

PROGRESS



HAIMER at EMO 2019

Product innovations and impressions of HAIMER



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Story: Bugatti Chiron brake caliper Additively manufactured and finished with HAIMER Duo-Lock



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New catalog

The complete delivery program of HAIMER as hard cover and interactive catalog



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DEAR CUSTOMERS & PROSPECTIVE CUSTOMERS. DEAR BUSINESS PARTNERS & FRIENDS. DEAR COLLEAGUES AND READERS.

Following the successful premiere of our customer magazine last year, we are pleased to present you now the second edition of **PROGRESS**.

The industry is changing and despite upcoming challenges we look confidently into the future. Similar to the manner in which we have grown within the last years, we want to continue to act in a sustainable and forward-looking manner. Doing this we want to stay faithful to what made us successful: Everything carrying the name HAMER is made by us. Our products are 100 % made in Germany and we remain with our production sites in Germany. In this respect, we will double our premises of Haimer Microset to more than 5,000 m² with a new building complex close to Bielefeld. For further information on our project in Bielefeld. please have a look at pages 28–29.

Our own production sites and especially our customers



with their daily challenges, are our source of ideas for innovations. Digitization and automation of the processes represent big chances for the future for every company.

We have therefore invested heavily into digitization and automation along the complete value chain in recent years. Because of that, more and more customers count on our solutions during the implementation of their projects.

"Technologies for Smart Production" hence was our slogan at this year's EMO show in Hanover, which we realized with a fully automized tool room. To learn more about our solutions and products shown at EMO, you can read from page 4 on.

In addition to the further development within the digital domain, we also count on innovations in other sections. In this regard, we expanded and optimized our product program also regarding tool (holding) solutions and shrinking technology, especially in the field of turning applications.

Our diverse product portfolio allows a significant increase in productivity for our customers in every economic situation, so they will be prepared for the future.

Together with you, our esteemed employees, customers and partners, we optimistically start in the New Year respectful of the upcoming challenges. In the name of the Haimer Group the management and family wants to thank you for your trust in us and our products. We hope you will enjoy reading our new edition of PROGRESS and we wish you all the best for the year 2020.

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Ramino Haim - Ramind

Claudia Haimer

Andreas Haime

IMPRIN	
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from left to right: Andreas Haimer, Kathrin Haimer, Claudia Haimer, Franz-Josef Haimer

OUR DIVERSE PRODUCT PORTFOLIO ALLOWS A SIGNIFICANT INCREASE IN PRODUCTIVITY IN EVERY **ECONOMIC SITUATION**

Andreas Haimer Managing Director Haimer GmbH and President Haimer Group



HAIMER at EMO 2019 -TECHNOLOGIES FOR SMART PRODUCTION

At EMO 2019 in Hanover, the Haimer Group displayed how modern tool management works with high-quality, process-reliable components, consistent digitization up to fully automated tool presetting using a robot cell.



ABOUT

From September 16th through 21st of 2019 at EMO Hanover - the worldwide leading trade fair for the metalworking industry - 116,700 visitors from 149 countries were meeting 2,211 exhibitors. The share of international visitors increased compared to 2017. More than half of the visitors did not come from Germany, whereas 23 % took the journey from Asia to Hanover. Concentrated decision-making power: 72 % of trade fair visitors stated that they could influence procurement decisions. A total of 98 % satisfied visitors made the show a successful EMO 2019.

The EMO General Commissioner Carl Martin Welcker summarized: "EMO Hanover has once again proved to be solid as a rock and, even in times of uncertainty, provides orientation for further development in production technology."

he Haimer Group, world market leader for tool shrinking and balancing technology, has established itself as a system provider for complete tool management and is taking it step-by-step into the future. The basis is the high-quality product program, which ranges from a wide variety of tool holders, shrinking and balancing technology, tool presetting devices to solid carbide tools and sensors. HAIMER bundles all these components in rool room solutions, a functional, ergonomic workplace design. A new software which enables the consistent exchange of tool data finally links them to a digital Industry 4.0 system.

Shrinking Technology for Industry 4.0

HAIMER presented its Industry 4.0-ready and network compatible Power Clamp i4.0 shrink fit machine line. The ergonomic shrinking stations with their patented NG coil are suitable for all solid carbide and HSS tools in the diameter range from 3 to 32 mm and come with an intuitive, easy-to-use software. The shop floor ready 7" touch display can even be operated

with thin work gloves. Upon request, HAIMER equips the Power Clamp i4.0 machines with a motorized coil and scanner that reads out shrinking parameters from data matrix codes. This ensures reliable, easy and automated shrinking. The Power Clamp i4.0 series covers a wide spectrum of equipment options. At EMO, two new models from this series were presented:

The compact Power Clamp Air i4.0 and Nano NG i4.0 are true specialists in their field of application. The Power Clamp Air i4.0 enables a particularly smooth and clean cooling for all kinds of shrink fit chucks and shrink fit collets, regardless of the outside contour by air nozzles and drizzle - without dirt and water residue. An LED temperature control ensures even greater process reliability. The Power Clamp Nano NG i4.0 was specially developed for shrink fit collets and small tool holders up to size HSK-A63. The shrinking process is horizontal, with a fully automated motor coil and air cooling.





NEW AT EMO -THE HAIMER AUTOMATION CUBE

With the new HAIMER Automation Cube, a robot cell on only about 10 m², tool presetting can be completely automated. The presented concept covers all process steps from the assembly and the disassembly to measuring and balancing of the tools - with the wellknown high process reliability. Of course, all devices installed in the cell can also be operated and used as usual in manual mode.



The HAIMER Automation Cube contains a tool cart equipped with tool holders and tools. On the presetting device Microset VIO linear toolshrink, the tools are shrinked and preset. After cooling down, the balancing quality of the respective complete tool gets checked on a HAIMER Tool Dynamic Comfort i4.0. The assembled and tested complete tool gets finally stored on a second tool cart and is thus released for use.

The complete handling is done by a robot. Managing Director Andreas Haimer points out that automation is meaningful and promising only "if the implemented hardware is 100 % reliable. All of our products are so robust and designed for durability that they ensure maximum process reliability and are suitable for all types of automation."



AUTOMATION CUBE PROCESS

- The tool cart is equipped by the operator with tool holders and cutting tools
- In the VIO linear toolshrink, the complete tools are assembled and set μm -precise 2
- In the cooling station, the complete tools are cooled down to room temperature
- In the Tool Dynamic i4.0, the balancing quality of the tools is checked and unbalanced tools are sorted out
- 5 A tool cart is available for the preset and tested tools

New tooling technology for turning and milling

HAIMER also focused on tool (clamping) solutions for turning with driven tools. With HAIMER Duo-Lock and shrink collets for driven tools, the tool change can be realized in a highly accurate and reliable manner in the machine – which results in reduced set-up times and thus leads to increased productivity.

HAIMER shrink collets enable precise machining at maximum flexibility. The multitude of shrink fit collets has been extended by sizes ER 11 and ER 32, so that a continuous program from ER 11 to ER 32 is now available. Together with the new shrink fit machines, this makes a perfectly coordinated system with great costsaving potential for the customer.

The Duo-Lock system (modular tool interface) impresses with a runout accuracy of the entire system of 5 µm and the tool can be changed directly in the turning machine with a repeatability of 0.01 mm in Z. Time-consuming presetting or set-up processes can be avoided.

Just in time for EMO. HAIMER extended its program in the field of Duo-Lock with a multitude of new milling geometries. Three cutting edge geometries specially developed for titanium machining are used in a joint project exhibited at EMO: A titanium brake caliper for the Bugatti Chiron. This brake caliper was a real eyecatcher and is the largest additive part made of titanium so far. Read more on pages 8 and 9.

OUR NOVELTIES AT EMO 2019



POWER CLAMP NANO NG i4.0

The shrink fit machine Power Clamp Nano NG i4.0 with air cooling is especially suitable for shrink collets and small tool holders up to size HSK-A63. The shrinking process is horizontal.

POWER CLAMP AIR i4.0

Thanks to its air cooling, the shrink fit machine Power Clamp Air i4.0 enables a particularly fine and clean contourindependent cooling of all shrink fit chucks and shrink fit collets

DIGITIZATION ALSO FOR SME

HAIMER WANTS Haimer Microset: Now measuring in the Y-axis

TO REALIZE Haimer Microset tool presetters are characterized by high-quality hardware, best ergonomics and ease of use. A particular advantage lies in their thermostable cast iron design. In addition, highly dynamic, wear-free linear drives ensure precise longterm quality. The parallel drive and guidance

system ensures optimum distribution of forces and guarantees a repeatable accuracy of ± 2 µm. At EMO, HAIMER presented the VIO linear with Y-axis. The presetting device allows the optics carrier to be moved by ± 100 mm in the Y direction in order to measure tools whose cutting edge is not centered. An application advantage that comes into play especially when using asymmetrical tools.

HAIMER DAC networks tool management

DAC (Data Analyzer and Controller) is the name of the tool management system developed by HAIMER. It manages the exchange of target and actual values as well as other tool data between the individual tool room stations and establishes the connection to the corporate network. In combination with RFID data carriers, which HAIMER tool holders can be optionally equipped with, or via QR or Data Matrix codes (which can be read out and evaluated by different systems via a scanner), the HAIMER DAC allows a clear identification of the complete tool. Through the network connection, it also provides additional tool data: Assembly instructions, article numbers, stock adjustment, and 3D models. In addition, DAC supports the user in the analysis of production data and process optimization.

Andreas Haimer explains, "With the DAC, we want to make digitization in tool management feasible for small and medium-sized companies." The concept is therefore scalable from small to large. It can flexibly be connected to existing presetting devices as well as various CAD/CAM or control systems.

Highest precision due to 0.001 mm concentricity

In addition to the developments on the digital side, HAIMER also set new standards in precision machining at EMO. As a standard feature, HAIMER shrink fit tool holders are already delivered with a very high runout accuracy (< 0.003 mm at 3xD). All HAIMER tool holders are balanced to G2.5 at 25,000 rpm or U < 1 gmm and undergo a double 100 % inspection. Due to their reliable quality, the tool holders are used by our customers in fields such as medical technology, precision mechanics and aerospace.

Upon customer request, HAIMER now also supplies ultra-precision shrink fit chucks with a guaranteed runout accuracy of ≤ 0.001 mm and with fine balancing on G2.5 at 33,000 rpm or U < 0.5 gmm for maximum accuracy in high-speed machining.

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The HAIMER EMO Team 2019 comprised about 60 employees from the entire Haimer Group serving our customers from all over the world every day.



Duo-Lock and shrink fit collets with HAIMER MILL geometries as a solution for several turning applications





VIO linear WITH Y-AXIS

The presetting device VIO linear with Y-axis enables the optics carrier to be moved by + 100 mm in the Y direction in order to measure tools whose cutting edge is not centered.

BUGATTI PRODUCES FIRST ADDITIVE TITANIUM **BRAKE CALIPER**

Text and photos by Harald Klieber, NC Fertigung:

The center of attraction at EMO was the first additively manufactured brake caliper made entirely from titanium. Automobile manufacturer Bugatti, together with partners Benz, HAIMER, Bionic Production and Vogt, has implemented this titanium component, which is currently the largest to be produced by additive manufacturing. Even more important for Bugatti Engineering Manager, Frank Götzke, was the fact that the titanium brake caliper is the first really safety-related application for an additive component.

gital, automated and intelligent were the main aspects of EMO. But additive components and tools were also in the limelight. The highlight was definitely the first brake caliper produced entirely from titanium, which was exhibited by project partners Bugatti, Benz, HAIMER, Bionic Production and Vogt for the first time in Hanover.

Close-grained in the overlap region

The titanium brake caliper was printed by Lüneburg-based engineering company Bionic Production. "The bottom line is that our titanium brake caliper is a good 43 % lighter than the standard brake caliper currently in use, without having to make any compromises with regard to strength or rigidity on the contrary," emphasizes Frank Götzke, who expects the first items to be fitted in the Bugatti Chiron by the end of 2020. Further improvements are anticipated in the meantime. Brake calipers are currently produced on an SLM 500 in around 36 hours. "With its simultaneously operating four lasers, the SLM 500 is predestined for this purpose and we have set it up well", reports Patrick Folkert, Commercial Manager at Bionic Production, who vouches for the fact that the base component has a very high material quality. "We have a very closegrained structure. We can also guarantee a fine grain size in the decisive overlap region of the four lasers and ultimately achieve a material fill of 99.97 % throughout the whole component," reports Patrick Folkert.

Ultimate example of additive capability

In future, Bugatti will have to produce a total of six different brake calipers. According to Frank Götzke however, this involves more than just a few modifications for the front and back or left and right brake calipers. "If you need to brake a car such as the Chiron to a complete standstill from 400 km/h, high performance and precision are also required from the brake piston. This is because the temperature of the brake disk on exiting the brake caliper is around 1,100 °C and just shy of 700 °C on entry half a revolution later. Every detail, every fit and every sealing surface are therefore important." According to Frank Götzke this truly makes this brake caliper the ultimate example of what additive technology and the components produced thereby can achieve today. When the brake caliper comes



The Bugatti brake caliper following additive manufacturing exhibited by SLM Solutions at EMO 2019. (Photo: HAIMER)



The reduced height milling head specially developed by Benz for the titanium brake caliper not only has directional coolant nozzles but also a highly productive and extremely stable spindle which naturally guarantees runout accuracies of less than 3 µm. (Photo: NC-Fertigung)



The titanium brake caliper is the product of a close collaboration between project partners Bugatti, Benz, HAIMER, Vogt and Bionic Production. From the left: Oliver Baur (Managing Director, Benz), Johanna Gotzian (New Technologies, Bugatti), Andreas Jankovic (Key Account, Benz), Stephan Wangler (Key Account, HAIMER), Christoph Zeller (Authorized Officer, Benz), Frank Götzke (Manager, New Technologies, Bugatti), Patrick Folkert (CFO, Bionic-Production), Tobias Völker (Head of Marketing, HAIMER) (Photo: NC Fertigung)

to be used in the Bugatti Chiron, not only will the world's currently largest component additively manufactured from titanium be on board at speeds of up to 490.5 km/h, the record recently established by Bugatti, but it will also have to undertake significant safety functions. For finishing the functional surfaces, piston chambers, gasket seats and end positions for pistons and pads, the five project partners developed a special milling head with Duo-Lock interface which can theoretically and practically achieve up to 8,000 rpm. "The milling head is currently designed for a maximum of 3,000 revolutions. This is not sufficient for Bugatti's application or for machining the functional surfaces of the titanium additive component. However, we have of course already carried out extensive checks on the stability of the milling head at 8,000 revs in our development laboratory in Haslach," assures Benz Authorized Officer, Christoph Zeller. As far as cutting technology is concerned, the most difficult achievement was the milling of the trapezoidal slots. "In order for us to implement the application and, for example, to be able to mill the clearance holes for the brake pistons inside, we first had to reduce our milling head from a height of around 50 mm to less than 40 mm. This is not such a trivial matter when you have to re-optimize a proven and sophisticated high-performance bevel gearbox and at the same time maintain functionality," says Christoph Zeller, describing the task. Furthermore, thermal stability has to be guaranteed throughout the whole of the machining process.



As well as a high-quality additive component together with high-performance milling head with interface and tool, Bugatti categorically recommends an optimum coolant feed - directly to the cutting edge. (Photo: NC-Fertigung)

Height of Duo-Lock interface also minimized

HAIMER also had to make its contribution to the reduced height of the milling head. The height of the internal clamping system of the Duo-Lock interface had to be minimized to enable Benz to fit the reduced shape and height of the milling head between the flanks of the brake caliper. "All in all, the cutters travel into the brake caliper with 1 mm clearance and then mill the functional surfaces at very considerable

THE CUTTER **GEOMETRY HAS BEEN SPECIALLY** MATCHED TO THE

speeds. However, you can't accomplish this with regular video conferences. We would not have achieved this result without regular coordination meetings, including on-site on the machine. Of course, it is then ideal if strong engineering companies have already successfully completed several projects together," says Frank Götzke, pressing home his choice of project partners. The cutters together with the interface for the milling head were developed by tool-clamping specialist HAIMER. "It was our job to fit the currently most stable and most accurate interface on the market, our solid carbide Duo-Lock coupling, into the Benz angle head".

Special PVD coating

A decisive factor, according to HAIMER Key Account and Product Manager Stephan Wangler, was that, in particular, the height has been minimized in order to enable the cutter together with the cutting head to pass between the cheeks of the brake caliper and still be able to cut. "Our cutter geometry has also been specially designed to meet the demands of the component. A total of three different special Duo-Lock cutters are currently used on the brake caliper for reworking the functional surfaces, radii, recesses and various special shapes," reports Stephan Wangler. Important factors here are that the milling cutters have a runout accuracy of less than 3 µm in the fitted state and that their longitudinal repeatability can be guaranteed to be less than 10 µm, according to Stephan Wangler, emphasizing the requirements. The additive material has also been addressed. For the additive titanium, HAIMER has developed special cutter geometries and provided an even more special PVD coating.

HAIMER NEW PARTNER OF THE AUGSBURGER PANTHERS

Since the season 2019/2020 HAIMER is new premium partner of the Augsburger Panthers in the German Hockey League (DEL). The worldwide operating family-owned company promised the Panthers a far-reaching partnership for the next three seasons until 2022.





ndreas Haimer, Managing Director and President of the Haimer Group, is pleased about the upcoming partnership: "The Augsburger Panthers are a fan-favorite sports team in the region and they played a terrific season. We are proud to be able to support the Panthers as a premium partner. The Augsburger Panthers stand for passion, community, fairness, future and our region. We live all these values in our company," stated Haimer. "HAIMER is well-known in the engineering industry for its exceptional quality. We do play in the highest international league of this industry. That is why it connects us even more that the Panthers played in the Champions Hockey League."

Leo Conti, Marketing Manager of Panthers, adds: "We are delighted to have HAIMER, a hidden champion and global player with regional roots, as another strong partner on our side. HAIMER and the Panthers have in common the strong relations to the region, along with a strong down-to-earth tradition and fascination. Here 'pure emotion' meets 'quality in perfection'.'



Andreas Haimer and Lothar Sigl have signed the partnership From left: Tobias Völker (Head of Marketing HAIMER), Andreas Haimer (Managing Director Haimer GmbH and President Haimer Group), Lothar Sigl (Managing Director Augsburger Panthers), Claudia Haimer (Managing Director Haimer GmbH) (Photo: Siegfried Kerpf)

The involvement of HAIMER includes its own company lounge in the Curt-Frenzel Stadium for customer loyalty programs with German and external customers. Head of Marketing Tobias Völker (HAIMER) likes the advertising on the LED screen and most of all the HAIMER logo on all jerseys (home and away) placed just below the collar. "Advertising on the players' jerseys is something special, because it conveys emotionality, team spirit and commitment. The Panthers are the perfect partner to represent these values. We look forward to our first major engagement in professional sport sponsoring. So far we supported and will continue to support local and regional sports clubs focused on youth development."





WIN A VIP TICKET!

Get the chance to win exclusive VIP tickets for a Augsburger Panther match in the HAIMER VIP Lounge!

HAIMER raffles 12 entry tickets to the HAIMER VIP Lounge for the match on Sunday, February 23rd 2020 at 4:30 pm against the German **Champion Adler Mannheim**

Send us an email with your name, company and job title to marketing@haimer.de or send the perforated ticket by mail to: Haimer GmbH, Weiherstrasse 21, 86568 Igenhausen, Germany

Company Job title





Fmail

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Champions Hockey League for the first time

INTERPLAY OF QUALITY AND PROFITABILITY

From the shrink fit chuck to the presetting device – German aerospace supplier HEGGEMANN relies on consistent HAIMER quality in tool management. The benefits are visible: in the simple, user-friendly operation, the automated data transmission, longer tool holder and tool life, as well as great results regarding precision and component quality.



nyone who, like HEGGEMANN AG, Büren, concentrates on the development and production of sophisticated metallic lightweight components and subassemblies, is a predestined partner of the aerospace and automotive industry.

Machining at the highest quality level

Highest quality standards apply at all times. This can be seen in production with state-of-the-art CNC milling and turning centers. Ulrich Ahlers, Head of Machining, explains: "Here we cut a wide range of very demanding materials from titanium, inconel, stainless steel, steel to high-strength aluminum. In most cases, it is individual parts and small series that have a high demand for precision and quality. Accordingly, not only the machine shop floor, but also the tools and the tool management are of great importance."

Ulrich Ahlers and Juergen Ballbach, who are responsible for tool management, have taken on this field in recent years in order to optimize it: "Our desire was to achieve the greatest possible consistency in terms of the shrinking, balancing and presetting devices used. We succeeded in doing this together with our partner HAIMER."

Jürgen Ballbach has been using two HAIMER Power Clamp Comfort NG shrinking machines for six and four years, in order to shrink the required milling tools. "As the name implies, the intelligent NG coil and integrated contact cooling make these devices very comfortable to work with," says Ballbach from daily experience.

Balancing system is used for tools and flvwheels

Two years ago, HEGGEMANN invested in a HAIMER Tool Dynamic Comfort balancing system. Ulrich Ahlers describes the reasons: "We are milling here with up to 18.000 rpm and use cantilevered tools. If they show an imbalance, this puts a strain on the spindle and noticeably

shortens its service life. These are considerable costs that can be avoided by the balancing process on the Tool Dynamic. In addition, finely-balanced tools achieve a higher level of precision and surface quality on the component due to reduced vibrations."

Tool presetting - fully automatic and capable of communication

A big step towards consistency in tool management was done in 2018 with the new HAIMER presetting machine. The Haimer Microset VIO linear receives all the required information regarding X and Z dimensions as well as the starting position through the connection to the CAM system hyperMILL. The presetting device then supplies preselected actual values in the complete tool set via post processor and network to the intended machine tool.

Cooperation with HAIMER is gaining momentum

The partnership between HEGGEMANN and HAIMER continues to develop. An example: When Jürgen Ballbach talked to Thorsten Böker, the responsible technical sales representative from HAIMER, about the difficulty of a special machining application, he had a proposed solution. It concerned a bifurcated component into which two elongated grooves approximately 100 mm (3.94") apart must be inserted as fits. So far, this task was taken over by an oversized carbide end mill, which had to be ground free by hand to get through the first tab. HEGGEMANN now manages

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Jürgen Ballbach, responsible for the entire tool management, demonstrates on his HAIMER balancing machine Tool Dynamic Comfort how to balance flywheel elements.



Quality is a decisive factor in machining at HEGGEMANN. The aerospace and automotive supplier therefore relies on consistent collaboration with HAIMER in tool management – from shrink fit chucks to tool presetting.

this machining operation with HAIMER Duo-Lock, a modular tool system with solid carbide exchangeable milling heads and extensions in various geometries and lengths.

"The switch to this tool has paid off in no time," emphasizes Ulrich Ahlers. The problem solver was ultimately the extension that HAIMER has already delivered in released version. It saves the manual grinding of every single tool. All that needs to be changed is the solid carbide tool head, which is considerably less expensive. "In addition, the screw head can be changed quickly at the workplace," mentions tool specialist Ballbach.

"Because the Duo-Lock tools can be preselected with a repeatability of 0.01 mm (0.0003") due to their special interface, we do not even have to measure them after the change." In addition, the overall system runout of less than 5 µm ensures best machining results and according to Ballbach tool life is three times as long as those of the predecessor tools.



The Haimer Microset VIO linear takes over tool measurement fully automatic in three axes at HEGGEMANN. It also enables fast data exchange with both the hyperMILL Open Mind CAM system and the machine tool.

Ouality in products and partnerships

THE HAIMER **MICROSET VIO LINEAR HAS CONVINCED US** WITH ALL FEATURES

The process and results of the cooperation with HAIMER not only satisfy the production staff and those responsible, but management also appreciates the quality and reliability of their partner. HEGGEMANN CEO Christian Howe: "Thanks to the high-quality HAIMER products, we have succeeded in further improving our production processes. The high quality products perfectly match the requirements of our customers in the aerospace and automotive industries. Additionally, we benefit from short distance to the HAIMER location in Bielefeld, where

we always get fast, perfect service."

HAIMER WORLDWIDE

We are there for our customers and partners all over the world. With our own sales and service subsidiaries in the largest metalworking markets, we offer fast and easy delivery and after sales service for our customers all around the world.

Our sales and service subsidiaries are specialized in individual customer requirements and ensure that the well-known, first class service and expertise of HAIMER is delivered to you on-site and in your local language.

Numerous developments and projects in our subsidiaries provide insight into the international growth of the Haimer Group in 2019.



Since December 2019, Nicolas Fager is responsible for the HAIMER sales activities in Scandinavia. With a focus on the Swedish market he will also take care of the development in Denmark, Finland and Norway.

📀 BRAZIL



Welcome to HAIMER: We welcome four new colleagues in the areas of regional sales and application engineering in our Brazilian subsidiary Haimer do Brasil.

RUSSIA



The Russian market is supported on site by Andrey Lobanov, Key Account Manger Russia since 2019.





In May 2019, Haimer USA opened their doors again for their Annual Open House event. Guests were able to witness innovations through live demonstrations and presentations. The well-known Bavarian hospitality with traditional Bavarian menu and folk music created a perfect atmosphere during the customer event.



Premiere: For the first time, HAIMER participated with their own large booth at the traditional Czech mechanical engineering fair MSV in Brno in October. The show also simultaneously served as a successful start for our new application engineer Luboslav Kokavec, supporting customers in the Czech Republic and Slovakia in the future.

FRANCE



Our newly established subsidiary Haimer France – BeLux SARL moved into their location in Limas near Lyon in February 2019. The great showroom provides optimal conditions for the training of customers and partners. Sales manager Didier Tachot and his team of seven technical sales representatives and one application engineer support the French market with lots of experience. Bonne chance!

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The new address of Haimer France - BeLux SARL: Haimer France – Bel ux SARI 3 Avenue Edouard Herriot Parc Elitech - Bâtiment CO2 69400 Limas



Baton change in Shanghai:

After 10 years as the managing director of Haimer Shanghai, Jony Lu says goodbye and will leave for his well-deserved retirement at the beginning of 2020. While in 2010, four employees were a part of the team, today 40 colleagues take care of our Chinese customers. The new managing director is Ai Feng. For his new task we wish him good luck and a lucky hand.



Taehwan Jeon is our new managing director, an experienced manager for Haimer Korea. We wish him good luck expanding our presence on the Korean market.

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HAIMER is now represented in Vietnam since 2019 with its own technical sales representative. Tuan Dinh supports the local distributors, partners and end customers with full commitment



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near Madrid provides perfect possibilities for training, seminars and product demonstrations.

The new address: Haimer Spain, S.L. Calle Loeches 66–6 ES 28925 Alcorcón, Madrid

Tel.: +34-916-266-240 E-Mail: haimer@haimer.es

OUR EMPLOYEES WORLDWIDE

As an international company, HAIMER employs people from a total of 43 different countries. We focus on cultural diversity and specific knowledge and thus on the proximity to our customers.



EVENT CALENDAR 2020



OCTOBER ▼	NOVEMBER ▼	DECEMBER
ctober 5–9 ISV no, CZE	November 18–21 EMAF Porto, POT E M A F TALEGOENIC	December 7–12 JIMTOF Tokyo, JPN JIMTOF
itober 6–8 IETAVAK princhem, NLD	November 18–21 Metalex Bangkok, THA	
etober 7–8 leximold lerétaro, MEX	November 24–27 DMP Shenzhen, CHN	
ctober 14–17 IMU Ian, ITA Sector Fieramilano		

ACHIEVING THE IMPOSSIBLE is SOP for Precision Tool Technologies

Precision Tool Technologies Inc. is a manufacturer and distributor of high quality products and services for wholesale optical laboratories and retail optical industries. Their first success came in the precision machining of polishing tools and mold inserts for the optical industry, where accuracy of ± 0.0001 " and surface finishes of 4 Ra are required. For successful operations, this level of excellence must be repeatable on a daily (and nightly) basis. During the course of perfecting their techniques, Precision Tool became the "go to" company for solving difficult machining problems for a variety of industries. HAIMER has been a key partner in helping them maintain this competitive edge.



AIMER entered the picture when Precision Tool began running lights outs (what the company calls a "virtual shift") due to an increasing demand for their services. This posed a challenge

since their equipment consistently runs at speeds up to 40,000 rpm, "We didn't want to take the chance of buying equipment for 7-figures and then start blowing out spindles," said Jim Goerges, the company's President. "The solution presented itself when I read an article written by HAIMER."

The article, "Unbalanced Perceptions", detailed the importance of toolmakers and machinists working together to achieve better results with harmonics and balance. According to Jim, "We call something 'art' when we don't understand what we are doing. In this article, HAIMER turned the 'art' into science... and that's what makes it repeatable." The article is now mandatory reading for all Precision Tool engineers.

With the article as a guide, Jim and his team set about building a better process that would enhance their digital

platform, increase productivity and improve product quality. According to Jim, there were three vital elements required to move Precision Tool ahead of the pack.

One: Change Management

"We created a positive mindset about the program and made sure everyone understood the Vision and became totally committed to it," he said. "If you don't have that buy-in, nothing else matters. People needed to get to a place where change was always a welcome component to the operation as a whole."

Two: Quality Tooling and Equipment

For Precision Tool, this meant HAIMER HSK tooling and shrink fit systems. (No collets, side locks or Weldon flats.) Shrink fit provides them with repeatability and helps reduce tool stick out. They worked with local HAIMER manufacturer's representative Andrew Skoog to put together the right package.



Three: Balanced Assemblies

To say that Precision Tool is a fan of balancing is an understatement. According to Technical Advisor Gary Goerges, "HAIMER raised our awareness of how good things can be if you balance tool assemblies. In our situation, surface finishes on our equipment are now pretty spectacular. With the HAIMER Tool Dynamic, we can get very particular on how close we want to balance something."

Jim agrees. "Much of our customer base had the same problems (accuracy, blown spindles and poor surface finishes). Because of the HAIMER balancing machine, we now have the means to provide them with a solution. The word has gotten around that we can handle the hard jobs other shops can't."





Precision Tool Technologies uses their balancing machine Tool Dynamic Comfort not only for balancing entire tools. They use the machine also successfully in balancing precision components.

Doing the Impossible Part I

One of Precision Tool's customers had a part problem that had their in-house engineers stumped. The part was a conical funnel with holes used to fill chemicals or test equipment for genetic decoding. This complex aluminum part has internal finishes with conical shapes, 40-50-60 times stick out length and must have a 4–6 Ra finish after coating (which doubles the surface roughness). This combination of requirements made it impossible for other shops to do the job.

The engineering staff at Precision Tool's customer admitted they couldn't make the part. As a result, the company was having a hard time making delivery times, so they decided to give Precision Tool a shot.

The HAIMER balancer made all the difference. Precision Tool manufactured the part and sent it back to their customer - and they were floored. "Nobody could make the part to the finished specs that they wanted," remarked Jim, "We did it and a big part of that was how exact we were able to get in terms of balancing special machine tooling to achieve the surface finish on the internal features. In fact, we would not have been able to perfect the harmonics without the HAIMER balancer."

Jim credits the balancer for giving Precision Tool a competitive advantage on many different levels. "It's often the difference between saying 'yes' or 'no' to a job," he said.

Doing the Impossible Part II

Another example of how the partnership of Precision Tool and HAIMER managed to achieve what no one else could was in the manufacture of an aspirator attachment for a seeding machine. When the part spins in the machine, it gets up to 12,000 rpm. If it is out of balance, it shakes the entire seeding machine - making all the components vibrate and causing premature retirement of the machine due to excess wear.

No one could make the part work to spec, but Precision Tool could. While their attachment carried a premium price compared to other vendors, the customer saw the value that the superior part would bring to the overall quality of their seeding machine. This was all due to Precision Tool's ability to utilize the HAIMER balancing machine on not just tool holder assemblies, but on physical parts as well. The TD 2009 machine was able to identify unbalance and accurately designate the exact position and accurately designate the exact position where weight correction was needed. Becoming Better and Better Precision Tool's next investment to complement

the balance and shrink fit machine will be a HAIMER automatic presetter. "It will give us a JOB OR NOT better, faster, more accurate way of bringing a complete tooling solution to the machine in-

stead of stopping the machine during the run," Jim said. "Adding presetting to shrink fit and balance will allow us to create a total throughput solution for all of our operations."

If you would like to learn how to enhance your equipment lineup and move your production practices into the future, please contact us.

THE HAIMER BALANCING **IS OFTEN THE BETWEEN GETTING THE**



HAIMER. academy

In 2018 we founded the HAIMER academy, a program consisting of elaborate seminars and workshops. The program was very well received and so in 2020 we will once again transform our Application Center into a hands-on Training Center to provide our customers with great advice for practical implementation.

The seminars and workshops offered are aimed in particular at engineers, foremen, production managers, milling and turning machine operators and tooling professionals. The HAIMER academy was founded with the objective to answer our customers' requests by providing even better support. The HAIMER specialists share their expertise regarding application issues and process analysis methods with the aim of long-term, future-oriented optimization including cost-saving potential for our customers.

PRODUCTION & PRODUCTIVITY 5-AXIS SIMULTANEOS MACHINING

- Insight into material and cutting material types
- Machining strategies and their influencing variables with OPEN MIND
- Tool holder and end mill selection for different materials Workpiece machining
- Identification and calculation of cutting data in small groups

Optimal tool cooling

Tool set up

- Balancing grade and its impact
- Selection of the optimal tool holding system



Analysis of the current tool clamping technologies on the market

Selection of appropriate clamping systems on turning

machines

- Milling preparation with driven units
- Workpiece machining

Joint machine set-up

- Tool change in the machine



HAIMER APPLICATION CENTER

- Total area of 600 m² with machine park, presentation area, reception and catering area
- Four high-end machining centers for tests, comparisons and applications for a wide variety of industries (HSC, aerospace, general mechanical engineering)
- Fully equipped state-of-the-art tool room
- CAD/CAM systems for part simulation, programming and optimization
- Most modern media technology for live transmission from the machine tool



Live machining: comparison between time savings from conventional and trochoidal milling strategies

HAIMER ACADEMY 2020





Next dates May 7, 2020 October 15, 2020

• Wear at the cutting edge and its influencing factors Open discussion, time for exchange of experience with experts

Workshop 1 pm-5 pm

Next dates May 8, 2020 October 16, 2020

Comparison of actual clamping systems with HAIMER solutions



The workshops contain presentations and live demonstrations at the machine tools.

QUALITY WILL ALWAYS PREVAIL

Text and photos by Frederick Rindle, MAV Journal:

The tool and mold maker Deckerform from nearby Aichach relies on HAIMER high-end products in its manufacturing facility. Most notable are the tool holders with their high quality, which ensures optimum machining results something which is particularly important for unmanned shifts. The Aichach-based company also relies on HAIMER technology in shrinking, balancing and for milling tools.

ur product range is quite extraordinary," says Anna Tschacha, Managing Partner of Deckerform, with conviction. Like most in their sector, the family-run tool and mold making company with 75 employees manufactures in batch sizes of 1 however, its customers come from widely differing fields. "As well as for the automotive industry, our molds are used in the production of chairs, ski helmets, shopping baskets and facade components," explains Tschacha.

Thanks to the wide portfolio of injection and compression molding tools, the Deckerform experts from the Bavarian town of Aichach have acquired vast engineering know-how over the years. In 2007 this broad knowledge led to the founding of Deckerform Technologies. Since then, the subsidiary has catered for customers concerned with the whole process of plastic part production.

The entire injection molding process comes from a single source

"When you come to us with an idea for a component, we can plan the entire production process," says Hans-Jürgen Koppold, Production and Training Manager, describing the comprehensive offering. Besides the manufacturing know-how, which also includes filling and distortion analyses, FEM calculations and topology optimization, the component itself is also designed and optimized to suit the injection molding process. The final gap in the process chain was closed in 2017 with the

sale and distribution of the allelectric Toyo injection molding machines, which are available with 50 to 1,300 t closing force. "Since then we have offered our customers in the component design, machine technology and automation industries everything from a single source," says Tschacha. "This gives our customers a significant advantage as they have only one point of contact for the whole manufacturing process when they come to us." The Aichach-based company also undertakes the After Sales Service for all components.

> HAIMER's Power Mini Shrink Chucks ensure best machining results and long tool life at Deckerform

Digital twins for all components

But the tool and mold making experts do more than merely follow innovative paths on the process side; the company's own manufacturing facility is also repeatedly enhanced. The Deckerform specialists make use of the browser-based automation software, Evomecs. The entire manufacturing process is simulated in real time in the software. There is a digital twin for every workpiece, tool, machine and handling system. In doing so, various items of process information are assigned to each element. For the tools, for example, this means that, along with information such as geometry and tool life, their entire history is stored together with deployment times and points of use as well as storage locations. With the help of the software, the tool and mold makers are also able to accurately monitor the running times of the three Hermle 5-axis machining centers used for finishing. "Our objective is to achieve more than 7,000 machining hours per year with extended single-shift operation," says Stefan Schmid, son of one of the two company founders responsible for CAM programming. Process reliability and machining quality are of the utmost importance for the Aichach-based company. "We have programs which sometimes run for more than 150 hours, so a broken tool, particularly on an unmanned shift or at the week end, would be catastrophic," says Schmid.

Three years ago the company

HAIMER shrink chucks. "About a

fifth of our holders already came

from HAIMER," remarks Koppold.

"We were so impressed with their

Nearly all tool holders come from HAIMER





The various HAIMER shrink fit holders at Deckerform are shrinked on a Power Clamp Premium i4.0.

Power Shrink Chucks differ from standard shrink chucks in their optimized design, which combines high rigidity with vibration dampening. This enables high machining performance to be achieved while protecting the machine, spindle and tool. And, like all HAIMER shrink chucks, this is accomplished with a runout accuracy of $< 3 \mu m$ at 3xD tool overhang.

For difficult machining applications

HAIMER Power Mini Shrink Chucks are used to a great extent for the typical deep cavities and machining operations with large interference contours. The one-piece shrink chucks with a slim 3-degree external contour are ideal for 5-axis machining of components where access is difficult.

The base of the shrink chucks is reinforced. This enables milling to be carried out efficiently with the tool engaged, even with long overhangs. "The quality of the holders is very important, especially when we work with extensions," remarks Schmid. "Otherwise, it is impossible to control the resulting vibration. The Power Mini Shrink Chucks have impressed in this regard from the very beginning. We can sometimes even avoid using extensions".

"HAIMER tool holders have enabled us to produce without any problems in unmanned operation," says Tschacha. "Tool breakage has been greatly reduced, the component surfaces are flawless and the machining accuracy is simply first-class".

Shrinking i4.0 ready

Attention is likewise paid to the system concept, high quality and userfriendliness when it comes to the shrinking process itself. Deckerform was therefore one of the first to make use of a high-end shrink station from the HAIMER Power Clamp i4.0 Premium range. HAIMER is one of the few suppliers on the market that is able to provide shrink fit holders and the appropriate matched peripherals from a single source.

The new shrink fit unit has integral contact cooling for all tools (solid carbide and HSS). The cooling bodies are provided with cooling position indicators and, furthermore, are fitted to linear guides. This enables them to be accurately centered when cooling and the hot shrink chuck placed on them. The shrink fit units enable semi-automatic operation and can also be operated intuitively. The machines of the i4.0 line also have a

The collaborative partnership with HAIMER and the continuous readiness of its field workforce to enhance the production facility in Aichach has also led to the deployment of HAIMER end mills by the mold making experts. "We actually had no need to change our tools," says Schmid. "But the performance of the HAIMER mills simply impressed us."

Deckerform uses the 2.5xD version of the end mill mainly for roughing. In doing so, the end mills impress with their cutting volumes and tool lives as well as the quality of machining. The ball nose end mill of the HAIMER MILL Power Series scored equally well. As a result it has been used in the production lately, too. "The quality of the high-grade precision tools is impressive, particularly with the tool steels that we use. In future, we are sure to be using further HAIMER end mills," says Koppold emphatically.

Deliberately relying on quality: Anna Tschacha, Managing Partner and Hans-Jürgen Koppold, Production and Training Manager at Deckerform

7" touch display suitable for workshop use, which can be operated with thin work gloves. "The shrink fit unit enables us to set up orders for the next few days in advance. As a result, we have no unintended downtime due to missing tools," says Koppold.

Balancing technology ensures best performance

At Deckerform, RFID chips are integrated into the tool holder for digital data transfer to the machine tool. "Although they only weigh one or two grams, the integration of the chips had a considerable effect on the balance quality of a considerable effect on the balance quality of the holders," says Schmid. "Accordingly we have re-balanced all tool holders. We were

80 % OF OUR HOLDERS **ALREADY COME** FROM HAIMER. **AND THE NUMBER IS**

then able to use our tools once again without any problems, even at speeds up to 25,000 rpm, while not having to worry about poorer surface guality, reduced tool life or spindle problems". The holders are balanced quite easily using a HAIMER Tool Dynamic Comfort balancing machine.

Collaborative partnership

THE NEW HAIMER CATALOG

Discover the new HAIMER complete catalog. It combines all HAIMER single catalogs and will be updated annually with new products and services developed by HAIMER.



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PROGRAM N PROGRAM L I E F E R P R D E L I V E R Y

ΣΣ





www.haimer.biz/services/ catalog-requests.html



The HAIMER catalog at the final print approval. Also here we ensure that Quality Wins.



s a system partner around the machine tool, we are committed to providing you with our solutions across all product categories. You can find 10,200 articles for milling, shrinking, balancing, measuring, presetting and a lot more innovative solutions ranking among the best in the market on 736 pages. Also in the future there is no getting around the HAIMER precision. As usual, our products on stock are shipped on the same day of the order - order today, delivery tomorrow.

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INTERACTIVE CATALOG

The online interactive catalog is available as a desktop and tablet version. The following special functions are integrated:

- Search according to article number
- Easy transition into each chapter with an interactive function
- Usable in online and offline mode
- Responsive design
- Social media embedding (share & like)
- Video function

Here you can open the interactive catalog



NEW TOOL PRESETTING ROOM

In 2019 in the production site in Motzenhofen a large tool presetting room was installed. It is, of course, equipped with the latest HAIMER technology.



Manfred Mayr started his apprenticeship at HAIMER over 35 years ago. Today, the plant manager is responsible for around 100 machine tools (turning and milling) at the Motzenhofen and Igenhausen production sites.

ONLY WITH AN ORGANIZED **TOOL PRESETTING ROOM.** THE MACHINES ARE **RUNNING AND NOT THE EMPLOYEES. THAT IS WHERE** THE MONEY IS EARNED.

HAIMER TOOL ROOM BENEFITS

- Modular room design according to customer requirements
- Shrinking, balancing, presetting already integrated in the concept
- Tidy and separated "island" solution for concentrated working atmosphere
- Possibility of a room-in-room concept
- Space-saving design
- Time saving in tool preparation
- Short walking distances thanks to centralization
- Ergonomic working

(Data Analyzer & Controller) is already successful in use.

For tool set-up, employees have access to two Power Clamp i4.0 shrink fit machines, a network-compatible balancing machine Tool Dynamic Preset Microset i4.0 including a Balluff-read-and-write-unit and also a fully automatic tool presetter VIO linear. Simple operation and automated solutions ensure a smooth production in three shift operation. All new machine tools are operated with RFID chips in the tool holders so that the tool data can be transmitted digitally.

eedless to say, in our soft machining production site in Motzenhofen, we use our own tool holders, cutting tools as well as shrink fit, balancing and presetting technology in a tool room fully equipped by HAIMER. Also the new tool management system DAC

A quality measuring room is connected to the tool room. Here the first sample of every series gets its approval on high-precision 3D coordinate measuring machines. After the approval, the production of the series continues. The room is always air conditioned, so that measurement results are accurate.

For the tactile measurement in the quality measuring room, more than 1,000 measuring points are being measured and a digital inspection program is being followed by scanning the workpiece. Depending on the product and the check, it is for example given to use the appropriate touch probe system on the CMM or the contour measurement with an optical wave.

Quality Wins - Not just a slogan for HAIMER, but our philosophy and commitment. We manufacture with µm-precision, even in large lot sizes.

The air-conditioned quality measuring room is located next to the tool room in Motzenhofen



HAIMER MICROSET

600 m²

PRODUCTION SPACE

600 m²

STORAGE SPACE

500 m²

OFFICE SPACE

2x

CURRENT

CURRENT

 1800 m^2

1200 m²

STORAGE SPACE

2500 m² Office space





Currently two final concepts are compared in regard to their feasibility.



HAIMER STAYS

COMMITTED TO THE

PRODUCTION SITE

Olaf Stoffels Managing Director aimer Microset Gmbł





BIG PLANS IN BIELEFELD

HAIMER stays committed to the Microset production in Bielefeld, Germany, and plans to enlarge the production site for Haimer Microset. The new property embraces 7,300 m² and was acquired by the Haimer Group in 2019. The planned new building offers almost 3,000 m² space for production, packing and storage as well as additional 2,500 m² for the office.

B

products will be presented, will become the center of the office building. Currently the project is in the final bidding stage and two final concepts are evaluated. According to the current status, the ground breaking ceremony will take place in the beginning of 2020. The relocation from the Gildemeisterstrasse in Bielefeld to the Konrad Zuse Strasse in Schloß Holte-Stukenbrock will probably start at the end of 2020.

The city of Schloß Holte-Stukenbrock counts 27,000 inhabitants and belongs to the district of Gütersloh in the north-east of North Rine-Westphalia. It is just 8 km away from the current location of Haimer Microset.

The managing director of Haimer Microset, Olaf Stoffels, reports of big plans: "The final goal of the relocation is to move into a state-of-the-art production and office building, which ensures the further growth of Haimer Microset. Since we doubled both the capacity of the production and the number of employees within the last 5 years, we used up all our space now. To handle further growth an extension is necessary.

We will continue with investments into our products and into the future. The focus will be especially on the expansion of our software department, as the digitization demands are growing further and further. Another very important aspect is the automation, which will be more and more noticeable within the area of tool presetting. We are working on new, innovative concepts in combination with the HAIMER shrinking technology. A growing amount of customers expects the tool set-up processes to be handled in an all-in-one solution. HAIMER offers the advantage of being a single source supplier around the machine tool which is an important customer benefit. We can offer the whole cycle from cutting tools to tool presetting with the HAIMER portfolio as a full system provider."



esides that, there is more space within the new building for the quality inspection of all incoming and outgoing products. Connected to the production halls an office building is planned on four floors. On 2,500 m² there will be enough space for 150 employees, two modular training and conference rooms such as a canteen for the employees, which can also be used as a hospitality area during Open House events. The 260 m² showroom in which all HAIMER

We wish the team of Haimer Microset all the best with the new building and the relocation!

HAIMER INVESTS INTO THE FUTURE

With 18 new apprentices starting in September 2019, HAIMER continued to extend the apprenticeship program in Igenhausen. In a wide range of occupational fields, we offer our over 50 apprentices qualified training in a globally operating company.



Check out the new apprenticeship brochure German language)

HAIMER

BEN UND ER WERDEN

APPRENTICESHIP AT HAIMER

At HAIMER in Igenhausen you can get a vocational qualification in 10 different professions. These are presented individually in our new apprenticeship brochure.

Commercial professions

- Industrial Administrative Clerk (m/f/x)
- Marketing Clerk (m/f/x)
- IT Clerk (m/f/x)
- IT Specialist for System Integration (m/f/x)
- Specialist for Warehouse Logistics (m/w/d)
- **Technical professions** Technical Product Designer (m/f/x)
- Mechatronics Technician (m/f/x)
- Industrial Mechanic (m/f/x)
- Machining Technician (m/f/x)
- Machine and Plant Operator (m/f/x)

OUR APPRENTICES IN SEPTEMBER 2019



WOMEN IN **TECHNICAL PROFESSIONS**

ENA DEMPFLE

Apprentice Machining Technician, 21 years old and in the final year of her apprenticeship program

When and why did you decide to become a Machining Technician?

I previously started an apprenticeship to become a dental assistant, but I did not like it that much. Since my father is an Industrial Mechanic and he sometimes took me along to work on weekends, I decided to learn a technical profession as well.

Was it hard to find an apprenticeship position? Did you apply elsewhere and was your gender a concern?

It was not difficult for me to find an apprenticeship position. In total I wrote seven applications and quickly got four job offers. Only one company had a problem, as they had no bathrooms and changing rooms for women yet. But this company would have been willing to take me on and find a solution as well.

Are you the only woman working in production and in your vocational school class?

No. We have the highest female rate in my class at my vocational school compared to the other classes (3 girls out of 26 students) We are still a few, but we are not the exception anymore.

Why do you think less women choose this profession?

Maybe because they do not have confidence in their own abilities. But Complete my apprenticeship program with good results and continue there is really no reason for that. When I chose my first apprenticeship program, I only searched for "women's jobs". That was a mistake. Later, I found out what fits better to me. with further education, for example attain a mastership in my profession.



Have you ever had the feeling that it would be easier in your job if you were a man?

Sometimes yes. If we move heavy vices for example. Then I think, as a guy I would have set it up on my own.

How did your friends and family react?

They supported me. But they also asked if I was sure I want to do it.

How could more men be convinced to choose typical women's professions?

I think it might be harder for them, because other men could make fun of them. For example, in my first apprenticeship program as a dental assistant, I had a male colleague who experienced that. I think if you want to learn a profession, then you should just go for it. That's what my colleague did.

Because of your gender, did you sometimes get "critical" glances of customers or at vocational school?

No, I have never experienced any of these problems.

What do you wish for the future?

HAIMER PROGRESS



