Our performance. **Your advantage.**

NetShape

01 | **2019**

www.hatebur.com

Personal

Dear business associates,

Globalization and digital transformation are forces that bring the world to our doorstep. However, when I see the state of global politics in the news at the moment and when I consider what our customers are telling me, this does not appear to be having the anticipated effect on day-to-day commercial and business operations, and companies are once again coming up against an increasing number of barriers. Through the work that we carry out day in day out, we strive to inspire you and help you to overcome physical and technical hurdles and barriers to greater productivity, and to turn these into success.

For example, by implementing the "lukewarm process", we can overcome the limitations of cold forming. This process allows us to form alloyed and high-alloyed materials into sophisticated components. The focal point of this issue will offer you an excellent insight into this fascinating subject. A supplementary article details how our machines can be prepared and adapted to accommodate this technology.

In this issue, we present the inspiring case study of one of our customers, Defremm, which illustrates how internal limitations can be overcome through the systematic use of data ranging from tool data to job data. By wholeheartedly embracing the digital modernization of their processes, they have positioned themselves in the vanguard of Industry 4.0. We are delighted that our Carlo Salvi formers are the preferred former in their production facility.

Production systems can reach their limits after decades of use. The reports on the AKP 5-5 and safety issues regarding older machines explain how we can help you to overcome even these limits.

I hope you enjoy reading your latest NetShape.

Kind regards,

Thomas Christoffel

Overview

Legal information

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Latest news

Company news: Hatebur China merger

The merger between Hatebur subsidiaries Hatebur (Shanghai) Technology Co. Ltd. and Hatebur Metalforming Technology (Shanghai) Co., Ltd. was finalized on 1st January 2019. They will now be trading as one under the name Hatebur Metalforming Technology (Shanghai) Co. Ltd.

This move will strengthen the Chinese offshoot while addressing the increasingly challenging sales and service side of things.

Your contacts will remain the same as before:
Reinhard Bührer (General Manager Business Operations), Yu Zhenghua (General Manager Commercial) and Daniel Koehler (Manager Business Operations).

New Hatebur and Carlo Salvi websites launched

Over the past couple of years, Hatebur and Carlo Salvi have shared a website.

After listening to feedback from various quarters, we realized that we needed to tailor our online presence more closely to the needs of our customers. This meant creating two distinct websites.

It is now quicker and easier to find all the information you require regarding each of the brands. Visit either www.hatebur.com (.ch) or www.carlosalvi.com (.it).

Having separate websites enables you to directly access the exact details you are looking for. The two websites also link to one another, allowing you to quickly switch between brands.

Switching to Swiss GAAP FER for accounting and reporting

For the 2019 financial year, Hatebur has switched to Swiss GAAP FER for accounting and reporting purposes.

The Accounting and Reporting Recommendations (Swiss GAAP FER) are Swiss accounting standards that provide a true and fair view of financial position, cash flows and the results of operations.

The Swiss GAAP FER recommendations are well known in Switzerland. They make annual financial statements easier to compare and increase transparency. They constitute a key foundation on which business decisions can be made.

CM 725 ranked fifth among new machines in 2018

In its December issue, the MaschinenMarkt Deutschland product guide listed its top picks for 2018. We are delighted that the Hatebur COLD*matic* CM 725 was rated fifth best forming machine.

For more information on this machine, e-mail us at sales@hatebur.com, or give us a call on +41 (0) 61 716 21 11.
We look forward to hearing from you.

Facts
Warehousing and logistics

700
actively supported machines

12
different machine types

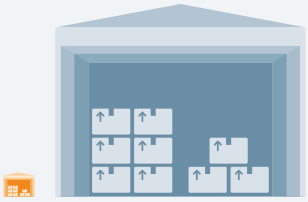
29
different countries

Hatebur warehouses: An overview

Floor space for storing at Reinach Floor space for storing at other sites

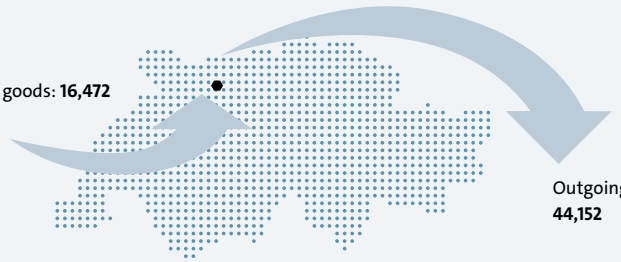
Hatebur has a total of **2400 m² floor space for storing. 2100 m² of this warehousing capacity is at its Reinach site.**

Seven employees are charged with ensuring that **16,582 items** are stored optimally and are available in next to no time. This involves the **relocation of 18,600 parts** annually.

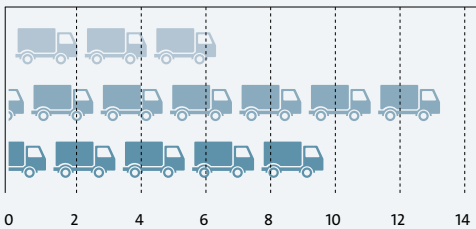


Employees Warehouse: **7** Procurement: **9** Spare parts: **10**

Movement of goods in the warehouse in 2018



Orders submitted in 2018



Orders: **6388**

Ordered items: **13,339**

Different items: **9866**

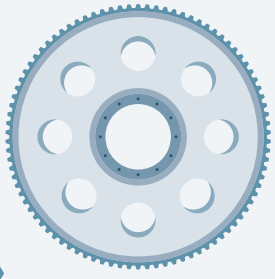
Spare parts: The details

Hatebur keeps around 40,700 individual spare parts in storage so that their long manufacturing times do not result in prolonged production stoppages. Many more items are stored in our warehouse for small parts.

2018:

Spare parts orders	3543
Total items from spare parts orders	12,750
Spare parts deliveries	4699

The largest spare part in the warehouse is the **HOT*matic* AMP 70 crankshaft**. Diameter: 770 mm, length: 3 m, weight: 6.2 tonnes



The **HOT*matic* AMP 70 spur gear** is also very large. Diameter: 2400 mm, width: 500 mm, weight: 4.5 tonnes

Upgrades at Hatebur's Reinach site

Text: **Kim Weber**
Images: **Hatebur, DMG MORI Schweiz AG, GF Machining Solutions International SA**

Reinach **Hatebur invests in two new production machines: New, high-precision machines have replaced the outdated milling and turning centers in the tool production department.**

The DMG MORI CLX 550 lathe replaces an old lathe that was being used in the tool production department. The new machine is being used to produce tool parts up to a diameter of 480 mm for the HOT*matic* series. The new technology, high performance, reduced space requirement, ease of use and new design have impressed the tool production team.

As well as the new lathe, the tool production department has benefited from the acquisition of a new Mikron VCE 1200 PRO milling machine. This replaces two older milling machines. The new system has also been fitted with a dividing apparatus that allows parts to be machined along four axes. The system affords excellent flexibility for small and large machine and tool parts, and joins the existing five-axis machine in the workshop.

The new CLX 550 lathe from DMG MORI Schweiz AG can be used to produce a wide range of different tool parts up to a diameter of 480 mm with the latest technology for the HOT*matic* machines.

The milling machine from GF Machining Solutions International SA affords excellent flexibility and allows parts to be machined along four axes.

A sophisticated control system is used for both machines. A CAM program allows programming to take place in parallel to the process that is currently running. Compatibility with Hatebur's Chinese toolmaking workshop is another benefit of this new control system. This means that the software can be programmed, deployed and used for different tool parts in both Reinach and Shanghai. Because the machines are easier to operate, this reduces the manufacturing time and the tool costs are now significantly lower.

In addition, our own, in-house heat treatment system has been updated with the latest, cutting-edge technology. Hatebur now has the ability to harden tool parts in-house, meaning that the production process, from machining pre-heat treatment to machining post-heat treatment, can be performed in less time in one and the same place.

Want to know more about what Hatebur has to offer? Contact us for further information with no obligation to buy.
hatebur@hatebur.com/T +41 (0) 61 716 21 11.

Your advantage:
The lead time between ordering the tools and shipping them is considerably reduced.

“Lukewarm is the new cold”

Hatebur COLD*matic* CM 725 machine with pre-heating system for forming alloyed and high-alloyed steels

Text: **Jürgen Fürst, SUXES GmbH**
Images: **Hatebur**

Across the world, the demand for cold forming machines with pre-heating systems is growing. What is the reason for this? We investigated to find out why.

For ages, the categories with regard to forming steel have been very clear cut: There is cold forming, warm forming and hot forming or forging. The method used depends on the steel quality and grade, deformability, and component quality requirements. Now, the lines between these previously fixed categories seem to be blurring. By combining cold forming machines with a heating system located upstream, a massive forming process is being developed for steel, whereby the material is pre-heated to a temperature below the temperature necessary for warm forming. There are a number of different reasons for this.

The categories for the massive forming of steel are in fact very straightforward: If the steel is heated to a temperature above the recrystallization temperature prior to the forming process (generally above 1200 °C), this is classic hot forming. Depending on the steel grade, the recrystallization point is approximately 40% (normal steels) or 60% (alloyed steels) of the melting point. If the material is heated to between approximately 710 °C and 950 °C, this is warm forming. And if the material is formed at room temperature, this is referred to as cold forming. During the cold forming process, the material heats up solely as a result of the process itself.

“Lukewarm forming” becomes the fourth forming method

The existing, long-established methods now have a new addition. As of recently, parts that were previously produced by cold forming have begun to be produced by pre-heating the steel. To do this, parts manufacturers are combining traditional cold forming machines with an inductive heating system located upstream of them. “We have noticed recently that almost half the coldformers that are ordered, for example the COLD*matic* CM 725, are ordered along with an inductive heating system, which is used to pre-heat the material prior to the first forming station,” reports Christian Bürgin, Head of the New Machines business unit at Hatebur AG. “This often turns out to be associated with a customer’s decision to process alloyed and high-alloyed steels instead of the material they are currently processing,” adds Patrick Stemmelin, Head of the Processes business unit at the Swiss forming machine manufacturer.

> Recently, almost half the coldformers that have been ordered have been ordered along with a heating system.

Professor Mathias Liewald from the University of Stuttgart has coined a new term for this method: “We like to refer to this method of working as lukewarm forming. Before it is formed, the material is heated to between 400 and 450 °C, which keeps it below the point at which it would exhibit blue brittleness.” Rather than increased deformability, the experienced forming and production expert from the Institute for Metal Forming Technology considers the main benefits of this technology to include reduced flow stress, resulting in decreased tool stress and extended tool life. This results in the press loads in the pre-heated material being up to 25 percent lower, which is kinder to both machines and tools, especially when working with alloyed steels.

Parts are becoming smaller, lighter and more complex

Professor Liewald is conscious of the fact that there are a number of new requirements that must be satisfied, however: “Firstly, particularly for the kind of lightweight con-

struction required by automotive manufacturing, many parts are becoming ever smaller, yet they still need to exhibit relatively high performance and functionality." Pre-heating the alloyed starting material reduces the risk of cracking, which is especially beneficial when producing components with thinner walls. This also allows greater precision to be attained during the forming process, which becomes all the more important the smaller the part.

"Secondly, electric vehicles place tougher demands on parts and materials," says Liewald, highlighting another significant aspect. For example, parts in the vicinity of wheel hub motor or steering gears are subjected to extreme loads, with torques of up to 1000 Nm. Suddenly, even simple bolts become challenging components with complex geometries. With these new developments, we are also witnessing a shift toward alloyed-and high-alloyed steels with the new forming method.

Trend toward higher-grade steel for reasons including performance

Philipp Bleich, who is in charge of Sales and Development at automotive supplier Willi Hahn GmbH and is also a member of the board of management there, has also observed a trend toward higher-grade steel. "These days, many parts destined for the automotive sector have to be more robust and offer higher performance, including from an aesthetic point of view. For instance, components such as union nuts on fuel lines in the engine compartments of luxury sedans such as the Mercedes S-Class, the BMW 7 Series and the Audi A8 must not exhibit any signs of corrosion, even after many years. Requirements such as this then tend to trickle down to the series and models below after a certain amount of time."

Bleich goes on to list another point in favor of forming preceded by pre-heating, and it has nothing to do with changing materials; what it actually involves is a change of production processes for certain components in response to growing demands. "Because, for example, in the area surrounding the fuel injection system, increasingly high pressures are being encountered, alloyed steels with thicker walls are needed. Suddenly, massive forming becomes more cost-effective for some components than the long-established deep-drawing method." Components that previously needed to undergo a laborious machining process can now be formed, which means that none of the material is wasted. For batches of around 100,000 parts or more, switching to the new production method could really pay dividends.

Parts that pack an added punch

Bleich also points to a definite progression of individual parts toward greater complexity and enhanced functionality. Lightweight construction is another focal point for him. "The shift toward high-alloyed steels involves a number of different aspects." In addition to the demand for increased functionality, the parts also need to be smaller and lighter. Thinner walls and more complex geometries, according to him, are an inevitable result of this. We will also see a further increase in the use of alloyed and high-alloyed steels, he says. This is often associated with a reduction in the initial weight, which benefits lightweight construction and can save material. Willi Hahn GmbH is tackling this challenge head on, having already established the strategic goal of offering its customers parts that benefit from higher added value. This concerns not only the automotive sector, but also

Alloyed and high-alloyed steels are increasingly replacing other materials as customers' starting material of choice.

Reasons for adopting the lukewarm forming process:

- Tougher demands on components
- Tougher demands also stemming from electric vehicles
- General performance improvements
- Reduced tool stress
- Extended tool life
- Change of input material
- Demands due to increased use of lightweight construction
- Change of production method from machining or deep drawing to massive forming

extends to the hydraulic systems and fittings sector, which has been upgrading from brass to alloyed and high-alloyed steels.

Jens Ostrowski is yet another expert who considers the transition from cold-formed parts with simple geometries to more complex components to be rooted in the demands of lightweight construction. “This is generally associated with a change of material to high-alloyed steels,” says the Head of Process Media R & D at Carl Bechem GmbH, a manufacturer of special lubricants and metalworking media for a wide range of industrial applications. As a participant in the “Lightweight forging” initiative, the qualified chemist knows what he is talking about. “Further reducing the weight of vehicles is one of the key challenges for the automotive industry because less weight means lower CO_2 emissions and better material and resource efficiency.”

Cutting-edge steel materials are essential for lightweight construction

Thanks to their lightweight properties, modern steel materials continue to play a key role in lightweight construction. The “Lightweight forging” initiative is an international consortium of companies from the steel industry and the massive forming industry, numbering 39 members at the last count. Since 2013, it has been working on identifying untapped potential for lightweight construction in the form of massive-formed steel components for drives and running gear.

Many parts destined for the automotive sector have to be more robust and offer higher performance, including from an aesthetic point of view.

Potential for lightweight construction is also something that researcher Professor Liewald has been investigating as part of his work delving into the very latest scientific expertise and possible opportunities for producing hollow shafts from steel. In March 2019, Professor Liewald delivered a presentation on this cutting-edge scientific expertise at the 34th annual meeting of companies from the cold-massive forming industry.

At the same conference, Alexander Busse, Senior Consultant for Strategy and Consultation at fka GmbH in Aachen, reported on the results of a study that demonstrated that plenty of parts and components are still being produced using massive forming, including parts for electric vehicle drives.

Prof. Mathias Liewald,
University of Stuttgart,
Institute for Metal Forming
Technology

“We refer to the method of working as lukewarm forming when the material is heated to between 400 and 450 °C before it is formed. This results in the press loads being up to 25 percent lower, which is kinder to both machines and tools.”

Qualified engineer
Dipl. Ing. (TH) Philipp Bleich,
Sales and Development,
member of the board of
management at Willi Hahn GmbH

“These days, many parts destined for the automotive sector have to be more robust and offer higher performance. "Where higher pressures are being encountered in the area surrounding the fuel injection system, alloyed steels with thicker walls are needed. Sometimes, massive forming then becomes more cost-effective than the long-established deep-drawing method.”

“Lightweight forging” initiative

The “Lightweight forging” initiative is an international consortium of companies from the steel industry and the massive forming industry, numbering 39 members at the last count. Since 2013, it has been working on identifying untapped potential for lightweight construction in the form of massive-formed steel components for drives and running gear. It has developed almost 1000 lightweight proposals for the running gear, drivetrain, gears und electronic parts of hybrid passenger cars and for drivetrains in trucks. These ideas concern lightweight materials, design and production.

http://www.massiverleichtbau.de/en/startseite/

⇨ Hatebur is one of the companies involved in the “Lightweight forging” initiative

Many reasons for widespread adoption of the method

All in all, we can conclude that there are a multitude of factors that explain the increasing popularity of cold forming with a pre-heating stage. Besides tougher demands on components, including demands stemming from electric vehicles and general performance improvements, reasons for adopting the new production method include reduced stresses on tools and the resultant increase in tool life, a change of forming material, demands due to the increased use of lightweight construction, and a change of production method from machining or deep drawing to massive forming. The fact that the name “lukewarm forming” is already becoming established in its own right for this new variant of the cold-massive forming process just goes to show that this method has already earned its place as the fourth massive forming process.

Plenty of parts and components are still being produced using massive forming, including parts for electric vehicle drives.

Only time will tell whether its success will span decades, centuries, or even millennia, as we have witnessed with forging. We certainly hope it will stand the test of time.

Qualified chemist Dipl.-Chem. Jens Ostrowski, Head of Process Media R & D at Carl Bechem GmbH, a manufacturer of special lubricants and metalworking media

“Further reducing the weight of vehicles is one of the key challenges for the automotive industry because less weight means lower CO_2 emissions. This is generally associated with a change of material to high-alloyed steels.”

General overhaul of an AKP 5-5, Hatebur's largest coldformer

Text: **Matthias Prischl**
Images: **Hatebur**

Company: **Parker Hannifin Manufacturing Germany GmbH & Co. KG**
Site: **Schloss Holte-Stukenbrock, Germany**
Machines: 1 x AKP 3-5, 1 x AKP 5-5, 1 x AMP 30, 3 x AKP 4-5

Parker Hannifin is the world's leading manufacturer of drive and control system technology. The company is active in 50 countries and employs around 57,000 people across the globe. Parker Hannifin had a turnover of USD 14.3 billion in the 2018 financial year. Its headquarters are located in Cleveland, Ohio, in the USA.

Schloss Holte-Stukenbrock **Even after 37 years in production, the AKP 5-5 is still one of Parker Hannifin's most prized machines. After its many years of service, it therefore made sense to give this machine a general overhaul to ensure that it remains fully functional and available for production.**

Parker Hannifin is a Fortune 250 company and world leader in drive and control system technology. With its solutions for mobile and industrial applications and the aerospace industry, it has been playing an important part in its customers' success for 100 years now.

Careful, long-term project planning as the foundation for Hatebur's general overhaul project

Long before the overhaul was started, all the necessary work and repairs, along with the procedures this would entail, had already been discussed by a project team that was led by Parker Hannifin and worked in close collaboration with Hatebur. These discussions focussed on setting out the expected results of the project. A specialist from Hatebur conducted a detailed inspection beforehand to assess this complete overhaul.

In view of the work to be performed and considering the tight schedule (3 months), the whole project was under immense pressure from the start and only stood a chance of being successful if it was optimally organized both prior to commencement of the work and once work was under way.

It was the trust that had been built between Parker Hannifin and Hatebur over the course of their long-standing relationship that was ultimately key to Hatebur meeting these expectations. This confidence in Hatebur's abilities saw it taking charge of the site, with three experienced specialists working in two shifts.

Overhaul work: A joint endeavor between Parker Hannifin and Hatebur
A complete overhaul of this magnitude can only be successful if all the employees involved trust each other and work together as a team in an organized fashion. And this was exactly the kind of teamwork we saw, allowing both sides to work toward the agreed goal in two shifts.

Whether overhauling the gripper and lateral conveyor section or the entire infeed section, to mention but a couple of aspects of the work, all employees co-operated with one another and complemented each other perfectly. The team was also temporarily assisted by two employees from Lumag AG, who performed the scraping work in the driveshaft area, scraped the pressram into the machine body and scraped the pressram itself, carrying out this work to their usual high standards.

Mobile machining: An integral component
Hatebur-Lumag AG was called in to rework the die-side contact surface. Two experienced employees carried out this work on schedule and, as usual, to a high standard.

Right on target
By tracking the project's progress daily and being able to make short-term decisions as a result, all the work remained transparent for everyone involved throughout the entire duration of the overhaul work. This was another important factor that enabled the complete overhaul of the AKP 5-5 to be completed successfully and on time.

Thanks to the excellent collaboration between Parker Hannifin employees and Hatebur engineers and help from the Hatebur-Lumag AG specialists, the project was completed right on target.

The interior of the AKP 5-5 was also carefully inspected for weak points and, where necessary, overhauled.

Defremm Italy with Industry 4.0 since 2014

Text: **Johannes Eckert**
Illustrations: **Matthias Aebi, Hatebur**

Company: **Defremm S.p.A.**
Location: **Lecco, Italy**
Employee: **54**
Machines: **Carlo Salvi CS 663, CS 667, CS 668**

Defremm S.p.A. specializes in cold forgings for small parts, e.g. threaded tubular rivets. In addition, they produce parts according to the technical specifications and drawings of customers. The company was founded in 1980 and is located in Lecco, Italy. It has 54 employees and a turnover of around 10 million Euros.

DEFREMM

Reinach **The company Defremm S.p.A. in Italy is a long-term customer and partner of Carlo Salvi S.p.A. Several machines are operated in Lecco, Italy to produce cold forming parts from the Italian supplier located just a few kilometers from Lecco.**

History
Founded in 1980, Defremm S.p.A. has its roots in the company Minuterie Metalliche which was founded by G. Molinari in 1962. Initially, the company focused on manufacturing blind rivets, after the father of Mauro Molinari had bought a first double strocke header from Carlo Salvi. Later, Defremm began to specialize in cold forming of small parts according to technical specifications and drawings of customers as well as producing threaded tubular rivets.

At the same time, Molinari acquired several new multi-stage machines to start production of special parts. In 1994, the company expanded the production of special parts and also procured multi-station cold forging machinery in different brands. Four years later was another big year: New five-station and six-station machines made it possible to produce the first rivet nuts as well as new complex parts across a range of different materials. 2003 was another big milestone with the purchase of new multi-stage cold forming machinery from Sacma and Carlo Salvi for the purpose of renovating machines and standardizing the production range.

The production range of stainless steel parts without pre-heating technology on the machine started in 2014. The company currently managed by Mauro, Rosa, Andrea and Paolo Molinari has been reorganized to make better use of the skills and talents of their outstanding personnel. The same period saw the first steps towards Industry 4.0 being taken with a view to optimize coordination of all processes within the factory.

Quality control
Defremm has always been keen on compliance with international quality standards and has therefore been awarded achieved several certificates, including
_ 1994 ISO 9001
_ 1998 QS9000
_ 2003 ISO TS 16949
_ 2016 IATF 16949
_ 2018 IATF 16949 re-certification in order to maintain the high levels in production and

service that customers in the automotive industry have come to expect from suppliers.

Customers in 22 countries
Production is taking place in Lecco, Italy, where Defremm has two plants, one for production and one for logistics. The main sectors for which they manufacture are automotive, fasteners, domestic appliances, fittings for plumbing, windows and doors and mechanical construction (most important: popular automotive brands and construction industry). About 60 % of production is being exported. The customers are located in 22 countries (e.g. Italy, Germany, France, Czech Republic, Hungary, Slovenia, Spain, etc.) In 2018, Defremm managed to make a turnover of EUR 10 million with 54 employees in total (approx. 40 people in production).

Up to 200 million parts per series
Defremm manufactures small metal parts for a range of highly specialized applications. These include fasteners for brakes, locks, doors, roof systems and engines in the automotive industry. Another production range comprise parts for household appliances as well fittings for plumbing, window and door frames, sports equipment and general mechanical applications. The company also produces standard fasteners including rivet nuts and blind rivets.

Materials used are carbon steel, aluminium alloy, copper, brass and stainless steel wire and has a thickness of 5 to 90 mm. The production series runs from 150,000 up to 200,000,000. The quantity depends on shapes and dimensions of parts and on which cold forming machine production is running. Several process come into operation after the forming process. These are important to meet increasingly complex customer requirements. Defremm is continually investing in advanced machinery for recovery, threading, punching, turning, assembly and optical control selection. Some parts are ready for use after forming, but most need additional operations.

Carlo Salvi machines in use since 1970s
At present, the Carlo Salvi machines CS 663, CS 667 and CS 668 are in use. In total, Defremm has 15 forming machines in use, nine from Carlo Salvi, the rest from other suppliers. Defremm decided to buy Carlo Salvi machines because of the technology – they are of good quality, approved and the Company is located only 5km from Lecco which makes distance short for discussions and any kind of assistance, an advantage in daily life. The most appreciated part of the Carlo Salvi machine is the technology of the Knuckle Joint Drive in the cold forging machine. Another important advantage is the stable production and the increased tool life.

Industry 4.0
In 2015, Defremm started sourcing a concrete partnership with manufacturers of hardware and software to provide tangible support for its ongoing organisation and growth. All the details have now been defined and 1 January 2016 is the date set for start-up of a project that will see Defremm become fully digitalised over the next few years. One of these partners is FASTDEV Srl, a company specialising in IT solutions for the fastener sector, which has supplied not only the company's ERP system but also its EASYPROD 4.0 MES system module for governance of primary sectors such as production and quality. This has permitted automation and monitoring of the various stages in the production processes, both external and internal. The use of interactive dashboards means not only constant control of the entire production cycle and quality checks, but also signals of any critical alerts, enabling real-time intervention.

In collaboration with Platinum Autodesk partner NKE, supplier of the company's CAD and PLM systems, FASTDEV has used ERP automation to integrate all the document coding and management processes. This means that the finished product, equipment, raw materials and everything linked to production of any particular formed article can now be managed with the technical specs. Yet another step forward has been made possible thanks to the electronic components fitted to Schwer + Kopka Gmbh machines.

Thanks to development of the latest generation of SK 800, a high-end system based on PC/Windows, capable of total governance of the production process and to the technical competence provided by this German company, supported by the Italian DFV team, the FASTDEV F-TERM module has been integrated into the company's equipment. This digitalises the entire production and document process relating to both articles and machines, as well as relative maintenance procedures.

Grandfather rights for older machines? Consequences of EC Directive 2009/104/EC

Text: **Matthias Prischl**
Images: **Hatebur**

Risk assessments can help you to establish whether your employees are safe in the vicinity of older machines without the CE marking. The operating company is obliged to conduct these investigations. Should you require any assistance, our staff here at Hatebur are happy to help.

Reinach **Do older machines have grandfather rights with regard to safety matters? And what are the consequences of EC Directive 2009/104/EC of the European Parliament and of the Council of 16 September 2009 concerning the minimum safety and health requirements for the use of work equipment by workers at work?**

Using requirements that apply within the EU as an example (and specifically in Germany), we will illustrate a few points so that you will know how to proceed correctly if required.

The EC Machinery Directive lays down a standardized set of construction and equipment requirements in the form of protection objectives for the safe design of machines that are put into service for the first time. Additionally, there are further regulations that set out safety requirements for machines, e.g. in Germany in particular the Workplace Safety Ordinance (BetrSichV). In BetrSichV, unlike in the Machinery Directive, the safety requirements generally do not relate to a specific manufacturing or product launch date. The requirements set out in BetrSichV thus apply to all equipment that is in operation, which therefore includes machines.

Specifically, this means that, despite the trend toward “Industry 4.0”, older machines that do not have the CE marking and therefore have a different safety level to current machines may still be encountered in the future.

If you still have systems in operation in your factory that do not bear the CE marking, you should be aware of your obligations as the operating company to conduct a risk assessment in order to establish whether continuing to operate these machines is compatible with employee safety. In other words, these machines do not enjoy grandfather rights. Any such assessment should always be conducted systematically.

If you are unsure, below is a brief guide that you can use to make an initial assessment of your Hatebur forming machines that are affected:

1. Possible hazards/risks that must be checked (extract)
- Mechanical hazards (e.g. due to exposed machine parts)
- Electrical hazards
- Noise
- Fire and explosion hazards
- Release of gases, vapors and harmful substances
- Wear to safety-related components
- Defective or missing safety equipment
- Safety equipment that has been tampered with

- Lack of knowledge by employees regarding a machine's safety level

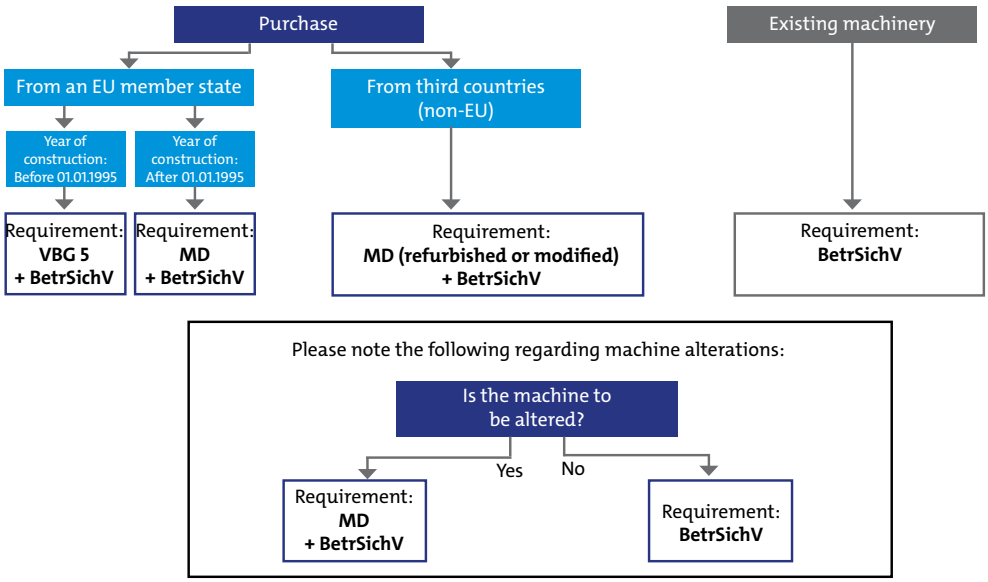
2. What might happen? (extract)
- Hazards and injury to operators of varying levels of severity due to elevated risks and low safety level
- Work-related illness
- Compensation claims against the operating company
- Machines deemed unsafe stopped by the health and safety authorities/employers' liability insurance associations ⇨ Production stoppage

3. What must you do? (extract)
- Find out when the machine first came onto the market (year of construction, prior to 1994).
- Check whether the construction and equipment requirements set out in any regulations in force when the machine was manufactured have been complied with (e.g. accident prevention regulation, standard).
- The old machine must undergo a risk assessment (point 1).
- If the risk assessment establishes that operating the machine entails unacceptable risks, the machine must be upgraded or refurbished so as to eliminate these risks.
- Make sure that upgrading or refurbishing an old machine does not result in a new situation in the sense of a "substantial alteration" (new hazards), otherwise the old machine will have to be treated like a new one.
- Please note that a general overhaul of an old machine does not necessitate the CE marking or a declaration of conformity.
- Old and new machines without the CE marking must not be brought into the European Economic Area (EEA).

Safety updates can be incredibly complex and laborious. As with the risk assessment that is to be conducted, extensive experience and expertise are required. Machine and system operating companies should not be deterred by this – you should not risk either your employees' safety or the liability of their direct superior. We want to provide you with the proper support so that you can overcome the first hurdle and achieve the transparency required with regard to safety matters concerning your Hatebur systems.

Contact us now!

Sources:
1) VBG special no. 40, "Anforderungen an die Sicherheitstechnik: Alt- und Gebrauchtmaschinen weiter betreiben" [Safety requirements: Continuing to run old and second-hand machines]
2) BGHM-Aktuell, issue 3/2016



Abbreviations: MD – Machinery Directive; VBG 5 – German Accident Prevention Regulations: "Kraftbetriebene Arbeitsmittel" [Power-operated equipment]; BetrSichV – German Workplace Safety Ordinance

Simplified flow diagram showing the legal bases for the safety requirements
Source: VBG special no. 40, "Anforderungen an die Sicherheitstechnik: Alt- und Gebrauchtmaschinen weiter betreiben" [Safety requirements: Continuing to run old and second-hand machines]

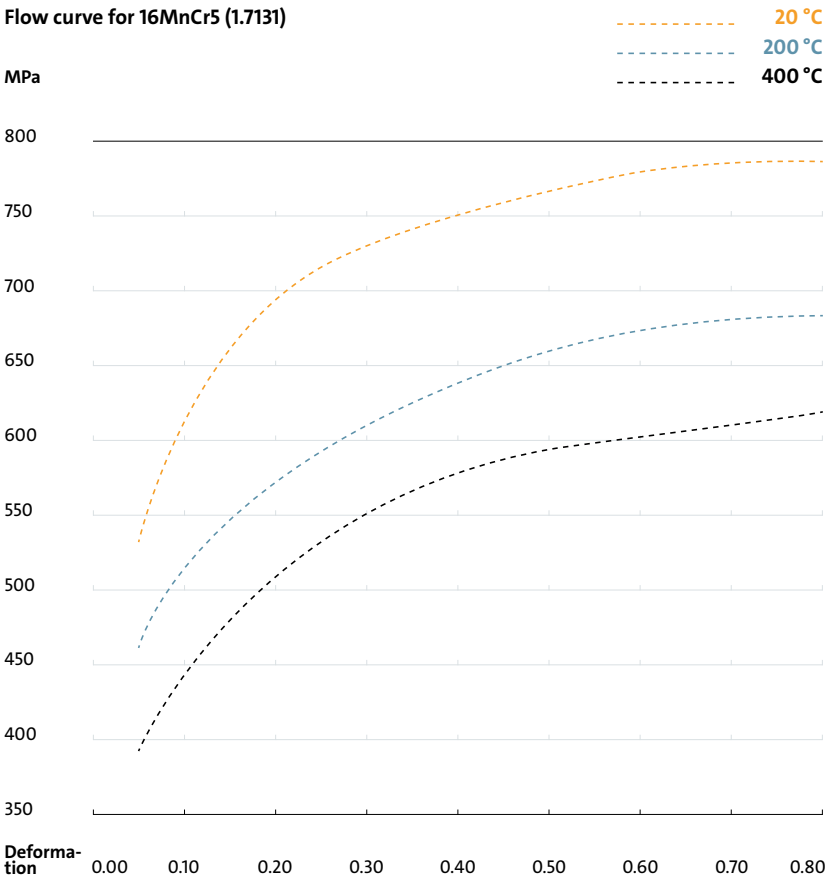
Heating systems added to the portfolio

Text: **Carsten Sieber**
Images: **Hatebur**

Reinach **The new COLD*matic* WS (Warm Series) has pushed the boundaries of forming – now, new parts with higher-strength materials or greater deformability can be produced. With this new system, the former has a pre-heating induction system installed, which heats the wire to the required temperature just before it is cut off. This allows the user to expand their product range.**

Advantages of heating

More than half the machines supplied by Hatebur over the last three years have been equipped with a heating system. Heating the raw material by induction prevents cracking when it is formed and reduces tool stress. It also increases deformability and improves mold filling. This is why, these days, the use of heating systems is no longer limited to materials that are difficult to deform, and can now also be witnessed in the working of common forming materials. Gently heating the material shifts its technological limit, allowing for greater deformability. If you choose a suitable temperature so that the phosphate layer does not burn, the resultant reduction in stress can extend tool life.



Your advantage.

- Users can expand their product range
- Greater deformability can be achieved
- Reduced tool pressures and improved filling
- Wire temperatures of up to 500 °C possible.

The entire Hatebur COLD*matic* series allows special forming oils to be used for challenging applications. The machine's lubrication circuit is separate from the tool's cutting fluid for the forming process so that forming oils with a high additive content can be used. These enable incredibly tricky extrusion operations that would not be possible with a standard oil.

In addition to the known possibilities offered by the kinematics and the separate cutting fluid circuit, the heating system affords new possibilities that the Hatebur COLD*matics* capitalize on, opening up new product areas that have thus far remained out of reach.

How it is configured and how it works

In principle, all electrically conductive substances can be heated by induction. The advantage of inductive heating is that temperature control is relatively easy and reproducible. Additionally, the heat is generated in the workpiece itself and is not transferred in from outside by means of conduction, convection or radiation. Induction technology has an established track record in other industrial applications going back several decades, and considerably enhances the existing possibilities offered by Hatebur COLD*matics* systems.

To prevent heat loss, the material is heated as late as possible in the process chain. For this reason, the induction coil is installed directly in the former body, upstream of the shearing plane. Because the inductive heating system heats the material just a few hundredths of a millimeter below the outer surface of the wire and the thermal conduction then equalizes the temperature between the core and the outer surface, the final millimeters downstream of the coil up to the shear are used for the purpose of thermal equalization. This ensures that the temperature of the cut blank is as homogeneous as possible. The pyrometer measures the temperature of the wire directly downstream of the coil outlet and displays this on the control panel. This allows the operating personnel to adjust the temperature as required.

In order to minimize losses, the coil body should ideally be matched to the wire that is being processed. Losses must be dissipated via a cooling loop in the coil using a separate recooling system. They are strongly affected by the type of material being processed and the air gap between the wire and the coil. As an alternative to the recooling system, a cooling loop can be connected at the factory in order to carry the heated water out of the cooling circuit.

Name: **Carsten Sieber**
Position: **Project and Product Manager**
Working at Hatebur: **Since 2008**

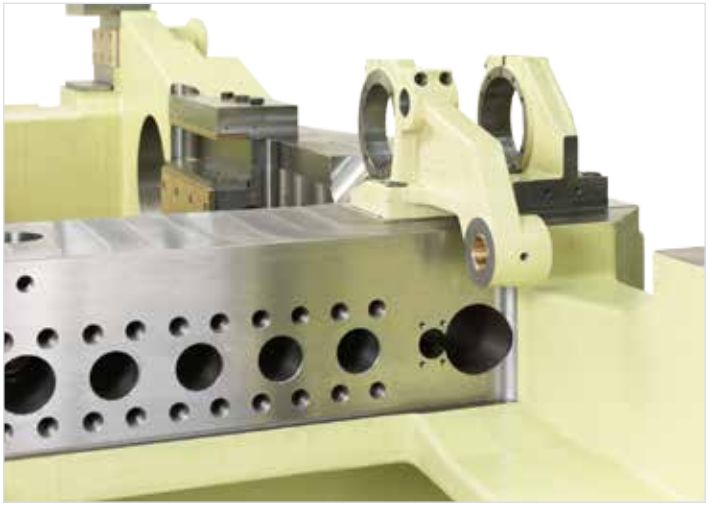
Influence on the surroundings

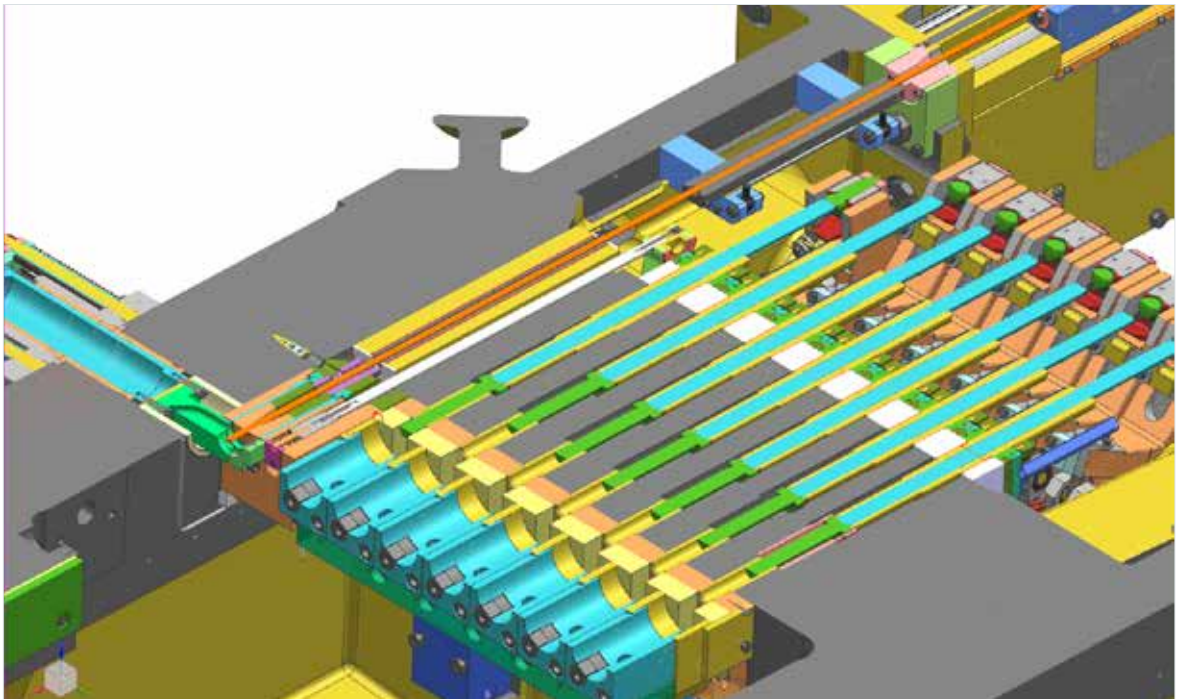
Extraction system
Due to the additional heating of the wire, the blank is at an elevated temperature right from the beginning. This is often above the flash point of the forming oil that is being used, which means that, at least in theory, the oil can spontaneously ignite on contact with the formed part. In practice, these temperatures are exceeded even if the preheating stage is omitted from the forming process and yet fires do not normally occur. The fact that fires do not break out is down to a flush-cooling system. Spray lubrication systems that spray minute particles onto the part can prove to be much more awkward. Regardless of the type of lubrication, the right ratio of oil and oxygen can result in a fire. To avert this danger, the machine must be equipped with an extraction system that immediately extracts the oil vapor generated during forming, thus preventing the formation of a dangerous gas mixture.

Fire-extinguishing system and noise abatement cabin
In case, despite all precautionary measures, a fire still breaks out, every Hatebur COLD*matic* with a heating system is equipped with a fire-extinguishing system as standard. This continuously monitors the temperature at the critical locations during operation and, if necessary, activates the CO_2 fire extinguisher. The extraction system is turned off and the air shut-off valve is closed to prevent any further air from escaping. This ensures that the gas intended for extinguishing the fire is not sucked out of the former's tool area. If the operating personnel discover a fire in the tool area but the automatic activation system has not yet detected it, the fire-extinguishing system can be activated manually from the control panel.

Whenever it detects a fire, the fire-extinguishing system issues a visual and an audible signal and stops the machine. The noise abatement cabin is flooded with CO_2 in order to rapidly extinguish the fire inside. The doors are kept locked as this takes place to prevent anyone from opening them.

A tailored safety concept is essential when operating heating systems. Hatebur offers a certified solution from a single source, enabling users to expand their product range.





Interview

Name: **Brigitte Utinger Balmer**
Position: **Employee Spare Parts Sales**
Working at Hatebur: **Since 1984**

Reinach **Brigitte, you celebrated 35 years of service at Hatebur in February. How did you first hear about Hatebur?**
At the time, my brother worked in Quality Control and told me about a position that was being advertised internally in what was then the After Sales Service.

You work for the Spare Parts Service. This puts you in daily contact with our customers and suppliers. What training and experience is necessary for this job?
Commercial training is important, and experience in freight forwarding is certainly an advantage. Besides languages such as German, English and French, technical knowledge is also really useful. For more complex technical matters, I can always consult my expert colleagues.

What tasks form part of your day-to-day work?
I respond to inquiries regarding spare parts, initiate orders and keep an eye on dates and deadlines. In connection with this, I deal with the correspondence from beginning to end, from the inquiry to the shipping, including any returns and credit notes.

What details do you need from people internally and externally in order to help Hatebur's customers and our branch offices?
Clearly stated requirements from the customer make our job much easier. Other than that, good communication both internally and externally, via e-mail and by telephone, is important.

What do you enjoy most about your work?
The independence, the right to have my voice heard, and the daily contact with customers. Positive feedback from satisfied customers is always an incentive to keep up the good work. And thanks to my colleagues, I start virtually every day feeling highly motivated.

Are you also interested in technology and machinery in your spare time, or do you have other hobbies?
No, not really, apart from the sewing machine ... Social issues take up more of my time. For a few years, I was a member of the social welfare agency and helped socially disadvantaged people.

Do you travel abroad during your vacation and visit the countries where the customers you support are based?
Yes, although not as often as I used to. Particular highlights for me were visits to our branch office in England and to our subsidiary in Japan. When five Japanese colleagues visited Reinach, I placed my apartment at their disposal. It was a fantastic experience.

Trade fairs and events

19. – 20.01.2019

Asia Forge Meeting (AFM), India

Location: **Mahabalipuram, India**
Company: **Hatebur Umformmaschinen AG**
Trade fair highlight: **AMP 20 N**

The seventh Asia Forge Meeting was held between 18th and 21st January 2019 in Chennai, India.

Hatebur had its own booth at the show, which we shared with our Indian representative, Chrystec Machine Tools Pvt. Ltd.

Over the course of the event, the many visitors were able to learn all about Hatebur's COLD*matic* and HOT*matic* machines.

The Carlo Salvi machines also featured in the discussion. It was an excellent opportunity to inform customers and other interested parties about Hatebur's other services and to touch base with existing contacts to reinforce those relationships.

19. – 21.03.2019

Fastener Fair Stuttgart

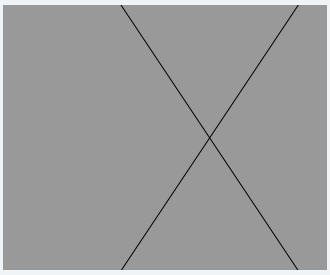
Location: **Stuttgart, Germany**
Company: **Carlo Salvi S.p.A.**
Trade fair highlight: **CS 668**

The eighth Fastener Fair Stuttgart, international exhibition for the fastener and fixing industry, ended on 20th March 2019 following three successful days for Carlo Salvi.

The Italian company was represented by a 64 m^2 booth and a delegation of qualified, experienced employees. The booth attracted many visitors and specialist engineers interested in new projects.

14. – 15.05.2019

NEMU Stuttgart

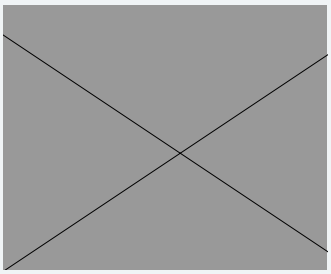


Location: **Stuttgart, Germany**
Company: **Hatebur Umformmaschinen AG**
Trade fair highlight: **AMP 20 N**

On 14th and 15th May 2019, Hatebur participated in NEMU 2019 in Stuttgart. This year's main theme was "New developments in forging technology". Groundbreaking new technologies and potential new avenues to pursue in terms of materials, production processes and value creation chains for massive forming were all showcased under this banner. The focal point was concrete, practical cold-massive forming solutions.

21. – 23.05.2019

Forge Fair USA



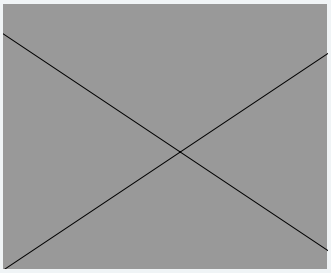
Location: **Cleveland, Ohio, USA**
Company: **Hatebur Umformmaschinen AG**
Trade fair highlight: **AMP 50-9/AMP 20 N**

The Forge Fair is North America's largest and most important event dedicated exclusively to the forging industry. In May, more than 1650 forging specialists from all over the world took part in the 2019 edition of the trade fair.

Hatebur once again had a large booth at the show, which we shared with our US representative, Forging Equipment Solutions (FES). Customers and other interested parties came to see us in person to find out more about Hatebur's machines and services. The exhibition was also an excellent opportunity to touch base with existing contacts to reinforce those relationships.

22. – 23.05.2019

Fastener Fair USA



Location: **Detroit, USA**
Company: **Carlo Salvi S.p.A.**
Trade fair highlight: **CS 668**

The Fastener Fair USA attracted experts from all stages of the supply chain: Distributors, machine designers, buyers and wholesale traders, as well as OEMs. Carlo Salvi took advantage of the opportunity to discuss new projects with customers and other interested parties at the booth, as well as touching base with existing contacts to reinforce those relationships.

19. – 21.03.2019

Fastener Fair Stuttgart 2019

Location: **Stuttgart, Germany**
Company: **Carlo Salvi**

The eighth edition of the Fastener Fair took place in Stuttgart between 19th and 21st March 2019. Over 12,000 industry experts from more than 90 countries converged on the international exhibition for the fastener and fixing industry.

Carlo Salvi was represented with its own booth and was pleased to see how many partners, customers and other interested parties came to see them there. The local Carlo Salvi branch joined forces with Hatebur colleagues and colleagues from various Carlo Salvi branches across the world, such as Turkey and England, to advise visitors to the booth.

A remarkable number of Turkish companies were present at the trade fair – indeed, customers and other interested parties from Turkey kept the Carlo Salvi booth very busy! The great interest of this emerging market in the fastener and fixing industry was very evident. The positive mood in the trade fair halls also reflected the healthy state of the industry and the record number of visitors.

Carlo Salvi and Hatebur would like to thank the many people who visited their booth and look forward to future successful collaborations.

See us **live!**

17. – 20.07.2019
MetalForm China

Location: **Shanghai, China**
Trade fair highlight: **AMP 20 N**

31.7. – 03.08.2019
MF-Tokyo

Location: **Tokyo, Japan**
Trade fair highlight: **AMP 20 N/CS 663**
Booth W2-12, West Hall

20. – 23.11.2019
Thai Metalex

Location: **Bangkok, Thailand**
Trade fair highlight: **AMP 20 N**

November 2019
Euro-Mexican Forging Congress

Location: **Querétaro, Mexico**
Trade fair highlight: **CM 625 / CM 725**
Location: **Hotel Hacienda Jurica by Brisas**, Querétaro, Mexico

We look forward to your visit!

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