stamper 2024

The magazine for high-performance stamping technology

BRUDERER

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10 – **HIRSCHMANN FREYUNG** Complex plug-in connectors in a single production step

22 – **INARCA S.p.A.** Constantly striving for perfection

BRUDERER

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The first BRUDERER high-speed stamping press entirely dedicated to high-volume production of small and micro parts.

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BSTL 350–88

BRUDERER high-speed stamping press with fixed stroke

Tool loading area
880 mm

Stroke speed
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max. 1200/min

Press force
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EDITORIAL

Dear readers,

Responding to the current needs of the market by means of innovating and building on strengths that have been built up over decades has long been the path chosen by our family business, and one we will continue to go down as we look to continue our successes in the future.

The current edition of Stamper is dedicated to showing you exactly what this means in detail. You will hear from customers and from our employees about the numerous practical advantages of our stamping presses, and the close collaboration and service packages that customers around the world have come to rely on.

We also have two new products to present which will further improve the performance of our machines. One is the innovative, intuitive B3 control that is already in use on the BSTL, while the other is the newly developed BRUDERER BSP lamination control for the production of lamination stacks, which is currently being tested by customers and should be on the market very soon.

I hope you enjoy reading this magazine and continue to enjoy working with our stamping presses in the future.

Reto Bruderer
CEO BRUDERER AG

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Rainer Hungerbühler

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CASE STUDY

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Inarca S.p.A.

A first in Italy: 50% higher productivity courtesy of the BSA 63

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Rainer Hungerbühler – Vice President Sales and Marketing at BRUDERER.

An avid rower in his spare time, Rainer Hungerbühler studied engineering at the ETH University in Zurich and then SME management at the University of St Gallen. He spent a few years in engineering before switching his career focus to management, sales, marketing and communications. In June 2024, he joined BRUDERER, where he can live out his passion for machinery as head of sales and marketing.

Avid rower flexes his muscles for BRUDERER

Rainer Hungerbühler has been working for BRUDERER since June as Vice President Sales and Marketing. He originally trained as an engineer, and has acquired plenty of sales knowledge internationally over the past few decades. As was the case in his previous positions, he is looking forward to a lot of travel in the future and visiting customers on-site, with family and action-packed sporting adventures on the side for work/life balance.

Family, work and sport are Rainer Hungerbühler's true passions, and what he has built his life around over a number of years. "My family are my number-one priority," says the 55-year-old, who lives in Arbon with his wife Sandra and the youngest of their three sons, a mere five-minute bike-ride from BRUDERER headquarters. He has had a deep connection with the area ever since he was a child. "My grandfather was a founding member of the Arbon Sailing Club and my father had a boat here," he explains. The love of rowing and sailing that his family instilled in him is something that is still as strong as ever, with Rainer regularly out on his boat, the "Treasure," or rowing with one of the club's boats between Arbon and Romanshorn. His previous fascination for paragliding as a young adult is one that he has left behind. "I do have fond memories of what were very exciting times when I actually finished third in the Paragliding World Cup, but at the end of the day, I just didn't have the time for it any more," he adds. "It's not a hobby that you can pick up here or there – you're either all in or all out. And it's also too dangerous for me now!"

Fascinated by machines

Having grown up in nearby Wolfhalden and attended cantonal school in Trogen, Rainer studied engineering at the ETH university in Zurich, swapping the peaceful countryside for the big city. His choice of degree was also influenced by his father and grandfather. "The way machines work has always fascinated me," Rainer says. "My grandfather and my father were engineers themselves and always managed to answer any questions I had – and there were quite a few of them!" Once he had graduated, he began work as a calculation engineer, working on analyses and calculations for highly stressed air defence systems components. He later moved on within the same company to a general management role, continuing with the analysis but also managing a research and development department of ten development engineers. "It was around then that I realised that I needed to do more than just calculations," he recalls. "I was wondering what to do in the future, and began to look around."

Diving into the world of trade

What he found was something that was in the family, with his father-in-law, who owned a trading company which imported in large quantities but was encountering a few challenges in the field of e-commerce. "I implemented a new ERP system and got it up and running including various integrated e-commerce solutions," Rainer explains. He also coordinated the European sales team, carried

out negotiations with European purchasers and expanded into new business fields. “Thanks to my father-in-law, I got to learn about the world of trade and all its intricacies,” he says. The theoretical side of things came from the University of St Gallen, where he studied SME management, and this was the basis of his first posting overseas, with his wife and two very young sons at the time, Luc and Louis, heading off to China.

“The way machines work has always fascinated me.”

Rainer Hungerbühler,
Vice President Sales and Marketing BRUDERER AG

Family life in China

“Our time in China was very tough but so, so interesting – we really enjoyed it,” says Rainer, looking back. Despite the many differences compared with life in Switzerland and the contrasts to life in China, the family adapted very quickly. “My wife studied Chinese at the university at the time while I was often travelling around the country,” he recalls. “As is usual over there, we had a home help who looked after our two sons at the time.” The kids therefore grew up speaking three languages, which often led to some amusing situations. “Our middle son Louis came to Shanghai when he was nine months old. As is often the case at that age, we didn’t always understand what he was trying to say and at the same time, we didn’t even know which language it was meant to be in, which made it a whole lot tougher!”

Rainer Hungerbühler was delighted to get to know the BRUDERER stamping presses in great detail in the assembly department during his settling-in period.

Rowing in Hong Kong

During his time in Asia, the man who has now become the new Vice President Sales & Marketing of BRUDERER got his first experience in that particular sector, managing the sales and service office of a Swiss company with around 100 employees, with locations in Hong Kong and Southern China. "This was a great move for me. China was going through a boom at the time and there was plenty happening in the workshops of the world," Rainer continues. While his family lived in Hong Kong, he was often on the road, working hard and meeting people from all around the world. "At the turn of the millennium, there were a lot of immigrant workers in China, and plenty of people were looking to shake things up and achieve things." As is still the case, he played hard as well as working hard, and his love of sport led him to the colonial past of Hong Kong. "My wife and I wanted to go rowing and went to the Royal Hong Kong Yacht Club, which was the only institution at the time to keep the 'Royal' in its name," he smiles. "Unlike in Switzerland, you couldn't just arrive at the club, you needed to submit a real application. We then had to go through a comprehensive interview in front of a committee which even had an admiral on it." Fortunately they made the grade, and he still looks back fondly at this blast from the past of the colonial era.

"Our time in China was very tough but so, so interesting."

Rainer Hungerbühler,
Vice President Sales & Marketing BRUDERER AG

Learning what makes BRUDERER tick

The global financial crisis at the end of the 2000s meant that it was time for the Hungerbühler family to head back to Switzerland, where their third son Nicolas was born. Rainer had jobs as head of sales and marketing and then sales manager at machine tools firms before joining BRUDERER. "This will allow me to combine my fascination for machines with my sales and marketing expertise," he says, before going on to praise how professional and thorough his new company has been regarding his new responsibilities. "At former employers, I was always very keen to get to know the machines that we were selling but often, that proved not to be possible. At BRUDERER, I'm now getting the opportunity to do just that and really get to know every department." As an engineer, that is of particular importance to Rainer, who spoke animatedly about the weeks he spent in the assembly room, examining every detail of the stamping presses and seeing how BRUDERER achieves its famed levels of precision, and concluding that "we really know all the tricks of the trade here".

Keeping a grip on things: Rainer Hungerbühler has been part of the Arbon Sailing Club since his childhood and often takes their boats for a trip on the lake.

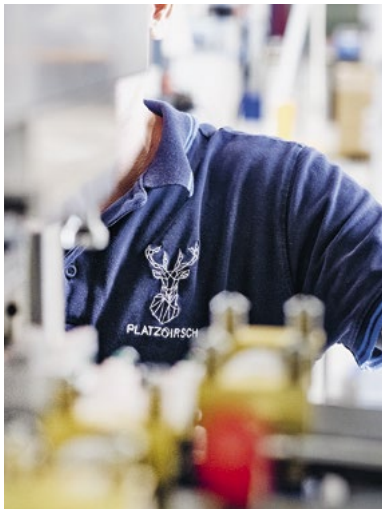
Making history in and out of work

After his settling-in period, Rainer is looking to ensure that BRUDERER can maintain its market position and "extremely positive" reputation. This will involve visiting customers, sales staff and trade fairs all around the world, but in parallel, he is keen to bring the expertise that he has acquired here to Frasnacht to ensure that the company can support the global sales team team in the best way possible. "Salespeople are story-tellers, weaving emotions in with the facts," the new Vice President Sales and Marketing says. "What's important for me is to learn the history of BRUDERER in detail and to continue to write new chapters of it, and that will involve giving the sales team what they need to do their work." He also wants to support his wife and three sons in writing their own history. "I'm very grateful to my wife and sons that they give me the strength I need to do my work and that I have the opportunity to travel abroad a great deal," Rainer says. "I love being part of their hobbies as well though, going on bike tours together for example. And you'll often find us at ice hockey matches, but only when one of the boys is playing!" ■

Hirschmann Automotive Freyung GmbH

The leader in innovative and complex stamping technology

Since Beutlhauser Stanztec GmbH in Freyung was taken over by Hirschmann Automotive GmbH in 2018, various innovations have been implemented that have seen the location undergo significant development. The result is that Hirschmann Automotive Freyung GmbH has become the centre of competence for stamping technology for this global company, using a number of BRUDERER solutions to ensure that the production of stamped parts and entire components is consistently precise and highly efficient.



Hirschmann Automotive Freyung GmbH are proud to lock horns with the competition, as you can see from their employees' clothing.

The Hirschmann Automotive Group currently has around 7,300 employees at seven different locations around the world, with another two in the pipeline. The group's focus is on the development and production of electromechanical components and assemblies for the automotive industry. OEM customers such as BMW, Mercedes-Benz and Tesla and TIER-1 customers including Continental, Sumitomo and Yazaki have come to rely on the various products that this internationally active company manufactures. Their speciality is customer-specific connectors, cable assemblies and sensor systems that are used throughout vehicles. These require various stamped parts, most of which are produced in Freyung. "Our parts can be found almost throughout every aspect of a vehicle," says Dennis Bräutigam, CEO of Hirschmann Automotive Freyung GmbH. "We are the leader in innovative and complex stamping technology."

(l-to-r) Friedrich Hackl, head of production at Hirschmann Automotive Freyung GmbH, Dennis Bräutigam, CEO of Hirschmann Automotive Freyung GmbH, and BRUDERER Area Sales Manager Michael Kummer stay in close contact, to ensure that the BRUDERER stamping presses are exploited to their full potential.

Production speeds that outstrip the competition

Hirschmann Automotive GmbH took over Beutlhauser Stanztec GmbH in 2018 and founded the Hirschmann Automotive Freyung GmbH subsidiary – a move that was an incredibly opportune one if you ask head of production Friedrich Hackl. "This step made it possible to carry out a variety of investments and to modernise the existing technologies," he says. Since then, around €20 million has been invested in new machines and revisions, and the decades-old cooperation with BRUDERER was also ramped up. What stands out in that respect is the development of a solution that was targeted at the production of plug contacts with internal springs. This was brought about in close collaboration with BRUDERER sales representative Michael Kummer, who studied in great detail the actual requirements of the production processes of this particular component. The use of a BRUDERER BSTA 810 in combination with a BSV servo feed and three BSA servo axes has made it possible to produce plug contacts with internal springs in a single step, with a stroke rate of up to 600 per minute, which puts Hirschmann Automotive GmbH well clear of the competition according to Hackl. As is the case for all of the stamping presses at the location, innovative analysis solutions ensure that the quality meets the highest of standards for this process. There is also a testing and validation laboratory at the group's head office in Rankweil, Austria, for all of the tests required – in particular by automotive suppliers.

Training on BRUDERER stamping presses

As a centre of competence for stamping technology, Hirschmann Automotive Freyung GmbH also has its own department for the construction

Bang up to date with revised machines

Hirschmann Automotive Freyung GmbH has around 20 stamping presses with press forces ranging from 25 – 160 tonnes, working in two-shift operation. Friedrich Hackl sees the company's collaboration with BRUDERER as a very positive one, from a number of points of view. As well as the support provided with the development of individual solutions, he is impressed with the performance of the stamping presses themselves and the ability to get even decades-old machines up to the latest in technology via revisions. An example of this is the 'old' BSTA 50 that was fully revised at BRUDERER's Dortmund location, having been operational in Freyung ever since 1978. "After the revision, and despite being in use for all those years already, the press can now carry out virtually all of the tasks required of new machines," Hackl explains. "The high levels of precision, performance and durability are exactly what our company needs."

This BRUDERER stamping press has been in operation since 1978 and has provided over 40 years of reliable performance.

As good as new: this revised BRUDERER BSTA 50 meets all the current needs of Hirschmann Automotive Freyung GmbH.

and production of the tools required for stamping presses. Around 50 people work constantly on developing new tools and enhancing existing ones for a whole host of stamped and bent parts. The company is also helping 11 tool-making trainees take their first steps in the world of work. These youngsters have the chance not only to learn about the construction and building of tools, but also to get to grips with BRUDERER stamping presses. "Our trainees are given appropriate tasks and get hands-on experience of the trade as opposed to merely handling minor jobs," Friedrich says. "Working directly on a BRUDERER stamping press shows them what can be produced using the tools that they manufacture at work." This makes for highly interesting training for future employees, and this is reflected in their motivation levels.

"We are the ideal partner for all customers in the automotive sector."

Dennis Bräutigam
CEO of Hirschmann Automotive Freyung GmbH

Expertise and technology for internal production and contract work

In addition to the production of plug connectors from 0.10 mm to 5.0 mm in thickness and widths of up to 250 mm when running flat for various materials, assembly and welding form a second pillar of Hirschmann Automotive Freyung GmbH's work. This includes the clinching of components, the joining of components with connector elements and the joining of metal with plastic. In terms of welding, standard processes such as laser welding to plug connectors and laser writing are available, as is part machining using special machines. Vibratory finishing provides an effective and economic way of processing metal parts, with almost any surface able to be smoothed, cleaned or deburred, for example, to individual requirements. All services offered by Hirschmann Automotive Freyung GmbH are used by the parent company as well as being available to external partners. "Regardless of the complexity of the stamped parts required and the innovation levels of the technologies that need to be used, we are always fully committed to carrying out tasks based on specific needs," Dennis adds. "Our extensive portfolio and the expertise that we have built up over a number of years makes us the ideal partner for all customers in the automotive sector and beyond." This is further demonstrated by the various certifications that the company has achieved, ranging from ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 to IATF 16949:2016 and right up to TISAX.

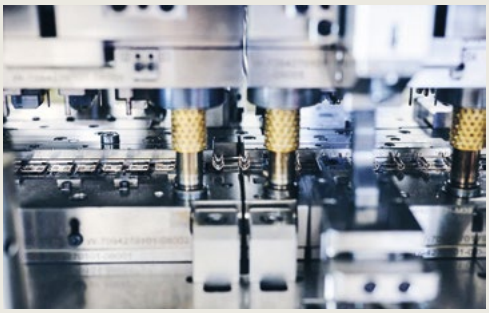
Precision is the name of the game: Michael Kummer and Friedrich Hackl evaluating the performance of a BRUDERER stamping press.

Serious commitment to sustainability

Working with Hirschmann Automotive Freyung GmbH also means benefiting from the company's genuine commitment to sustainability. As of 2022, the group as a whole had reduced its global carbon footprint via various measures to 28%, and production is set to be completely carbon-neutral by 2030. The primary focus in terms of sustainability is on saving energy and lowering CO_2 emissions, and this is achieved by various technical innovations enabling environmentally friendly production and processing. The introduction of new lubrication systems, for example, has reduced oil usage by 70%, while waste management has been optimised, with 92% of waste material being separated and returned for recycling. "Our path to the future is a sustainable one," Dennis says. "Environmental projects certainly require investment, but in the long term, they bring down costs." And this is beneficial, not only to the environment but also to customers of Hirschmann Automotive Freyung GmbH.

TWO BECOMES ONE

Ideal results thanks to constructive cooperation: plug contacts with internal springs can be produced in one step, involving a BRUDERER BSTA 810 in combination with a **BSV servo feed** and three **BSA servo axes.**



Step 1 The material for the plug contacts is stamped and formed as required.

Step 2 The plug contacts have an internal spring added directly in the stamping press.

Step 3 The result is complex components which can be produced incredibly efficiently, at stroke rates of up to 600.

HIRSCHMANN AUTOMOTIVE

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Taking user-friendly **TO THE NEXT LEVEL**

The development and introduction of the B3 control marks the arrival of a new press control generation at BRUDERER. Currently, it is being implemented for use with the new BSTL stamping presses, but over the coming years, it will fully replace the B2 control. As such, it is BRUDERER's solution to meet the needs of today's users and addresses imminent changes in technology which will see current software tools no longer supported.

Intuitive operation was the main priority in the development of the modern B3 control.

The tried and trusted B2 control has been in use for over two decades now, which for BRUDERER meant that it was time to develop it further and to bring a new model onto the market in the form of the B3 control. In an interview, Vice President Technology Laszlo Jud spoke about the background to the evolution, the advantages of the new control and the feedback from test clients and visitors to Blechexpo who have already got to know the B3 control.

Laszlo, what were the reasons behind the evolution of the existing control?

The B2 control is seen throughout the market as being incredibly reliable and having various functionalities which provide optimal support to our customers in terms of productivity. Over recent decades, however, users have changed – they are primarily younger and have a different concept nowadays of what user-friendly means. In this context, we wanted to take all this into account with a new design, with a particular and consistent focus on simplified operation.

To what extent have changes in technology played a role in moving to B3?

They are one of the main reasons for the development of the B3 control. It is a fact that all technologies end up no longer being supported at one time or another, and that is particularly the case for development environments and software tools. This creates security gaps which need to be avoided at all costs for our customers.

What does the simplified operation you mention actually mean in terms of the operations concept?

We have designed the B3 based on the idea of doing exactly what you want within two clicks. This was not the case up until now with the B2 control. Some functionalities were spread out in different places and you had to click through sub-menus and know exactly where to find things. With the development of the B3 control, we've made sure that the functions that belong together really are set out together, so the user can work it out really quickly.

In the future, two clicks should be enough to have access to all the functions you are looking for. What other changes in the display can the user expect?

Our modern control with a touch screen, tiles and just a few buttons can be tailored specifically to individual users. The upper tiles remain the same but the lower ones can be selected and set out according to individual

"With the B3 control, the user can work it out really quickly."

Laszlo Jud, Vice President Technology, BRUDERER AG

needs. Basically, the entire user management is based on roles. Machine setters need different functions from operators. In the future, the functions which are tailored to roles and which are central to that work will be displayed directly.

Remote access via PC, tablet and smartphone has been enabled for B3. Will this make it easier or more efficient in the future to work with BRUDERER stamping presses?
The B3 control is fitted with a built-in internal router which enables remote access via your own network or VPN. The router is a highly rated state-of-the-art product which meets all security standards. External access will allow you for example to input data for new tools regardless of where you are, and it will also make monitoring more flexible. The router will also make support from our customer service department so much easier. Should any issues arise with the control of the stamping presses, they will be able to be identified and rectified much more quickly in the future.

"There was a wow-effect at Blechexpo that we could really feel."

Laszlo Jud, Vice President Technology, BRUDERER AG

The B3 control will initially be used on the new BSTL, while in the medium-to-long term it is intended to replace the B2 control across the board.

The B3 control is initially being used on the new BSTL stamping presses. Which functions does it currently have?
All functions are currently implemented for use on the BSTL, so for a fixed-stroke machine. These include extended functionalities such as envelopes for monitoring all work processes. In the future, there will no longer be a need for other evaluation devices – everything has been integrated. There are also automatic teach-in functions in there already, which work via digital and analogue sensors and are primarily used in tool monitoring. Functions related to the BSV 120L servo feed have already been implemented as well, such as strip thickness measurement. The B3 is also in use on the BRUDERER BSP lamination control that has been launched.

A test client and visitors to Blechexpo have already had the opportunity to get to grips with the new control. How did they react?
Our test customers are very pleased with the BSTL stamping press with the B3 control and feedback has been positive across the board. Then there was a wow-effect at Blechexpo that we could really feel. The B3 control is seen as being a genuine step forward. The operations concept and the visualisation are unique in the world of stamping.

The B3 control is currently set up on BSTL stamping presses. When will it be available to users of the BSTA range?
Over the next one-to-two years, all of the functionalities of the BSTA range, including everything that is customer-specific, will be implemented in the B3 control. In the medium-to-long term, only the B3 control will be used, which includes retrofits on stamping presses that are already in service.

Are you also looking at providing training?
We will definitely have training offers to help our customers get ready to use the B3 control. This is important, since the operational philosophy is markedly different from the B2 and every other product on the market. The barrier to entry is a lot smaller, however, since we have very much focused the development on intuitive operation. Our test clients for example needed a day, no more, to feel completely at home with the B3 control. You obviously still need to have knowledge of stamping theory, but people quickly feel comfortable with the B3 technology because they see similar designs wherever they look. ■

Innovative B3 control design

HOME SCREEN

The **individually adaptable home screen** gives users all the relevant information they need at a glance.

Important machine and operating conditions (reports, mode etc.) always remain visible.

FUNCTIONS

Based on many years of experience, **comprehensive functions** have been developed which can be reached **at the simple touch of a button** from the home screen.

The range of functions contains customer-specific applications as well as machine and technology functions.

MONITORING

The B3 control contains a combination of various innovations, ranging from the **new design** to the **automatic teaching-in** of various monitoring functions such as press force, tool monitoring and **analogue position monitoring** right through to **envelope monitoring** for analogue signals.

SPECIFIC SETTINGS

Every **function** on the B3 control has a **detailed view.**

Specific settings can be undertaken in this view, based on the role of the user who has logged in.

Innovative, customer-friendly and efficient

The new BRUDERER BSP lamination control

The BSP lamination control is BRUDERER's way of meeting the needs of today's stamping companies specialising in the production of lamination stacks. Toolmakers' wishes were also taken into account in the development of the BSP, providing effective solutions going forward to many of the problems encountered in the production of lamination stacks.

Toothbrushes, cordless screwdrivers, food mixers, electric windows and electric motors are among the wide range of products in which lamination stacks provide reliable services. The usages and materials involved are as many and varied as the demands made on the stamping presses, tools and lamination control system required to produce them.

Intensive exchange with customers

Some three years ago, BRUDERER began to develop a lamination control to complement its high-precision stamping presses which are well-known in the industry for their utmost precision. "Our aim was to create an efficient and user-friendly solution which would meet the high demands for quality of our customers," explains project manager Andreas Stahr. To achieve this, BRUDERER went through the needs of lamination stack manufacturers and the tool-makers involved down to the last detail. "Customer visits and exchanges with toolmakers allowed us to identify a wide range of issues and requests, and all of these were incorporated into the lamination control."

Freely programmable rotating stations make it possible to produce lamination stacks in various shapes.

"Customers can also produce the most complex shapes."

Andreas Stahr, BSP project manager, BRUDERER AG

Freely programmable stacks

The BSP is an automation system for various stacking processes, including the clinching process, which currently accounts for the majority of the production of lamination stacks. One of the challenges is the fact that the material used often leads to irregularities. "Up to six freely programmable rotating stations enable these variations to be evened out in both directions and the lamination stacks to be precision-formed according to specifications," Andreas continues. "The tool-making requires these rotating stations to be as flexible as possible, i.e. to rotate over and under. With the BSP, we can offer our customers all sorts of possibilities. They can work freely and produce the most complex shapes."

Newly developed process

Automatic strip thickness measurements also means that the stacks come out, despite any variations in the thickness of the individual sheets, as soon as the required stack height is achieved. The measuring required here is carried out directly in the BSV servo feed, meaning that no additional strip thickness measuring device is required. "The BSV enables us to measure better than with upstream tactile measuring devices. It means that we

Consolidated expertise for BSP network development. The core team: Andreas Stahr (project manager), Basil Lehner (hardware developer), Stefan Brotzge (applications technology), Mathias Vogel (UI designer), Sven Bayer (software engineer), Niklaus Meier (mechanical developer)

can have precision to the nearest micrometre," the project manager explains. The necessary interface is also available for customers who use laser systems for quality control.

Shorter set-up times with BSP

The BSP's rotating stations are an evolution of the BRUDERER BSA servoaxis. As with other aspects of the BSP, a new direction was chosen for the development of the rotating station drives which will reduce wiring work and functions such as hot plug-ins to minimise set-up times for customers. It will also be possible in the future to automate the optimisation of control parameters by transmitting the rotation station's moments of inertia, further increasing the BSP's efficiency.

"The feedback received about our two field test machines has been very positive thus far."

Andreas Stahr, BSP project manager

The motor range currently has three different performance levels. "The functions of the drives are constantly being improved in collaboration with our suppliers," says Stahr, "so we can be confident that we will be in a good position to handle any challenges that the future may present." The continuous evolution that has always been planned for the BSP will very much contribute to this.

Intuitive BSP operation

The BSP has a modular design and can be integrated seamlessly into existing stamping press systems. It is controlled via the screen of the newly developed B3 control which is also being used on the BSTL stamping press. The advantages of the B3 operational concept include an intuitive design which aims at giving users access to the required settings within two clicks, which will have a positive influence on the creation of the programmes required for stacking. As is the case with the B3 control, the BSP will also be at the forefront of technology, with replacement parts available for a number of years to come. "We have a network of trusted suppliers whose components we have come to rely on," says Andreas. BRUDERER also

Overview of BSP functions

- Sliding control for a maximum of **32 freely programmable pneumatic sliders**
- **Conveyor belt control** for up to **six conveyor belts**
- **Tool monitoring** of a maximum of **16 channels**
- Control of a maximum of **six freely programmable rotating stations**
- **Position monitoring** for a maximum of **eight channels** with envelope monitoring
- **Inductive and tactile strip thickness measurement** including stack height adjustment
- Freely programmable **sliding and rotating station control for one to eight programmes**

has the necessary expertise in-house when it comes to lamination stacks, meaning that the BSP will give customers a system that they can use well into the future.

Comprehensive product services

With the official sales launch of the BSP, BRUDERER is offering additional services related to the product. The applications technology department will support customers going forward in devising the most efficient manufacturing processes for lamination stacks and unlocking previously untapped potential. “The feedback received about our two field test machines and the associated services has been very positive thus far,” a delighted Andreas says. “Customers particular appreciate the fact that they have been an integral part of the evolution with us, which means that we can always provide them with a tailored solution with individual added value, even for complex stacking tasks.” As always, the aim is to provide a perfect match. ■

Intuitive BSP operation via the new B3-control

SIMPLE PROGRAMMING

Based on feedback from field test customers, the programming system has been designed to be clear and intuitive. It is the central control station of the lamination control.

ROTATING STATION CONFIGURATION

Operating the BRUDERER servo axes has been optimised and adapted to the needs of the lamination control, making it simple to set up tools.

STRIP THICKNESS MEASURING SYSTEM

The measuring points in the measuring system can be centrally configured and analysed individually, providing precision to the nearest micrometre.

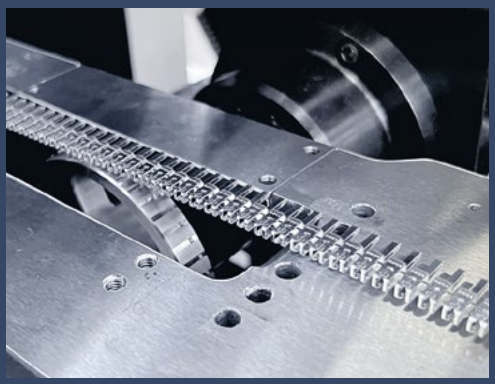
60 years of commitment, not only to products but to solutions

Italian family-run business Inarca S.p.A. is celebrating its 60th anniversary in 2024, and many of those years have been spent working hand-in-hand with BRUDERER. Inarca S.p.A. was the first company in Italy where BRUDERER servo axis technology was used, increasing productivity for certain products by up to 50%. Tailored solutions involving innovative approaches are set to shape the company's future.

Inarca S.p.A. has been developing and producing clamps, plug connectors, connection technologies and machines for electrical connections since 1964. At the outset, Gianni Piovesan – founder, president and CEO – focused on a hand-held tool for clamping, and this was followed by the production of metal clamps. The stamping machines used at the time included feeds, pneumatic clutches and hydraulic variators which Gianni designed and produced himself at the company. The high quality of BRUDERER stamping presses caught the eye of the Inarca S.p.A. CEO as early as the 1970s, however, with the company acquiring its first brand new BRUDERER BSTA 25H in 1978. "The BRUDERER sales representative at the time, Mario Zandrini, used to travel around Italy with a stamping press in his delivery vehicle, so that was our first contact with the machine – and the connection is still there to this day," explains Jacopo Rocchi, Machine Shop Manager at Inarca S.p.A. and grandson of the company's founder.

Concrete solutions as opposed to just products

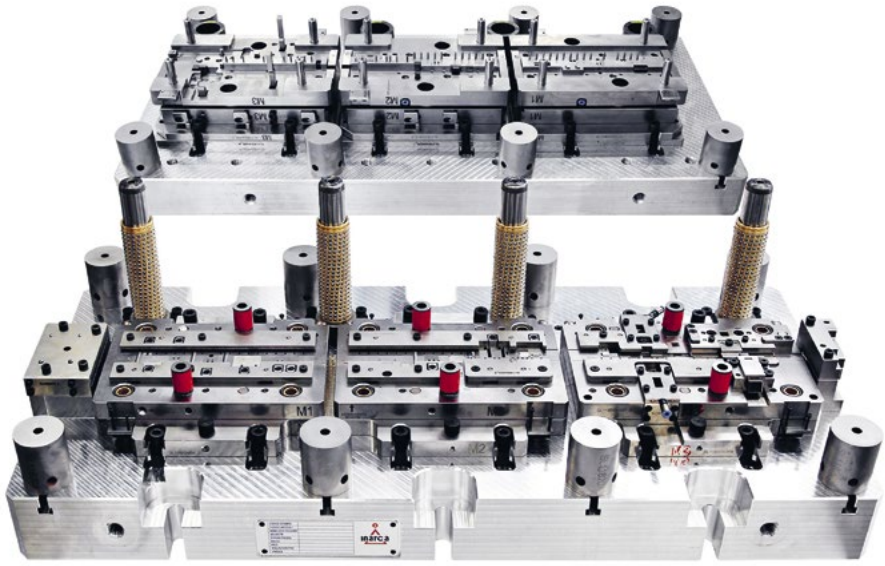
The history of the company is marked by a spirit of innovation and constant development. In 1979 for example, Inarca S.p.A. added plastic fasteners to their portfolio, before introducing cold-crimping clamps and the INAR SPLICE machine for crimping magnetic wire 1983, and have been using INAR-IDC (insulation displacement connections) for magnetic wire since 1995. In 2019, the company introduced a new line of IDC clamps with press fit pins. "Throughout the years, we have invested around 10% of our turnover in new products and technologies," Jacopo says. "We continuously innovate with all of our processes, and as such we can guarantee the quality of our products and the growth of our technical expertise." The company's overriding aim is to recognise the needs of customers and find answers for them. This involves constant dialogue, for example to identify special usages and trends, to ensure that customers are offered not just products but concrete solutions, every time.



Inarca S.p.A. works with no fewer than 19 BRUDERER stamping presses.

"If we want to manufacture products to the highest level, we need to use the latest in technology in our stamping department."

Gianni Piovesan, President and founder, Inarca S.p.A.



Always striving for perfection – be it in tooling or production.

Stamped parts for Italy and the world

The company currently uses a total of 19 stamping presses, all of them from BRUDERER. They can be found at the 18,500 m² production site in Vigodarzere near Padua, which is also home to Inarca S.p.A.'s head office. Every year, some 1.5 billion terminals and 350 million plug connectors are produced. Connecting clamps, combining IDC and press fit technology, are one of the firm's specialities, and they enable customers' production lines to be highly automated and provide a higher level of reliability in terms of quality of connection compared with soldering solutions. The firm's customers can be found in various sectors, including automotive and motor manufacturers as well as producers of household appliances, and heating, ventilation and cooling solutions-providers. Around half of these companies are Italian, but there are plenty of customers from across Europe, Asia and the Americas who have come to rely on the products and services provided by this family-run business.

Proud to lead the way in Italy

There are many reasons for Inarca S.p.A.'s success, and according to Gianni, BRUDERER has had a critical influence. "If we want to manufacture products to the highest level, we need to use the latest in technology in our stamping department. BRUDERER stamping presses can reach very high speeds without affecting the quality of our products," he says. He sees the main advantages of BRUDERER stamping presses as the automatic ram height adjustment with static and dynamic correction during use, which can be recorded for each tool, the electronic feeds and the user-friendly interfaces which provide simple control when fine-tuning the stamping and pressing processes. The productivity of the company's stamping department, which has 14 employees working in two shifts, is supported by the high levels of automation which enable each user to work in parallel on three stamping presses at a time. Another advantage is the BSA 63 servo axis, which was acquired at the same time as a new BRUDERER BSTA 410 in autumn 2023. "Servo axis technology is highly significant when it comes to optimising speeds, and this has enabled us to achieve a significant increase in productivity of around 50%," Gianni explains. "This is an important step in our constant striving for operational improvements whilst still guaranteeing the utmost in quality and precision." Inarca S.p.A. was particularly proud to be the first company in Italy to use the BRUDERER servo axis.

Overcoming challenges and increasing production

Inarca S.p.A. also managed to use foresight, quality and flexibility to thrive during the COVID-19 pandemic, which made production very challenging in 2021 according to Jacopo. The family-run business was able to deliver to customers who had been turned down by competitors due to bottlenecks in materials. Franca Vettore, the wife of the Inarca S.p.A. founder and who also works at the company, chose at an early stage to buy and store raw materials before waiting periods exploded due to high demand. "This foresight, along with the incredible levels of reliability and speed of the BRUDERER stamping presses and the experience

of our employees, enabled us to increase our production by 60% compared with previous years without having to make any investments", Jacopo explains. "It meant that we were able to meet the needs of all of our customers in much shorter timeframes that our competitors."

Perfection is the goal

Striving for perfection is the hallmark of every aspect of Inarca S.p.A's work, with the company's 11-strong technical department concentrating not only on product design but also on tool and feed design. One of the things that it develops and builds is ultra-modern modular tools, specially tailored to precision cutting and bending and which are designed to make work easier in the stamping department. "Our most demanding construction project in the past two years was the standardisation of our progressive and shaping tools", Gianni explains. "This project means that we can reduce both the construction and manufacturing phases and the time to market of our press fit clamps." Inarca S.p.A.'s high levels of quality can be seen in the company's various certifications, with ISO 14001:2015, ISO 9001:2015, ISO 45001:2018 and IATF 16949:2016 achieved, and SA 8000 currently in progress. ■

Magnetic wire clamps in various formats are one of Inarca S.p.A's specialities.

PRODUCTS

Inarca S.p.A produces 1.5 billion terminals and 350 million connectors every year for automotive and motor manufacturers as well as producers of household appliances, and heating, ventilation and cooling solutions.

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(l-to-r): The work of Stefan Brotzge, Cornel Bollhalder and Luca Romano provides customers with the answers they need to a variety of questions.

Applications technology: one department, plenty of customer advantages

BRUDERER stamping presses impress customers around the world with their quality and efficiency. To ensure that the machines are tailored as closely as possible to individual needs and can be developed to suit practical usage, BRUDERER has an applications technology department with a very expansive remit.

Luca Romano works alongside Stefan Brotzge and Cornel Bollhalder in the applications technology department, performing a wide variety of tasks to ensure that BRUDERER stamping presses meet every demand that their customers may have, and that they are exploited to their full potential. The value of applications technology can be seen in the high levels of personalisation of the BRUDERER stamping presses, with hardly any of the machines running in their standard format.

The right specifications for stamping presses

As soon as the sales process is under way, important questions are asked – and answered – by the applications technology department, who support sales staff in technical matters and in the selection of the right specifications for the stamping presses, which are always adapted to individual custom-

Luca Romano,
applications technology

"I'm convinced that many of our customers could benefit from working with BRUDERER applications technology, to get the best result from all the process stages in the combination of stamping tool with stamping press and strip feed."

er demands. One of the advantages here is that both Luca and Stefan worked as toolmakers in previous jobs and used BRUDERER stamping presses themselves. "This means I now know both sides," Luca says, "so I can examine the process in a much more comprehensive and holistic way." This comes to the fore when designing stamping lines according to a customer's specific needs, analysing problems and optimising processes, for example.

On-site process optimisation for customers

Travelling to visit customers in Switzerland and abroad is an important part of the applications technology department's work. On site, they carry out process analyses, with Luca, Stefan and Cornel providing support when it comes to identifying and solving further issues. Many customers appreciate an outside view, which often throws up factors which had not previously been considered. "Customers often pay too little attention to the overall system and focus too much on the tool," Luca explains. "Our experience of internal readings and customer projects mean that we have a broad knowledge base to support them with." This often leads to significant increases in productivity, for example through the optimisation of tools or via servo-axes, which are increasingly being integrated into processes.

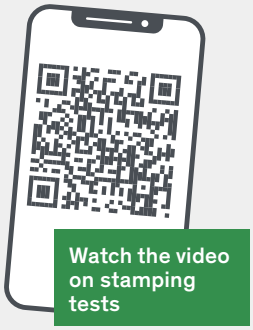
Stamping tests under production conditions

For customers to experience what kind of performance their BRUDERER stamping press is capable of before they buy it, stamping tests are part of the purchasing process. This gives them the chance to try out the machines with their own tools under production conditions. Stamping tests create a certain amount of work both for BRUDERER and for the customer, but in terms of productivity, they deliver important practical results. "A European electronics firm were looking to replace their existing stamping presses," says Luca, citing one of many examples from his everyday work. "We went through stamping tests with them, and our technology enabled us to increase productivity by between 35% and 70%." Customers looking

to carry out a stamping test are asked to put in a request with their assigned member of the sales staff. The applications technology department then ascertain whether the company already has a suitable stamping line in house, or whether there is one available for use at a partner company or with a customer. Stamping presses are sometimes used at universities, which are made available by BRUDERER for research purposes.

Targeted development and evolution of machines

The scope of tasks carried out by the applications technology department also covers BRUDERER evolutions, with current examples including the BSTL stamping presses and B3 control. As former stamping press operators, Luca, Stefan and Cornel have first-hand experience of what the needs and process workflows of users look like, and they put this knowledge to good use. In addition, they are involved in the improvement of existing products. This includes intensive testing of new components before they are built into serial products. "To guarantee function capability, we use our trusted internal standards, based on which we then expose new bearings to continuous load, for example, or test out clutch discs," Luca explains. It is clear to see the extent of how the applications technology department is ensuring that BRUDERER stamping presses continue to be the benchmark for the ultimate in quality, precision and efficiency in the future. ■



Contact

Our customer service department is happy to hear your questions and concerns.
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First BSTL in Asia an unqualified success

Back when he was studying to be an engineer, Jeffrey Chan was already looking forward to using BRUDERER stamping presses in his father's company. Demanding customer requirements meant that he was able to implement a first BSTA stamping press at Poly-Best (H.K.) Limited. The China-based company now has five BRUDERER stamping presses, and is the first in Asia to use the latest BRUDERER model, the BSTL 350-88 B3.

The history of Poly-Best (H.K.) Limited is one of continuous growth. It was founded at the end of the 1980s by Kam Shing Chan, and still has its headquarters in Hong Kong. The production location was moved in 1994 to Shenzhen, in Guangdong Province, where the company opened a modern factory covering some 10,000 m² in 2021. Around 80 employees work there, producing various stamped parts for the automotive industry and work on the development and manufacture of tools for a total of 60 stamping presses. "Building on my father's considerable expertise in mould construction and many years of hard work, Poly-Best (H.K.) Limited has grown to become a globally recognised company and a partner for many customers in the motoring supply chain," said CEO Jeffrey Chan. "Many of our customers are fulsome in their praise of our products, because we fulfil the stringent demands of the automotive industry when it comes to product quality and stability across the board."

Professionalism for highest standards

The fact that Poly-Best (H.K.) Limited stamped parts have built up a reputation all around the world and that the company has been able to set itself apart from the competition is also down to the use of BRUDERER stamping presses. Around 15 years ago, Jeffrey Chan first came into contact with the brand and its many advantages as part of his engineering studies. "We had the opportunity to visit the BRUDERER office in Singapore and to get to know the team," he explains. From that point onwards, it was his ambition to have a BRUDERER stamping press in his family business. So when a customer required stamped parts that corresponded to the European benchmark, Jeffrey got in touch with BRUDERER's GM for China, Xueliang Yu and purchased their first BSTA 200 stamping press. This new machine provided high levels of precision and efficiency at a competitive price, and Jeffrey was also impressed by the excellent service that is part of the BRUDERER DNA. "I've always believed that professional matters need to be entrusted to experts if you are to expect professionalism and reliable high quality," he says, "and the BRUDERER team absolutely confirmed by belief."

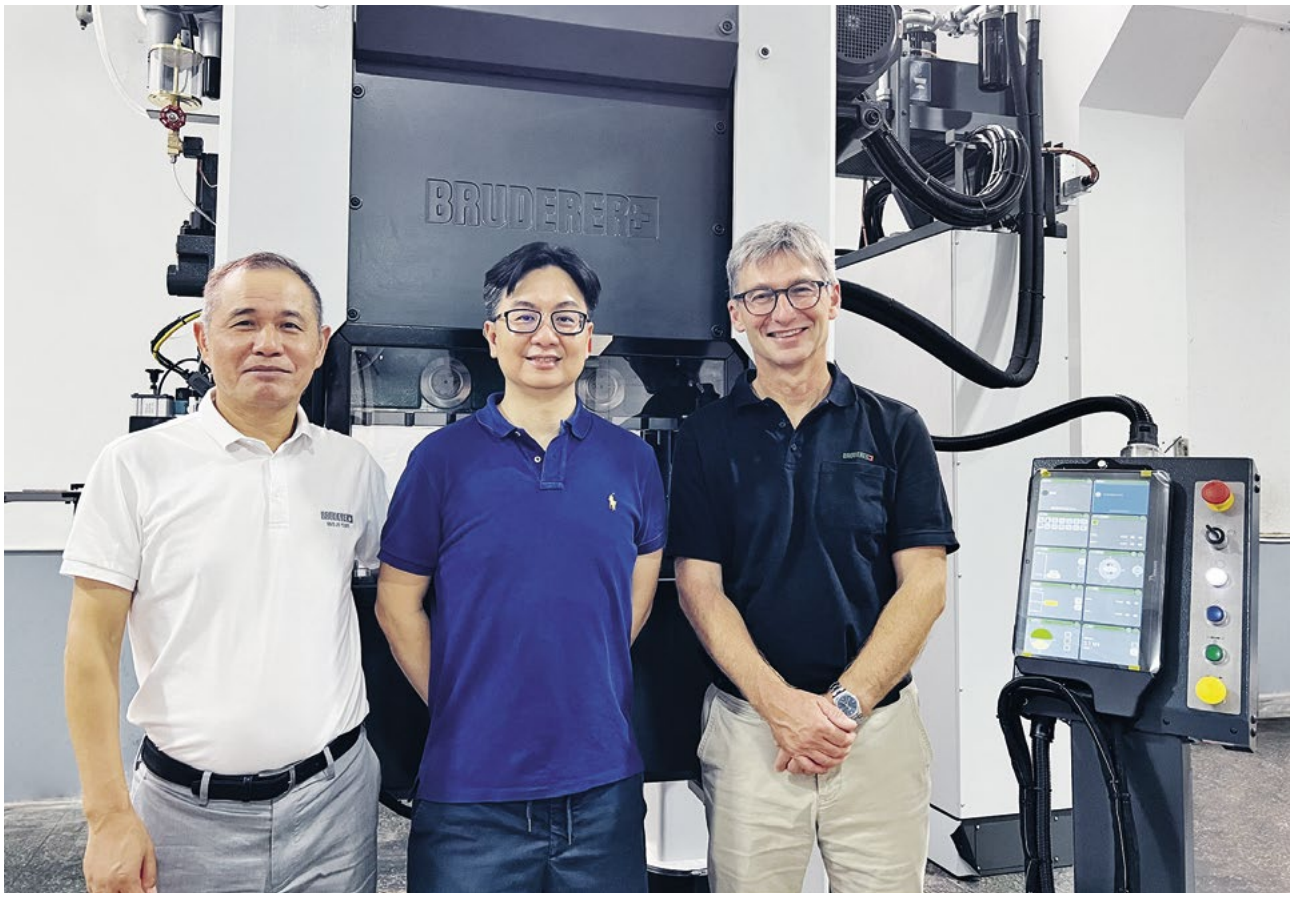
"There are times when delivering products on time can actually be just as important as quality for us."

Jeffrey Chan, CEO, Poly-Best (H.K.) Limited

Quality and supply guarantees for customers

One of the most important competitive advantages for Poly-Best (H.K.) Limited is the volumes and costs of the one billion or so stamped parts that they produce every year, in material thicknesses of between 0.05 mm and 5 mm. The press capacities of the stamping presses used range from 8

Launch of the BSTL 350-88 B3 at the Blechexpo Stuttgart: (l-to-r) A. Fischer, BRUDERER, J. Chan and S. Chan-Kong Poly-Best (H.K.) Limited, R. Bruderer and X. Yu, both BRUDERER



Commissioning of the second BSTL 350-88 B3: (l-to-r) Xueliang Yu, MD of Great China of BRUDERER, Jeffrey Chan, CEO of Poly-Best (H.K.) Limited, Rainer Hungerbühler, Vice President Sales and Marketing of BRUDERER

to 500 tonnes, while the maximum length of the clamping plate is around three metres. The majority of Poly-Best (H.K.) Limited's products are manufactured on high-speed stamping presses, with the BRUDERER machine providing not only a genuine guarantee of quality for customers, but also contributing to the durability of the tools and the avoidance of production stoppages due to its unique design. "The reduced amounts of tool repairs mean that we benefit from lower costs and can also reduce supply times thanks to having stable and continuous production, which also helps us to plan deliveries," Jeffrey explains. "There are times when delivering products on time can actually be just as important as quality for us." The high-precision dynamic ram depth control, which automatically adapts to changes in processes during operation, guarantees consistent quality in production across the entire spectrum. Combined with the compact, high-performance brake-coupling system, BRUDERER stamping presses ensure that products can be manufactured at the highest level from the first to the last stroke.

Investing in new BRUDERER stamping presses

In addition to having a BSTA 200, a BSTA 250 and a BSTA 280, in spring 2024 Poly-Best (H.K.) Limited became the first company in Asia to have a newly-developed BSTL 350-88, with a second of these presses acquired in August. "In the current market environment, ordering two BRUDERER stamping presses was a brave decision on our part," Jeffrey says. "Although acquiring the stamping presses entailed significant costs at the outset, I was confident that it was the right decision." Faith of this kind in the BRUDERER brand does not come from a gut feeling, but from concrete experience. "Using BRUDERER stamping presses over the years, we have clearly come to see that tool wear and maintenance costs are far lower with BRUDERER than with other brands for the production of the same number of stamped parts."

Intuitive operation makes BSTL user-friendly

For Jeffrey, the BSTL 350-88 is an unqualified success. As a fixed-stroke stamping press with a choice of four different strokes and a clamping plate surface of 870 mm × 536 mm, it may be less flexible than other BRUDERER models, but it is the ideal solution for more simple components in higher volumes. Young employees in particular have also been very impressed with the new B3 control. "Completely new operation methods always present somewhat of a challenge, but BRUDERER service helped us with installation and training," said

Jeffrey. “The fact that there were only five days between the machine being set-up and being operational really made an impression on me.” Some older members of staff were reticent to begin with due to the completely new design, but the intuitive set-up of the B3 control and the implementation of a Chinese interface soon had them back in the groove.

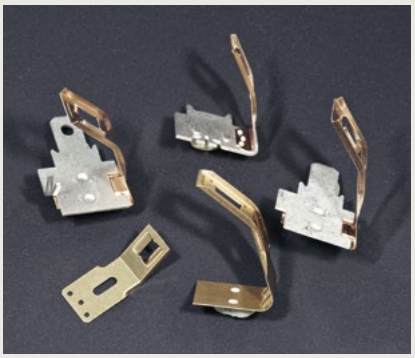
“The fact that there were only five days between the machine being set-up and being operational really made an impression on me.”

Jeffrey Chan, CEO, Poly-Best (H.K.) Limited

Outstanding performance thanks to flexibility and expertise

In addition to continuous investments in new technologies, Poly-Best (H.K.) Limited are going to stick with their tried and trusted formula of working in close cooperation with their customers to provide competitive, needs-driven production, relying on the many years of expertise within the teams and the high degree of flexibility that the family business has always shown. “The fact that we can be flexible when it comes to adapting our business strategy to the needs of the market is one of our main advantages,” Jeffrey explains. As such, there has been a recent increase in investment in inspection systems, to achieve the highest possible level of production, with expanded internal training. External certifications have also been updated, and the company now has ISO 9001:2015, IATF 16949:2016 and VDA 6.3 certification. Jeffrey is convinced that main decision-makers in a family business have a decisive influence on that company’s culture. His passion for construction machinery and Formula 1 motor racing and his desire to go beyond his limits have a direct influence on the management team and where Poly-Best (H.K.) Limited’s focuses lie. “Striving for outstanding performance is something that I integrate into my daily work,” the CEO says, “and this was one of the reasons why our performance did not dip after the testing times that we had during the COVID-19 pandemic, and that our customers ended up having even more faith in us.” This is something that the company will be looking to build on to ensure its future success and continue to deliver a wide variety of stamped parts to customers all around the world. ■

MAXIMUM PRECISION MEETS SPEED



Poly-Best (H.K.) Limited produces around one billion stamped parts per year for customers in the electric motor industries. The company relies on five BRUDERER stamping presses for this purpose.

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