuttle flight of 11th May 2009.

The Hubble telescope after separation from Atlantis on 19th May 2009. (Photo: NASA, 19th May 2009)

On day 10 of the mission, the earth's atmosphere is recognizable as a thin line behind the robot arm. (Photo: NASA, May 2009)

TRADE FAIRS/EVENTS

ACTIVITIES IN RUSSIA

Metallobrabotka 2011 took place from 14th to 16th June in Russia. Hatebur has also put itself forward as a competent partner for hot and cold forming in this emerging market.

VISIT HATEBUR

■ IN CHINA

MetalForm China 2011
中国国际金属成形展览会
SHANGHAI · 上海

ChinaForge Fair 2011
Shanghai, 23.–28. August 2011

■ IN BRAZIL

31st SENAFOR

Porto Alegre, 5.–7. October 2011

Hatebur Umformmaschinen AG | General Guisan-Strasse 21 | CH-4153 Reinach | Switzerland
Tel. +41 61 716 21 11 | Fax +41 61 716 21 31 | hatebur@hatebur.ch | www.hatebur.com