IMPULSE

MAPAL TECHNOLOGY MAGAZINE | EDITION 86

Coverstory:

COMPLEX AIRCRAFT COMPONENT FOR MAXIMUM PERFORMANCE

MAPAL IN MOTION

Dear business partners,
dear readers,

at MAPAL, we see changes as responses to the needs of our markets and our customers rather than as an end in themselves. That is why our goal, that we actively pursue with every change, is clear: We are creating the conditions to get even closer to your needs and provide you with even more targeted support.

Our new organisation and legal structure in Germany is a vital step in this direction. Merging our German locations helps us operate in a way that is quicker, more efficient, and above all, more customer-oriented. We have been following this path consistently for some years now. Testament to this is the further development of our Global Organization for Assembly (GOA), which is now even more closely intertwined with our global aerospace clients than ever.

The GOA also underlines the great importance of aerospace for the MAPAL Group. Even if the market requirements and procedures of the aerospace industry in part vary to a great extent from the automotive industry, we are consciously drawing on a tried-and-tested principle: We are developing a deep and detailed understanding of applications, processes and you, our customers, we develop perfectly tailored solutions and closely assist you with during implementation. Taking this holistic approach for us is crucial for success.

We are also continually developing our portfolio. In addition to innovative tools – some of which we present to you in this edition of IMPULSE – we have taken our service portfolio to a whole new level, now offering comprehensive turnkey solutions. What does this mean for you? We take full responsibility for planning, implementing and optimising your manufacturing projects, guaranteeing quality, cycle time and costs. This is how we create efficiency and quantifiable added value.

All these changes share a common goal: to strengthen the foundation for successful dialogue and trust-based cooperation. After all, innovation thrives on collaboration.

In this spirit, we look forward to the opportunity for further dialogue at trade shows, events, or on your premises. Let's move things forward together.

Yours,

Dr Jochen Kress

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Editorial Team: Oliver Munz (Responsible according to the German Press Law), Mathias Ostertag, Kathrin Rehor, Manfred Flohr
Layout: Alexander Rückle

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P.O. Box 1520 | D-73405 Aalen
Phone +49 7361 585-0
info@mapal.com | https://mapal.com

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MAPAL continues realignment in Germany

MERGER OF THE GERMAN COMPANIES STRENGTHENS EFFICIENCY AND CUSTOMER PROXIMITY

Aalen

The MAPAL Group is consistently driving forward the strategic realignment of its organisation in Germany. Following the change of legal structure of the company headquarters to MAPAL Dr. Kress SE & Co. KG in June 2025 and the realignment of the corporate group as a process-driven organisation, MAPAL is now taking the next significant step: On 1 May 2026, the German companies of the MAPAL Group will be legally merged into MAPAL Dr. Kress SE & Co. KG.

SUSTAINABLE STRENGTHENING OF THE ORGANISATION

With this measure, MAPAL is bundling its structures in Germany and creating the basis for standardised processes, clear responsibilities and more efficient workflows. The process-driven organisational structure introduced in 2025 forms the foundation for the subsequent legal consolidation. The aim is to further streamline cooperation with customers and partners while at the same time strengthening the organisation's performance in the long term.

"The merger is a logical next step in the transformation of our family business," emphasises Dr Jochen Kress, President of MAPAL Dr. Kress SE & Co. KG. "We have consistently aligned our internal processes with the requirements of our customers. The legal merger now creates the necessary clarity and efficiency to provide optimum structural support for this alignment: We reduce organisational complexity and at the same time increase our speed of response with the aim of meeting our customers' requirements even better."

LOCATIONS REMAIN IN PLACE

As part of the realignment, the German companies MAPAL WWS, MAPAL ITS, Miller, August Beck, Weisskopf Werkzeuge and WTE Präzisionstechnik are merging with the corporate headquarters MAPAL Dr. Kress SE & Co. KG. All locations will remain as production plants with their respective product portfolios, thus ensuring continuity in production, expertise and customer proximity.

Customers, suppliers and partners will benefit from the realignment: one central contractual partner, harmonised processes and simplified communication - without compromising on the personal support or technical expertise that MAPAL has stood for for decades. Existing contracts and agreements will remain unchanged and will be transferred to MAPAL Dr. Kress SE & Co. KG as part of the universal succession.

"All of our organisational development measures follow a clear guideline," emphasises Dr Kress. "We invest in structures, processes and employees in a targeted manner in order to make MAPAL competitive in the long term - as an independent family business with an international focus." ■


Winterlingen

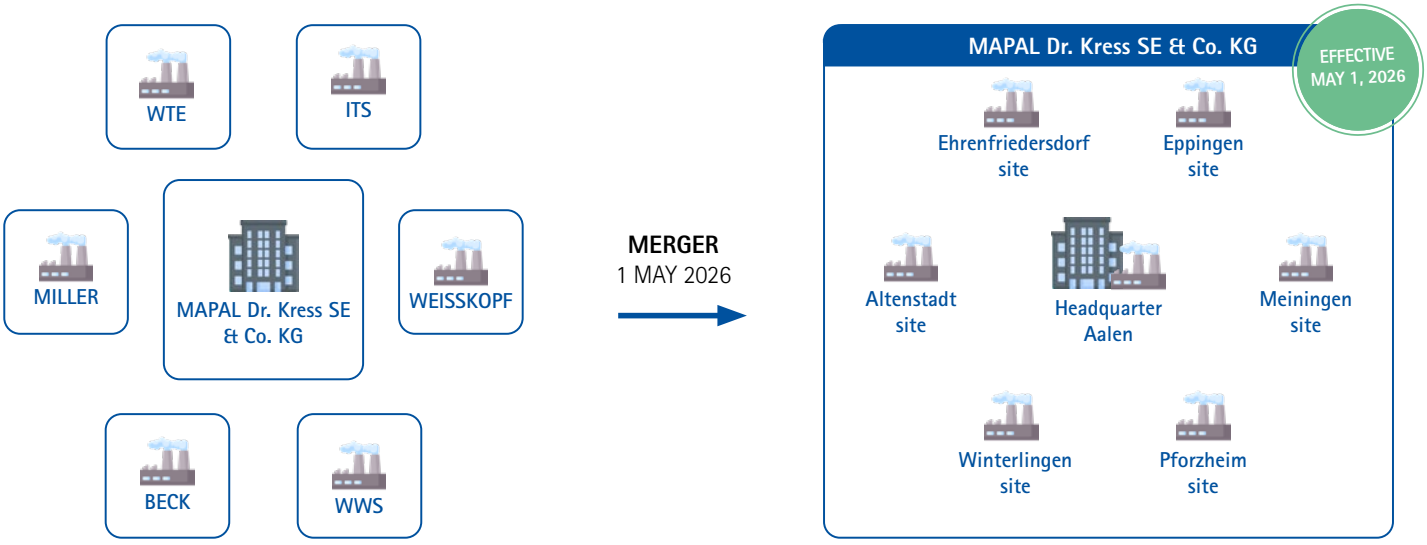
Altenstadt


Ehrenfriedersdorf


Eppingen


Meiningen


Pforzheim



MAPAL in China – Local expertise and global standards

PRECISION AND INNOVATION FOR A DYNAMIC MARKET

Since its founding in 2003, MAPAL in China has developed into a key part of the MAPAL Group's global network. With a strong base in Shanghai, the company provides high-precision tooling solutions and services tailored for the demands of the local market.

By being locally present, MAPAL ensures fast response times, customised support and smooth coordination for customers in mainland China and supports Chinese customers when they expand internationally. MAPAL operates three production sites dedicated to serving customers in mainland China: two plants in Shanghai and one in Tainan, Taiwan. This regional presence guarantees flexibility and proximity to the market.

SUPPORTING CUSTOMERS ACROSS INDUSTRIES

From the automotive and aerospace sectors to general machining, MAPAL supports manufacturers in mainland China with reliable, high-precision tools and services. In addition to the production, sale and service of tools, MAPAL also offers tool management and re-tooling services, comprehensive project support and tool lifecycle management – helping customers extend tool life, optimize productivity, and reduce operating costs.

Producing locally to keep delivery times short is a main focus of MAPAL's international operations network. Tool groups produced locally for the Chinese market include solid carbide tools, PCD tools, PCD/PcBN inserts and blades, guide pad tools and tools with indexable inserts. This approach has earned MAPAL the trust of many well-known companies operating in China, including numerous international OEMs and Tier 1 suppliers.

REGIONAL PRESENCE AND FACILITIES FOR LOCAL CUSTOMERS

MAPAL is widely represented across China, with headquarters in Shanghai and 17 branches in all major industrial regions.

After-sales service provides a 24/7 technical support to end customers and OEMs.

To serve customers even better, MAPAL offers specialised facilities:

- **Aerospace Test Centre:**
  The aerospace test centre in Shanghai is fully compliant with industry 4.0 standards for green and safe manufacturing. The centre is equipped with an ADU (Automatic Drilling Unit) test workstation, explosion-proof devices, and an industrial vacuum system and therefore ideally suited for the requirements of the aerospace industry.
- **Demonstration Cutting Room:**
  A demonstration cutting room is available to test customers' tools under real conditions.
- **Tool reconditioning:**
  Professional reconditioning services in manufacturer quality significantly reduce tool costs. 17 local service centres ensure shortest reaction times.

STRONG TECHNICAL SUPPORT, PROJECT AND PRODUCT EXPERTISE

MAPAL in China's work is based on three pillars:

- Comprehensive project support – from planning to implementation: The large TET team handles 100 percent of the engineering projects for the Chinese market.
- Tool management and re-tooling;
- Custom tooling solutions adapted to specific customer requirements.

MAPAL offers specialised actuating tools manufactured in Germany for machining engine cylinder blocks and heads, widely used by major powertrain manufacturers in China. Another key focus is on guide pad reamers from Germany, designed to solve machining challenges with high precision requirements.

COMBINING GLOBAL EXPERIENCE WITH LOCAL INSIGHT

With deep technical know-how and access to global resources, the application of global standards and an understanding of market needs in mainland China, MAPAL supports customers in mastering complex production challenges. The team also contributes to forward-looking developments in areas such as e-mobility, lightweight construction, and process automation.

As the Chinese industry continues to evolve, MAPAL is committed to growing with its customers – offering consistency, innovation, and high-quality local support. ■

MAPAL in China

Founded: 2003
Sales location in Shanghai

Production plants in Shanghai (2) and Tainan (1)

17 Sales and service branches
in major industrial regions

Employees: ~480

MAPAL AT TRADE FAIRS AND EVENTS 2026

Whether in large exhibition halls, at open house events or at specialist conferences - dialogue and direct contact with customers have always been at the heart of what MAPAL does.

The MAPAL team is looking forward to presenting the latest products and solutions for the machining process and exploring specific customer needs there.

The event calendar is updated regularly and can be found on the MAPAL website at mapal.com/events.

13.04. – 17.04.2026	**SIMTOS**	Seoul, South Korea
14.04. – 16.04.2026	**AERODEF**	Boston, USA
20.04. – 24.04.2026	**MACH**	Birmingham, Great Britain
21.04. – 24.04.2026	**SIAMS**	Moutier, Switzerland
11.05. – 12.05.2026	**MMTS**	Montreal, Canada
19.05. – 22.05.2026	**ELMIA Machine Tools**	Jönköping, Sweden
15.09. – 19.09.2026	**AMB**	Stuttgart, Germany
13.10. – 15.10.2026	**SIANE**	Toulouse, France
20.10. – 23.10.2026	**MERCOPAR**	Caxias do Sul, Brasil
18.11. – 21.11.2026	**METALEX**	Bangkok, Thailand
14.12. – 15.12.2026	**Aviation Forum**	Munich, Germany

In-house exhibitions, customer events, conferences and symposia

21.04. – 24.04.2026	**HERMLE In-house exhibition**	Gosheim, Germany
21.04. – 23.04.2026	**CHIRON GROUP Open House**	Tuttlingen, Germany
22.04.2026	**mav Innovation Forum**	Böblingen, Germany
06.05.2026	**MAPAL Technology Day Thuringia**	Schmalkalden, Germany
21.05.2026	**MAPAL Technology Day North**	Hanover, Germany
18.06. – 19.06.2026	**Berliner Runde**	Berlin, Germany

Interview: Growth market aerospace industry

EFFICIENT TOOLS AND PROCESS SOLUTIONS FOR THE RAMP-UP OF AIRCRAFT PRODUCTION

Laurent Benezech (Global Head of Segment Management Aerospace & Composites) and Frédéric Estrat (Global Key Account Manager Airbus and Sales Director MAPAL France) report in the interview why the aerospace industry is a perfect fit for MAPAL and how the company is positioning itself as a global process partner. The subsidiary in France has a pioneering role: the experience gained there serves as a proof of concept for the global rollout of the strategy.

What is MAPAL's strategic focus in the aerospace industry?

Laurent Benezech: In terms of sales, MAPAL still has a large focus on the automotive industry but is significantly expanding its presence in the global aerospace industry. The strategy is based on process-based solutions for final assembly and part machining. The Global Organisation for Assembly is responsible for final assembly activities, while in part machining we work with Generic Components for pattern-based reference processes. MAPAL France was a pioneer within the company group for the aerospace industry. The experience and structures gained there are scaled across the group.

What makes the French example special?

Frédéric Estrat: Certainly our twenty years of experience in working with the aerospace industry, including as a Rank 1 supplier to Airbus. To put this in perspective: In France, we currently generate almost half of our turnover in the aerospace sector. France is the pilot market for Final Assembly: this is where we pool testing and production capacities and transfer methods and standards to other regions. In this way, we create speed in validation and predictability in rollout.

How do MAPAL's competences in the aerospace industry compare to automotive? How quickly can you provide a new tool?

Benezech: We see ourselves at an equally leading level here: We offer our customers a complete process including the entire tool layout. We produce the tools ourselves and have the capacity and skills to regrind or optimise them within a very short time – and this expertise is available in all the important markets. The aerospace industry needs fast response times with regard to test

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tools and quick optimisation cycles. With our setup we could reduce lead times of test tools down to two weeks for uncoated versions and three weeks for coated tools. Testing can be carried out either directly at the customer's premises or at our test centre here in France. On the other hand, traditional validation takes quite a long time before the products are finally adopted to production. This is a significant difference to the automotive industry, where process optimisations are included seamlessly in production. We have aligned our organisation accordingly: rapid provision of test tools combined with the ability to support validations worldwide.

How do you assess the market development in general?

Estrat: When people talk about the aerospace market, they usually mean the number of aeroplanes sold or the number of passengers. The potential market for cutting tools is very different. By way of comparison, when assessing growth in the automotive market, you can gain a good insight into how tool consumption is developing. It's different in the aerospace industry. In 2025, there was not more money spent on tools than in the previous year, even though more aircraft were built. One reason for this is that the industry is realising cost-saving potentials by optimising processes and increased tool regrinding. After all, the cost of a bore can be reduced by more than half with a reground tool. We are also seeing a tendency where machining operations that were previously carried out manually are now being automated using Advanced Drilling Unit (ADU) or robots. The industrialisation of production is a major lever for further increasing production volumes. The aim is to produce 10 per cent more aircraft than the previous year, which is quite a lot. It is expected that twice as many aircraft will be flying by 2040 as there are today.

What does that mean for MAPAL?

Benezech: The aerospace industry needs to invest in new machines and production lines in order to meet its ambitious goals. This also applies to the modernisation of existing production facilities. We assume that the demand for tools will increase, but not in proportion to aircraft production. However, the tools will need to be technically more advanced. This creates additional potential for MAPAL - not only as a tool manufacturer, but also as an integrated technology partner that measurably increases productivity and quality with process analysis, design, validation and series transfer.

Estrat: In the past, aircraft manufacturers primarily focused on the price of a tool, which sometimes resulted in extremely high cost per part. By using MAPAL's modern tool technologies, these costs were reduced by a factor of ten. The industry has consequently moved away from low-cost tools, particularly in the area of assembly. The focus has shifted to productivity and quality. This is particularly important for applications where stack materials with composites made of CFRP, titanium and aluminium are machined in a single operation. Moreover, the major manufacturers could sell more aircraft than they can currently produce at the moment. In both assembly and parts production, there is therefore a need for tools that enable higher productivity and can keep pace technologically with the increasing industrialisation of processes. And delivering the right solutions for these prerequisites is one of MAPAL's core strengths. ➔

Which of the two areas is more important for MAPAL: Final assembly or part machining?

Benezech: Assembly and part machining are equally important for MAPAL, even if the requirements are different. MAPAL has built up a great deal of expertise in assembly in recent years and has been very successful with the major manufacturers, especially in France. We are therefore consistently transferring the technical solutions and expertise we have developed to other markets via the Global Organisation for Assembly. In parts production, we draw on experience from Germany and the UK, among other countries. The focus is on process-stable, reproducible machining solutions for titanium, aluminium and composites - designed for industrialisation and series stability.

How does MAPAL meet the requirements of the respective customers worldwide?

Benezech: It is important that we adapt to the local context. We gather customer requirements directly on site and listen carefully to what is expected. After all, it has always been an essential part of MAPAL's DNA to be close to the customer and to tailor tool solutions to their needs. We have the skills and capacities to fulfil all requirements - from simple tools to the design of complex processes. To ensure that this is reproducible worldwide, we rely on three columns:

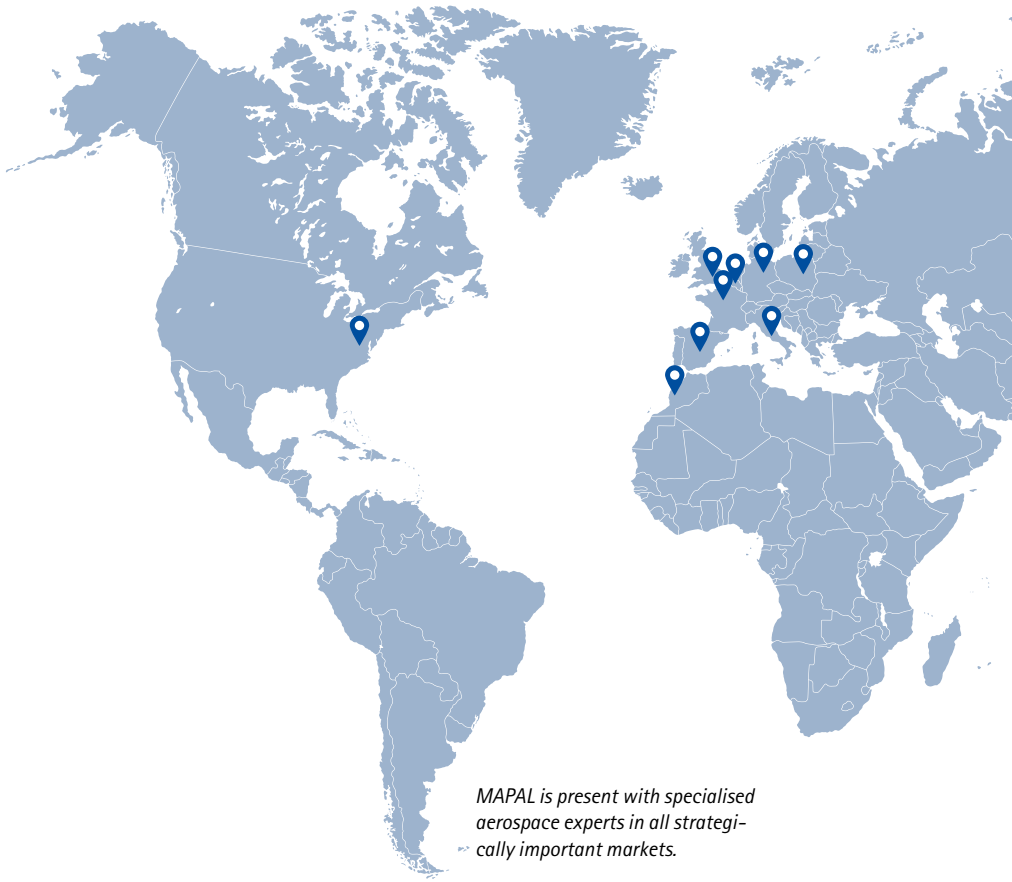
1. *In parts production, our strategic Generic Components are available for sales activities. They map all relevant machining steps, serve as reference processes that can be quickly adapted to customer-specific requirements and create planning security. We also work closely with machine manufacturers to optimally harmonise tool and machine performance. The aim is to validate new performance limits in machining - especially for aluminium structural components - under series production conditions and to make the results available worldwide.*
2. *For final assembly, the Global Organisation for Assembly centrally bundles quotation processing, development and testing and ensures rapid responses, process adaptation, validation support and transfer to series production via local process experts. To safeguard our final assembly processes, we operate a modern test and analysis environment in France, which makes the findings available worldwide.*
3. *Specialised local sales experts for aerospace, who work together in a networked technical support system, are crucial for homogeneous market development worldwide. As a result, our customers benefit from short response times, consistent process design and a rapid transfer of validated solutions into series production - regardless of the respective location.*

Do you already have these specialists in place everywhere?

Estrat: We do in those markets that are the most strategically important. Our teams in Germany, France, Poland, Italy, Spain, Belgium, UK, the USA, China and Morocco are well positioned and are creating growth. But of course, we cooperate closely with all MAPAL subsidiaries and sales representations worldwide.

"The industry will not find the quality of solution that MAPAL offers from any other supplier."

Frédéric Estrat
(Global Key Account Manager Airbus and Sales Director MAPAL France)



MAPAL is present with specialised aerospace experts in all strategically important markets.

Is MAPAL focussing particularly on the large aircraft manufacturers or also on the smaller ones and suppliers to the industry?

Benezech: By drawing on our expertise in technical matters and global sales, we are in a particularly good position to meet the requirements of major OEMs and Tier 1 & 2 suppliers, a task that will remain our top priority. At the same time, we naturally support the suppliers along the value chain. Our agile organisation allows us to easily adapt to our customers' different requirements.

As you mentioned, the aircraft industry tends not to change current processes. How can you still introduce innovations into this market?

Estrat: Today, the industry is no longer quite as conservative as it once was, and processes are being adjusted to a certain extent. Manufacturers are forced to do this if they want to achieve their ambitious growth targets. These adjustments are not limited to a replacement of cutting tools, but actually extent to completely reorganising processes, for which new machines or possibly robots are purchased. This inevitably requires new and, above all, more powerful tools, including tools that perform several machining steps in one. Productivity is now a more important criterion than price. This opens up great opportunities for MAPAL.

Why should aerospace companies work with MAPAL? What sets MAPAL apart from the competition?

Benezech: MAPAL is a true technology partner that cooperates with customers in a comprehensive way. We cover all steps from customer enquiry to implementation and consistently align the solution with the customer's target criteria. This is how we have become strategic suppliers to various manufacturers.

Estrat: The industry will not find the quality of solution that MAPAL offers from any other supplier. We cover a very broad spectrum, in final assembly and in part production. We also support different machining concepts in both areas: From manufacturing on CNC machines to manual and semi-automatic processes through to ADU and robotic machining. Our strength lies in combining these technologies with customised tool and process solutions – worldwide. ■

Thank you very much for the interview.

"MAPAL is a true technology partner that cooperates with customers in a comprehensive way."

Laurent Benezech
(Global Head of Segment Management Aerospace & Composites)

Co-engineering by bavius and MAPAL

COMPLEX AIRCRAFT COMPONENT FOR MAXIMUM PERFORMANCE

As part of a joint project, MAPAL and machine manufacturer bavius designed and manufactured a demonstration part for the aerospace industry. The aluminium component, measuring approximately three by one metres, is based on a real rear spar from aircraft manufacturing, but was enhanced with a variety of challenging features. Besides its complexity, the component is also impressive due to the relatively short machining time of ten hours thanks to the productivity of the bavius AeroCell and the special MAPAL tools used for aluminium machining.

Proudly presenting the finished demonstration part in front of the AeroCell 160 | 400 (from left to right): Jens Ilg (Business Development Aerospace & Composites MAPAL), Alexander Follenweider (Component Manager Aerospace & Composites MAPAL), Stefan Diem (Application Engineer bavius) and Dominik Merz (Director Global Sales bavius). The clamping setup can be seen in the foreground.

A special setting fixture was used to machine the rear spar in two clamping setups. While setup 1 uses low tension, setup 2 harnesses vacuum for secure hold.

Pockets with various forms were one of the challenge of the demonstration part. Some special features were included, such as lugs with bores or a T-stiffener.

The rear spar was machined using about 20 different tools from MAPAL. Both special and standard tools with high-performance cutting material from MAPAL's aluminium portfolio were used here.

bavius technologie gmbh, based in Baienfurt / Germany, is specialised in the high-speed volume machining of structural components made of aluminium, which are typically required in the aerospace industry for wings and fuselages. Previously known as Handtmann A-Punkt Automation, bavius has been active as an independent family business since 2017, concentrating on two product lines: PBZ profile machining centres and horizontal machining centres HBZ with the AeroCell line. With around 120 employees, bavius generates more than 80 per cent of its turnover in the aerospace industry. As an OEM or supplier, bavius customers produce components for commercial and military applications. Components for satellites or rockets like the Ariane 6 are also produced on their machines.

ENTIRELY 'MADE IN GERMANY'

Most bavius machines are located in Europe, but they are also strong in North American and Asian markets. While the company has offices in the United States, production for all markets worldwide exclusively takes place in Baienfurt.

A particular strength of bavius's five-axis machining centres their extraordinary dynamic, which ensures high productivity during high-speed machining. To get every last drop of productivity out of their machines, bavius manufactures its own milling heads. The flagship of their product range is the bavius AeroCell 160 | 400 with a spindle power of 140 kW and top speeds of 30,000 rpm. The 140 kW are already reached at 18,000 rpm, i.e. the maximum power is available over a wide range of speeds. "When we do something, we make sure it's done excellently – and we are global technology leaders with our AeroCell 160 | 400", says Dominik Merz, Director Global Sales. ➔

1 *A shoulder milling cutter by MAPAL takes care of the details in the pockets.*

2 *An HPR multi-bladed reamers with the diameter 40 H7 machines the 47-mm-deep fitting bore. It is employed at a cutting speed of 120 m/min and a feed of 0.2 mm per turn.*

3 *The high-volume milling cutter OptiMill-Alu-Wave from MAPAL is used to mill pockets. It creates top chip volumes of almost 12 litres per minute. In the corners, it comes close enough to the actual geometries that finishing can take place right afterwards without an additional step.*

4 *An angled head is used for the bores in the lugs. A solid carbide step drill bores the lugs at a diameter of 16 and 12 mm.*

5 *View into the working area of the bavius AeroCell 160 | 400. Here we see pockets being milled and other features machined in the second clamping setup.*

6 *The MAPAL NeoMill-Alu-QBig with 50 mm diameter quickly machines the front. The slightly convex form of the part necessitates five-axis machining.*

OVER 90 PER CENT CHIPS

The rear spar was selected as a demonstration part because it fits perfectly on the machine with a table height of 1.6 metres and width of 4 metres. The rear spar is a common structural component in wings. Ribs run between the rear spar and front spar, which are arranged perpendicularly to the spars. These structural components define the geometry of the wings. The outer skin is riveted onto them. The completed component is made of 7075 aircraft aluminium and measures 2977 × 748 mm. Its flat form measuring 138 mm high is typical of aircraft components. From one ton of starting weight, only 70.61 kg remain after machining – a proportion that is quite common in the aerospace industry.

Among other factors, legal reasons prevented bavius and MAPAL from using a real aircraft component for the machining. This however gave those responsible the freedom to use the design of the demonstration part for a variety of applications. As a result, it is much more complex than any normal rear spar. It includes features that are not necessarily associated with a spar but could be useful for other components. "A customer who knows structural components and sees our part will recognise it and notice characteristics that are also found in their own components", Merz says, explaining this approach.

Machining took place in Baienfurt in two clamping setups. While setup 1 uses low tension, setup 2 harnesses vacuum for secure hold. At first glance, the front looks simpler than it actually is. The surface is not flat but curves slightly outward over a radius of 9.5 metres. This means that the component cannot simply be face milled. Instead, five-axis machining is necessary. For roughing and finishing, MAPAL employs the NeoMill-Alu-QBig with a 50 mm diameter and the OptiMill-Alu-Wave with a 25 mm diameter. The surface finish is performed by a PCD custom milling cutter.

ALL SORTS OF POCKETS

The machining of the back is particularly sophisticated. It is separated in nine different sections, each with its own special features. Like any rear spar, the demonstration part has many pockets. They are however completed here in all sorts of forms: rectangular, triangular, round, open, closed, some with inclined or curved bottoms. The ribs are very thin; the walls are mostly inclined. The pockets are up to 137 mm deep.

After pre-machining with the NeoMill-Alu-QBig, the pockets are cleared out by an OptiMill-Alu-Wave of various lengths. The semi-finishing is performed by a shoulder milling cutter modified specifically for aerospace applications. Thanks to its special geometry, the tool is particularly suitable for machining residual material in the corners as well as subsequent finish milling of the floors and walls. The special core rise ensures optimal stability during the machining process. To machine all the areas efficiently, MAPAL experts use different diameters and lengths of the shoulder milling cutter.

MAPAL also sets great store by efficiency during programming, as component manager Alexander Follenweider explains: "We work with a zigzag strategy in the parallel and counter feed to save on travel time. We thus constantly switch strategies during machining." Despite the high machining speeds, the aluminium may not be damaged as it changes properties when overheated.

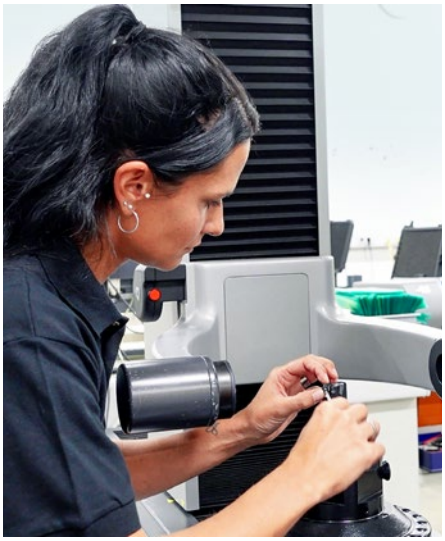
At top speeds, the OptiMill-Alu-Wave achieves a feed of 12 m/min at a cutting depth of 48 mm at 29,000 rpm. The bigger NeoMill-Alu-QBig achieves a feed of 25 m/min at 10 mm cutting depth. In the first 55 minutes of machining of the second clamping alone, 425 kg of aluminium were machined. At its peak, this results in a chip volume of more than 14 l/min. "The results we were able to achieve here are excellent – and we were also able to create very good surfaces in the process", says Stefan Diem, application engineer at bavius.

COMPONENT WITH MANY CHALLENGING CUSTOM FEATURES

The various pockets are not the only challenges on the component: The bores on the four lugs can only be reached via an angled head. Undercuts are also required. A T-stiffener, which is common for structural components and provides rigidity, is found on the demonstration part and is machined with a special PCD tool. Drilling and reaming operations are also called for in certain areas. "Nothing is normal on our component", Merz says, referring to the fact that you will be hard pressed to find a right angle anywhere on the part. Such oblique constructions are however the norm in the aerospace industry.

For the involved partners' customer presentations and as an eyecatcher for trade fairs, five of these rear spars were produced in Baienfurt. Much to the satisfaction of all those involved, the machining of a part takes a total of almost precisely 10 hours. "A component like this can take between 20 and 30 hours on other machines", Merz estimates. Structural parts are usually machined vertically on gantry machines ➔

Custom programming and CAM simulation were the first step of the project. A powerful and resilient end-to-end solution is based on the perfect interplay between machine, tool and process. This ensures that performance and reliability are optimised in every detail and machining is designed for maximum productivity.



As a technology partner, MAPAL takes complete responsibility for the manufacturing process – from planning to production maturity. The tool design is tuned to the part and machining concept. Precise tool settings are a prerequisite for stable processes with high cutting data.

with big tools. Cutter heads with diameters of 125 mm are normal. Feeds and speeds remain low. One disadvantage of this way of doing things is that chips are left behind which can cause scratches. Heat is also transferred to the component. Horizontal machining precludes this. Together with powerful tools that enable high cutting data, the dynamic AeroCell 160 | 400 opens up entirely new possibilities thanks to its extreme acceleration.

CLOSE COLLABORATION

MAPAL and bavius have been profiting from their close cooperation for many years. While MAPAL was developing the NeoMill-Alu-QBig and OptiMill-Alu-Wave, they were able to test and further optimise prototypes of the new tools in Baienfurt. As a tool manufacturer, MAPAL doesn't have equally powerful machines in Aalen. On the other hand, bavius depends on innovative tools, as Diem explains: "For our premium machines, we need top tools by suppliers like MAPAL offering high-volume milling cutters that take our machines to their limits. That doesn't work with universal tools – we don't gain any insights with them." The partners demonstrated what the AeroCell 160 can do two years ago. During test operations with overloading, the solid carbide milling cutter OptiMill-Alu-Wave achieved chip volumes of up to 20 l/min while full slot milling normal aluminium. The top results achieved here are every bit as impressive: 12 l/min for a component made of the AL 7075 with its higher tensile strength.

"I really appreciate the collaboration with MAPAL because we speak openly and treat each other fairly, and because they always provide a solution", Diem highlights. For Jens Ilg, Business Development Aerospace & Composites at MAPAL, the shared success has a further dimension: "I also get an optimal feel of our products when I see them being used in real and demanding conditions. And then I can offer them to customers with corresponding recommendations." ■

PARTICULARS

Andrei Tret

NEW MANAGEMENT STRUCTURE AT MAPAL ROMANIA SRL

Andrei Valentin, previously General Manager at MAPAL Romania SRL, retired on December 31, 2025, after a well-deserved career. His dedication and expertise have left a lasting impact on MAPAL Romania SRL.

As part of the transition to a process-oriented organisation, a new management structure for MAPAL Romania SRL was introduced effective January 1, 2026: Andrei Tret will continue to be responsible for Operations and Administration at MAPAL Romania.

Maricel Chirica has taken on the position of Head of Sales Romania.

Maricel Chirica

MARK LICH NEW DIRECTOR OF GLOBAL KEY ACCOUNT MANAGEMENT

Mark Lich assumed the role of Director Global Key Account Management on 1 October, 2025, taking over the leadership of this newly established department of the same name. In this function, he is responsible for the strategic and operational management of sales activities and results for MAPAL's global key accounts. Lich reports directly to the Chief Sales Officer of the MAPAL Group, Claudio Gabos.

Mark Lich joined the company at the end of 2013 and has extensive experience in various sales roles at MAPAL. Among other roles, he has served as Area Sales Manager for Southern Germany and managed global strategic sales projects. Since January 2023, Lich has been heading the Sales Management Office (SMO), which is responsible for steering and supporting global growth and efficiency goals within strategic sales management. He will continue to fulfil this role alongside his other responsibilities.

Smart cooling channel guidance: A new feature for MAPAL's UNIQ hydraulic chuck

UNIQ DIRECTCOOL: DECENTRALISED COOLING FOR MAXIMUM EFFECT

With the DirectCool option for the UNIQ hydraulic chuck range, MAPAL launched a future-forward solution that takes cooling and the process reliability of machining to a new level. The technology addresses the requirements of modern machining processes and is cost-effective, technically refined and easy to integrate.

The UNIQ range of hydraulic chucks was introduced by MAPAL in 2020 and continually expanded ever since. The UNIQ DReaM Chucks for boring and reaming applications and UNIQ Mill Chucks for milling operations are established on the market with a large customer base.

A key feature was added to the UNIQ portfolio in the form of the DirectCool option. DirectCool is a decentralised cooling system that enables precise cooling along the tool shaft to the cutting edge through three cooling channel bores. This allows the hydraulic chucks to achieve even temperature distribution, reduce wear and thermal distortion, significantly increase tool life, and enable consistent machining quality. At the same time, the flushing effect improves process reliability and surface quality, as chips are removed effectively. DirectCool supplies reliable cooling and prevents tool breakage, particularly in boring processes where chips can wind around the tool.

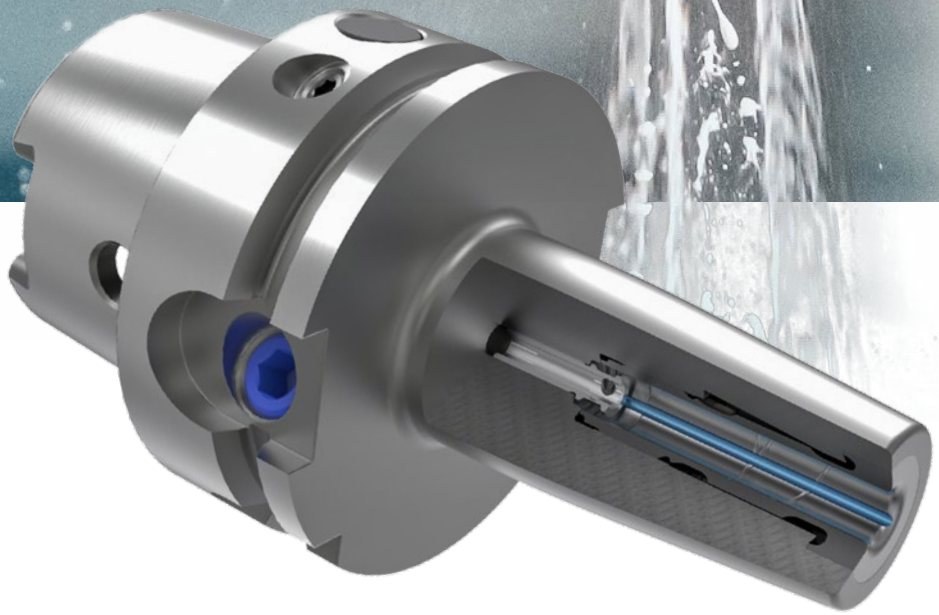
The UNIQ hydraulic chucks have unlimited compatibility. DirectCool integration does not alter tool restriction, so existing processes can be continued without adjustments. Cost-efficiency and flexibility are also assured, as no expensive shank grooves are required and standard tools and/or tools without internal cooling can be used.

UNIQ DirectCool is already producing promising results, particularly in stainless steel and aluminium machining. The technology was officially presented at EMO 2025 in Hanover and represents a clear commitment to hydraulic clamping technology from MAPAL. For the market launch, DirectCool is optionally available for UNIQ Mill Chucks, HA and UNIQ DReaM Chucks with 4.5° outer geometry in diameters from 6 to 32 mm.

BACKGROUND: WHAT SETS THE UNIQ HYDRAULIC CHUCKS APART

UNIQ hydraulic chucks have an identical outer geometry to the shrink chuck. At the same time, the hydraulic chuck can be distinguished externally from shrink chucks due to its glossy surface and blue screw in the HSK collar. UNIQ hydraulic chucks are highly durable and corrosion-resistant. MAPAL has picked up several design awards for the chuck. ■

Even temperature distribution is achieved in machining with UNIQ DirectCool. This reduces thermal distortion and wear, increases tool life, and enables consistent machining quality.

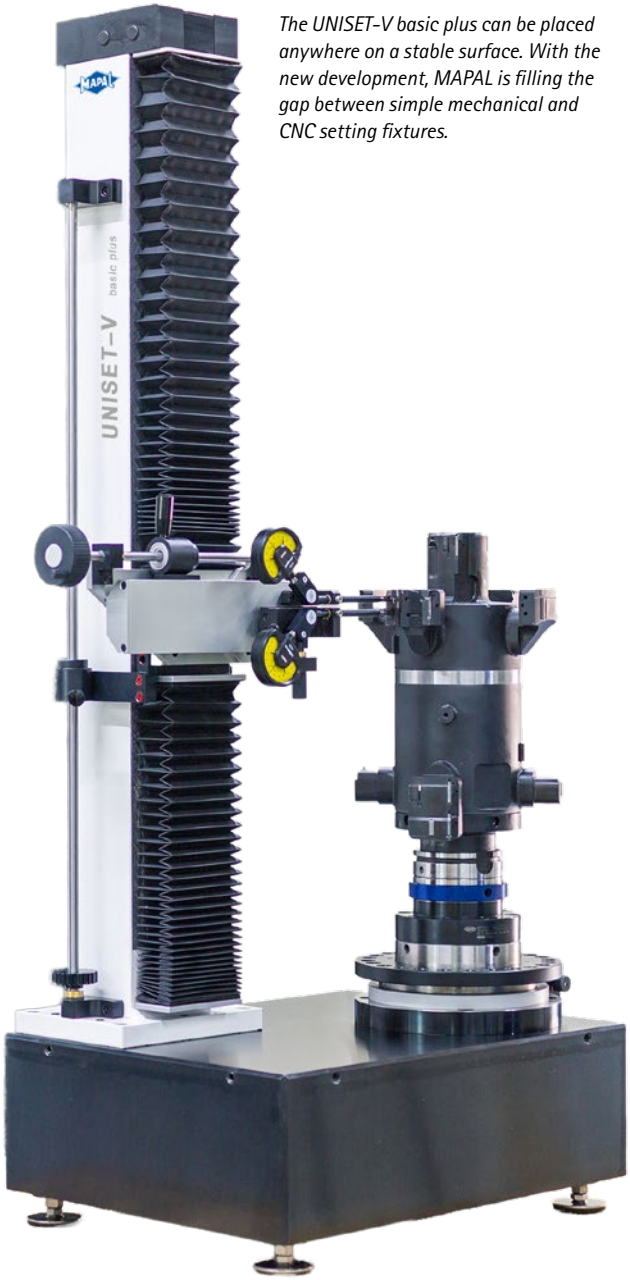


The DirectCool option enables precise decentralised cooling along the tool shank to the cutting edge with three cooling channels.

MAPAL provides highly cost-effective and flexible manual setting technology

UNISET-V BASIC PLUS – NEW SETTING FIXTURE FOR FINE BORING TOOLS WITH LARGE DIAMETERS

With the UNISET-V basic plus, MAPAL is filling the gap between simple mechanical and expensive CNC setting fixtures. The new tool setting fixture combines precision, robustness and practicality especially for large fine boring tools and is available in spring 2026.



The UNISET-V basic plus can be placed anywhere on a stable surface. With the new development, MAPAL is filling the gap between simple mechanical and CNC setting fixtures.

At EMO 2025, MAPAL presented a manual setting fixture tailored to the specific needs of small and medium-sized enterprises in the form of the new UNISET-V basic plus. This fills a crucial gap between simple mechanical setting solutions and CNC systems while continuing to guarantee full precision and high stability.

The device from MAPAL's UNISET range was designed as a response to demand from the automotive industry. In the electromobility industry in particular, large, heavy tools are often used to machine components like stator housings. These tools require extremely sensitive setting for high-precision fine machining.

However, in some cases users do not have the suitable setting technology and cannot achieve the potential precision on the tool side. Existing solutions such as the MASTERSET from MAPAL soon reach their limits when working with tools with large dimensions (from 200 mm). At the same time, CNC setting fixtures are not cost-efficient for many small and medium-sized enterprises. Consequently, in the UNISET-V basic plus, MAPAL has developed a new device that offers impressive cost-effectiveness and functionality.

ROBUST DESIGN FOR PRECISE SETTING OF TOOLS WITH GUIDE PAD TECHNOLOGY

The UNISET-V basic plus is designed for setting tools with a diameter of 100 to 400 mm, a maximum measuring length of 750 mm and with spindle connections HSK63, HSK100 and SK50. Tool weights of up to 45 kg are possible. Using reducing adapters, HSK32 to HSK80 can also be mounted. As

The UNISET-V basic plus is ideal for ultra-precise setting of guide pad tools with a diameter of 100 to 400 mm and a maximum measuring length of 750 mm.

the UNISET-V basic plus housing is based on a stable welded design, high mechanical stability is guaranteed. This is a key advantage in production environments.

As a stationary bench-top device with a height of 1.3 metres and a weight of 179 kg, the UNISET-V basic plus does not necessarily need to be placed in a setting room. It can be set up anywhere it is needed on a stable surface. For instance, it can be placed next to the machine where the tools being set are applied.

The UNISET-V basic plus enables micrometre-precise setting of cutting edge overhang and back taper for reaming and fine boring tools. It is operated using a two-button principle, where the cutting edge is set via a guide pad.

The UNISET-V basic plus is primarily targeted at small and medium-sized companies that have previously done without precise setting technology. However, the UNISET-V basic plus is also the right choice for larger companies seeking process reliability and high precision when setting tools with large diameters and high weights. ■

SHORT DESCRIPTION

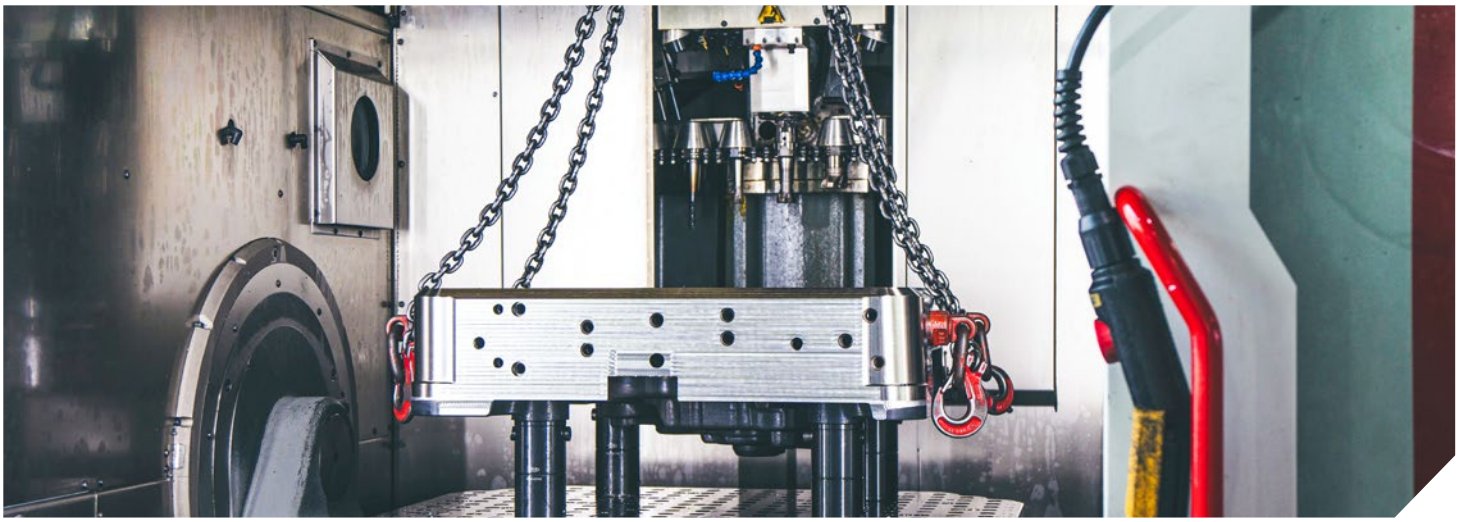
The UNISET-V basic plus is designed as a vertical bench-top device. It fills the gap between the entry-level product MASTERSET and expert solutions UNISET-H and UNISET-V expert.

Key technical data: Diameter range: 100–400 mm, tool weight: up to 45 kg, measuring length: up to 750 mm. The device has a modular design so customers can choose between different options.

MAPAL fulfils requirements for the die and mould industry

ECONOMICAL DRILLING DONE SMART

The secret to the success of the machining company Zerspanungstechnik Mangner GmbH in Bad Laasphe, Germany, is targeted investment in optimisation. Drilling has been made more efficient thanks to a large tool package from MAPAL. The package is made up of 110 TTD replaceable head drills along with a big stock of solid carbide heads.



Mangner uses the TTD replaceable head drills especially for piloting deep bores and for complete drilling of so-called coolant boosts. ©Mangner

When Mike Mangner started his company in a small, rented hall in 2013, tools still had to be changed by hand. The young company developed quickly. Just one year later, the company grounds were bought, the first Hermle machines were set up. As a traditional contract manufacturer, most of Mangner's customers come from the die and mould making industry. The company offers them services like pressure die casting, sand casting and modelmaking. Most of the work is destined for the automotive industry. Besides this, parts are also produced for general machine engineering. Mangner's customers come from all over Germany, but above all from their region.

Today, 15 machining centres can be found on their shop floor, above all from Hermle. From the smallest 5-axis machine to the machining centre for components as large as 1 x 1 m, they cover a wide spectrum of components. There are about two machines for every operator. Programming takes place directly at their workplaces. Mike Mangner's optimisation philosophy involves having many identical machines in operation. A next step in the standardisation process involves making available as many of the same tools as possible for these machines. "With this concept, we are in a strong position and can employ our operators flexibly", Mike Mangner explains.

HIRTH SERRATION FROM MAPAL ENABLES HIGH TORQUE

Dominik Geßner started at Mangner as a production manager two years ago, bringing along his experience and contacts. MAPAL and their Regional Sales Manager Uwe Rein were among them. Geßner advocated the use of TTD replaceable head drills, which he had come to know and appreciate over the years.

The TTD replaceable head drill is the primary application for the TTS (Torque Transfer System) interface. The interface owes its stability to the radially arranged Hirth serration with 12 or 18 teeth, depending on the diameter of the adapted solid carbide drill head being used. Due to the serration's form closure, variable geometries of the replaceable head are possible. In addition, optimal torque transfer and high radial run-out and change-over accuracy are ensured.

The replaceable drill head is secured by a threaded pin affixed to the side of the tool holder. This allows the drill head to be changed directly in the machine. The positioning aid integrated in the serration ensures that the chip flutes and coolant transfer from the tool holder to the replaceable drill head match. With its cutting edge geometry, the drill head provides the quality and performance level of solid carbide drills.

MACHINING TIME REDUCED

"The true advantage of these drills comes into play in hardened materials, which it can machine reliably", Geßner reports. "We achieve a long tool life here, which reduces our through-

As a traditional contract manufacturer, most of Zerspanungstechnik Mangner GmbH's customers come from the die and mould making industry with pressure die casting, sand casting and modelmaking. ©Mangner

Examining the drill head of a TTD replaceable head drill (from left): Dominik Geßner (Production Manager, Mangner), Uwe Rein (Regional Sales Manager, MAPAL), Mario Schäfer (Assistant Production Manager, Mangner) and Mike Mangner (Managing Director, Mangner).

Migrated manufacturing in the area of drilling entirely to MAPAL's TTD replaceable head drill system (from left): Uwe Rein (Regional Sales Manager, MAPAL), Dominik Geßner (Production Manager, Mangner) and Mike Mangner (Managing Director, Mangner).

put of drill parts." At Mangner, drilling used to take place prior to hardening. By eliminating the need for an additional clamping step, set-up time has been reduced. This increases efficiency in manufacturing, thereby providing the company with added value.

The previously used tool system had a particular weak point: if a solid carbide drill head broke, the drill holder was usually also damaged. In Geßner's experience, this has never happened with MAPAL. After breakage, work could always continue with a new drill head, limiting any resulting damage. "I primarily considered changing the tool system from a cost perspective", says Mike Mangner, explaining why he chose MAPAL.

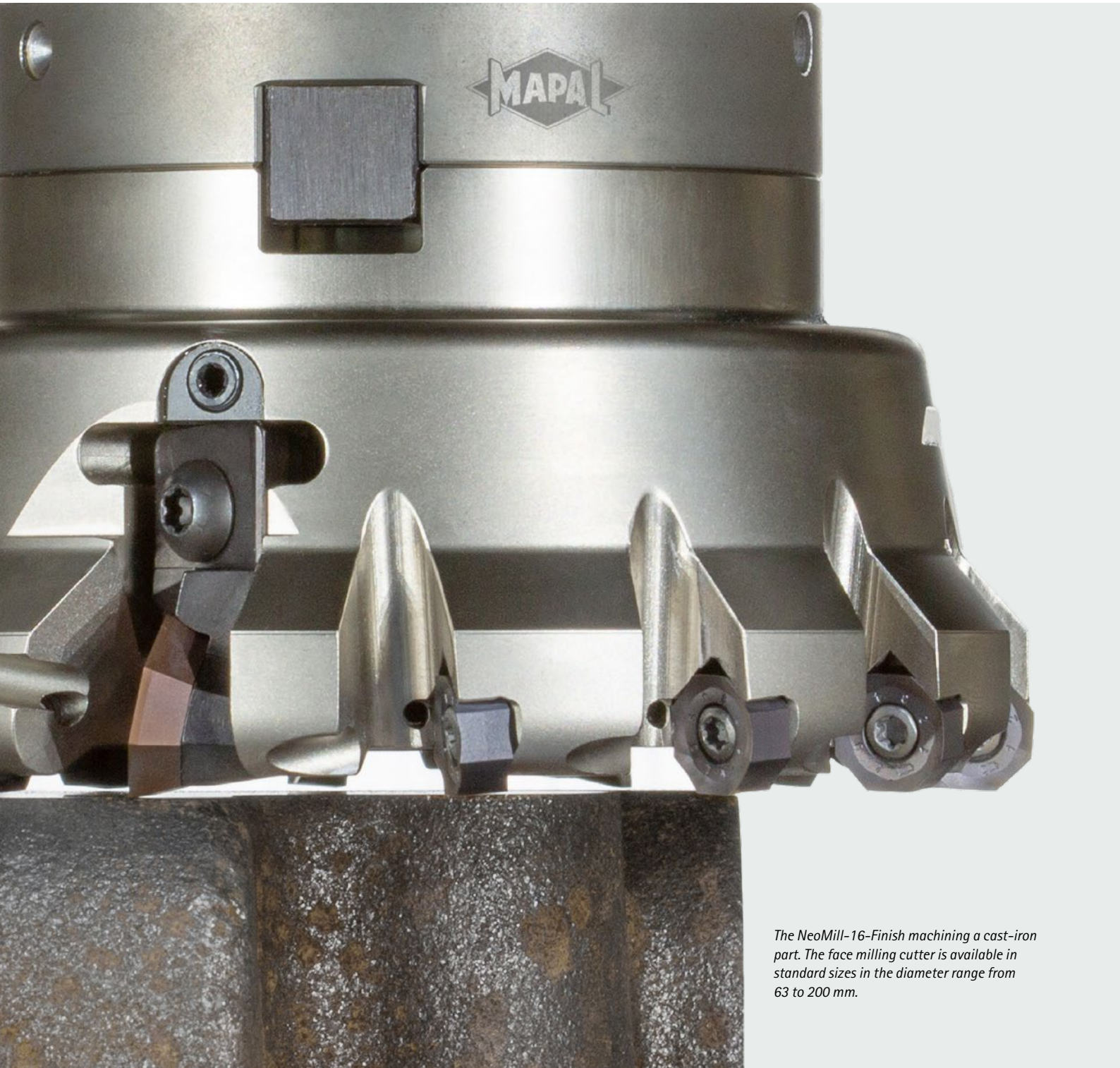
MORE ECONOMICAL AND SUSTAINABLE

Mangner uses the drills above all to pilot deep bores as well as complete bores for cooling, so-called coolant boost. While the normal lead geometry of the cutting edge is 140°, MAPAL also offers variants for special applications. A 180° tip can execute countersink bores, for example, which would otherwise only be possible with a milling cutter. Ball-nose drills enable drilling radii. Geßner reports that if handled with care, the drill heads can be reground up to three times by MAPAL. "This is very sustainable and lowers the average price per tool."

The tool package delivered by MAPAL includes diameters from 12 to 45 mm, whereby the tool lengths are 3xD, 5xD, 8xD and 12xD. "We cover a certain diameter range with replacement drill heads in increments of tenths", Geßner specifies. "The tools would be unaffordable made entirely of solid carbide." The many sizes reflect the various requirements of manufacturing. Series of up to 100 parts are rare here. Typical lot sizes are between one and 10 pieces. The material is often heat-resistant 1.2343 steel, but special materials, steel with varying degrees of hardness and aluminium are also processed.

After the successful deployment of TTD drills, the cooperation between Mangner and MAPAL is set to continue. Reamers are already in use. Test finishing with milling cutters is also taking place. Uwe Rein thinks that high-feed cutting could be the next step. ■

NEW MILLING TOOLS FOR MAXIMUM EFFICIENCY



The NeoMill-16-Finish machining a cast-iron part. The face milling cutter is available in standard sizes in the diameter range from 63 to 200 mm.

The new single-row shoulder milling cutters and shell end face milling cutters with multiple rows from the NeoMill-Alu-Rough series for stable roughing of cast aluminium parts even at high material removal rates.

Unique and with complete process reliability – the NeoMill-16-Finish (right) with pre-machining insert ONMU05 with 16 cutting edges and indexable insert with eight cutting edges for finishing steel and cast-iron materials. The NeoMill-16-Face (left) offers efficient pre-machining for face milling.

MAPAL is expanding the NeoMill milling cutter product range in the areas of semi-finishing and finishing of steel and cast-iron materials as well as roughing of aluminium components.

Just in time for EMO 2025 in Hanover, MAPAL expanded the NeoMill milling programme with three new products specifically tailored to the requirements of series production: NeoMill-16-Finish, NeoMill-16-Face, and NeoMill-Alu-Rough. All three milling cutter series stand for high cost-effectiveness and process reliability as well as sustainable manufacturing – seamlessly integrating into the existing portfolio.

NEOMILL-16-FINISH: FACE MILLING CUTTERS FOR NEXT-LEVEL FINISHING

The NeoMill-16-Finish was developed for finishing tasks where requirements on surface finish and dimensional accuracy are high. With the combination of the pre-machining insert ONMU05 with 16 cutting edges and the OFGW07 indexable insert with eight cutting edges for finishing, MAPAL offers a unique system with complete process reliability. The face milling cutters are available in standard sizes in the diameter range from 63 to 200 mm and enable easy setting of the finishing inserts. This makes surface qualities of up to R_z 4 µm possible.

NEOMILL-16-FACE: EFFICIENCY IN PRE-MACHINING FOR FACE MILLING

The NeoMill-16-Face is joining the portfolio for pre-machining. Cost-effectiveness is in focus here, too: the ONMU05 insert with 16 cutting edges ensures low costs per part and stable machining. The tools are available in diameters from 32 to 100 mm and are particularly suitable for series production of cast-iron and steel components with low stock removals (up to 2 mm).

NEOMILL-ALU-ROUGH: FLEXIBILITY FOR ALUMINIUM MACHINING

With the shoulder milling cutter and shell end face milling cutter NeoMill-Alu-Rough, MAPAL offers an innovative solution for roughing cast aluminium components in the automotive, aerospace and mechanical engineering industries. In the standard range, milling cutters with a single row of inserts are available at diameters from 50 to 160 mm. The NeoMill-Alu-Rough is available with multiple rows of inserts as a shell end face milling cutter with diameters of 63, 80 and 100 mm. Customer-specific tool solutions can also be configured. The combination of large chip spaces, tangential indexable inserts and a wide selection of cutting materials (PCD, coated or uncoated carbide, CVD diamond) ensure reliable chip removal and high stability – even with large chip volumes.

With the NeoMill programme, MAPAL has successfully served the milling tool market for series production for many years. With the newly developed NeoMill-16-Finish, NeoMill-16-Face and NeoMill-Alu-Rough series, the tool specialist is emphasising its expertise in the semi-finishing and finishing of steel and cast-iron materials and the roughing of aluminium. ■

The finishing inserts of the NeoMill-16-Finish are designed with eight cutting edges and are easy to set.

RETHINKING TURNKEY COMPETENCE

How MAPAL uses holistic manufacturing solutions to speed up processes, reduce risks and secure the future

Turnkey solutions are becoming increasingly important in modern manufacturing. They constitute holistic concepts where the solution provider takes full responsibility for planning, implementing and optimising a production process.

This not only involves the supply of individual components, but also the intelligent combination of machines, tools, fixtures and digital services. A sophisticated turnkey concept offers customers maximum efficiency and minimal interfaces, representing a very secure investment – especially in times of complex requirements and increasing demands on quality. As a full-service provider, MAPAL fulfils these criteria without exception.

COMPREHENSIVE EXPERTISE FROM A SINGLE SOURCE

For Stephan Köstler, Senior Director Product & Service Management, the strength of MAPAL's approach lies in the fact that all important disciplines are integrated: from process analysis to tool and fixture design to simulation, programming and production support. Another distinguishing feature is MAPAL's capability to assume responsibility for entire processes, according to Köstler: "We don't just deliver components; we deliver production that runs."

The advantages for the customers are clear: less organisational complexity, lower risks and quicker production launch. Industries with high quality requirements, sophisticated components and tight tolerances profit the most: the automotive and e mobility, fluid power technology, mechanical engineering and aerospace industries, for example. All of which are naturally key industries for MAPAL.

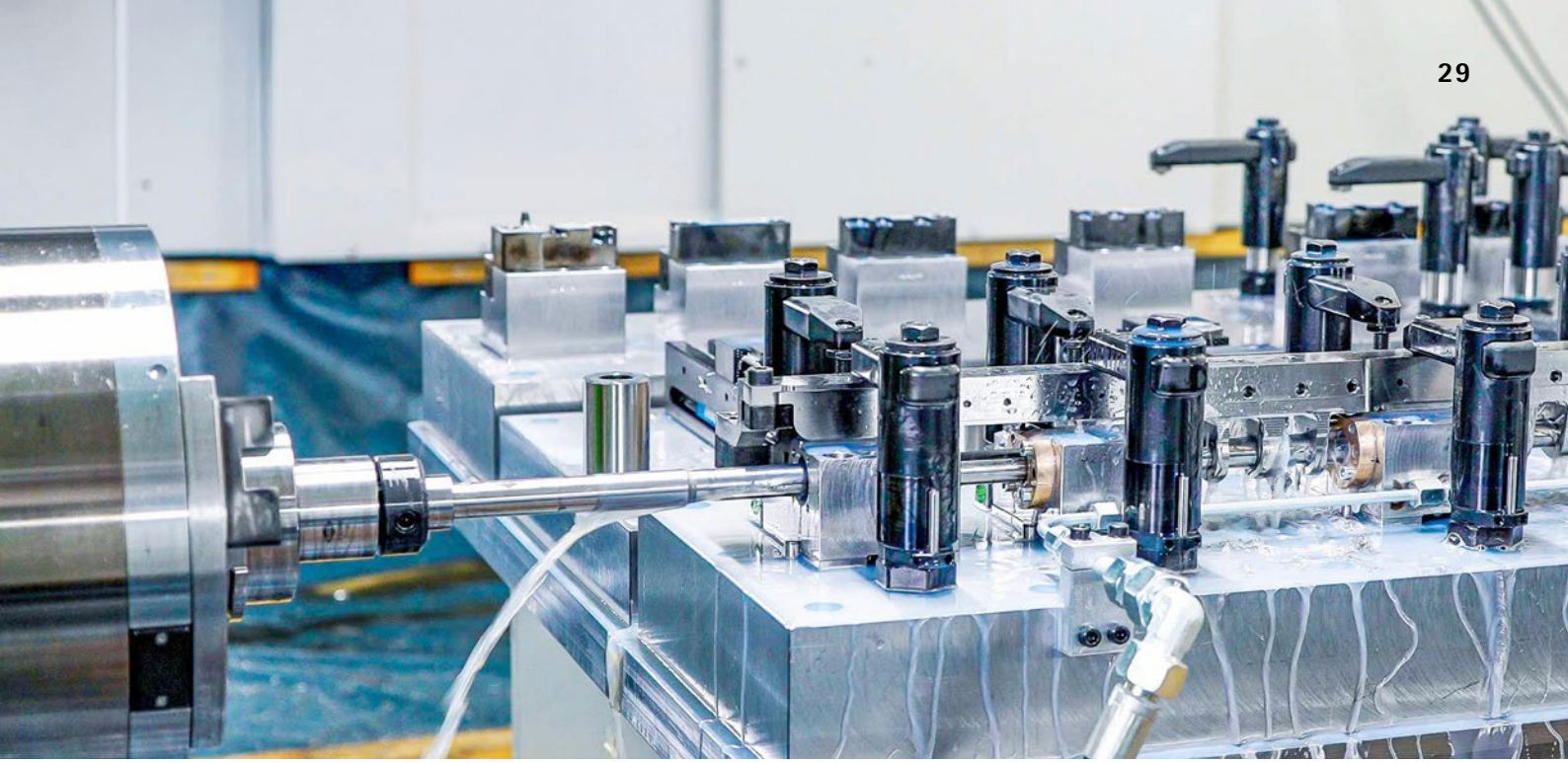
TURNKEY SOLUTIONS TAKE EFFECT QUICKLY

By assuming responsibility for processes, customers have certainty for their planning and are provided with a basis for substantiated financial decisions. MAPAL provides the relevant return-of-investment key figures to the customer: much shorter ramp-up times, stable CpK values from day one, low tool and process costs through tools and cutting data that are optimally aligned to the process and each other, and clearly documented progress through all project phases. By means of reference projects, MAPAL can also show how quickly turnkey solutions take effect and costs are recouped.

Fixture design is a central element of every turnkey project. As MAPAL has in house expertise and capacities for fixture design, the group can offer everything associated with turnkey project from a single source.

MAPAL uses a complete 3D simulation chain for this purpose. The fixture is digitally embedded in the real machine environment. All tools and NC programmes are tested for collisions. Detailed reports, 3D visualisations and reviews with the customer guarantee a seamless production ramp-up without any surprises.

With an eye to the future, MAPAL is expanding its turnkey approach with more digital services. In the research initiatives PRODaaS (already completed) and PRODaaS@SCALE, the specialists are working on intelligently feeding real-life processes data back to planning. The goal: adaptive, transparent and even more efficient processes. ➔



STATEMENTS FROM PRACTICE

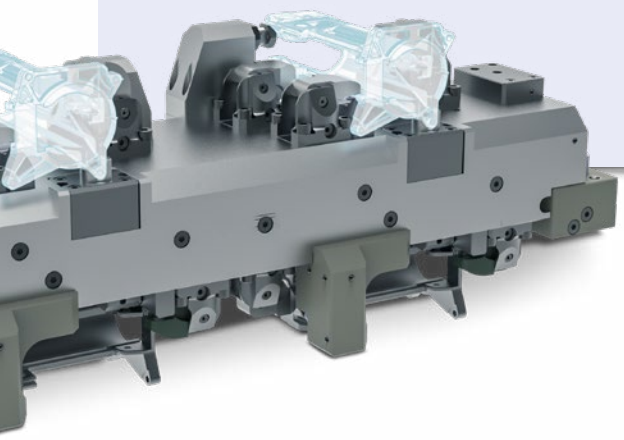
Where do turnkey offerings add value for your customers in your market?

In which areas can these turnkey services strengthen MAPAL's profile as the benchmark in manufacturing processes?

Dr Piotr Tyczyński | Managing Director | MAPAL Polen

» *In the Polish market, the turnkey offer from MAPAL adds a lot of value because it bridges a critical gap in engineering expertise and reduces investment risks. By supplying a guaranteed machining process (including cycle times and quality), we help customers to compensate for a lack of local specialists. In this way, they can generate revenue from day one, instead of spending months developing processes in-house.*

» *Turnkey services contribute to MAPAL's further development from a premium tool manufacturer to a technology partner and strategic solution provider. Due to experience in the entire machining manufacturing ecosystem (not only with machining tools), MAPAL has positioned itself as a trustworthy authority in engineering expertise and the go-to contact partner for complex manufacturing challenges.*



Conrado Diniz | Managing Director | MAPAL Italien

» *The comprehensive experience and deep knowledge of the MAPAL Tooling and Turnkey Process Teams confer a decisive advantage to our customers from the very start. The teams not only help define the machining process but advice on a holistic level.*

Once the process is defined, the close collaboration with the Engineering Team for tools and clamping fixtures ensures a quick, reliable and time-saving workflow from order to implementation.

With a MAPAL turnkey solution, customers not only acquire the tools, fixtures and a parts programme, they also receive a complete, guaranteed manufacturing solution including cycle times and process capability, supported by professional and transparent project management.

» *We see particularly great potential in the automotive, fluid power, and mechanical engineering market segments to deliver added value for customers with our turnkey offering. We have already successfully completed several turnkey projects in Italy.*

MAPAL TURNKEY SOLUTION

PERFORMANCE

PROJECT ANALYSIS & PROCESS DESIGN

- *Project analysis*
- *Feasibility study*
- *Cycle time analysis*
- *Development of machining process*
- *Definition of clamping fixture*

CLAMPING FIXTURES

- *3D and 2D design*
- *Production and assembly*
- *Dimension and function testing*
- *Collision analysis*
- *Technical documentation*

TOOL PACKAGES

- *Selection of the appropriate tool technology*
- *3D and 2D design*
- *Production, assembly including presetting*
- *Tool documentation*
- *Delivery of the assembled tool set*

SIMULATION & PROGRAMMING

- *Cycle time study*
- *NC programme creation*
- *Simulation & collision check*
- *Parameter optimisation*
- *Implementation of a customer-specific programme structure*

PROCESS VALIDATION & PRODUCTION RAMP-UP

- *Verification of process capability (CPK analysis)*
- *Documented customer acceptance & series release*
- *Support during production ramp-up*
- *Training of operating personnel*
- *Maintenance & support*

Background

WHY MAPAL IS THE PERFECT SUPPLIER OF TURNKEY SOLUTIONS

EFFICIENCY THROUGH PROCESS RESPONSIBILITY

MAPAL assumes responsibility over the entire manufacturing process – from the idea to series production. For customers, this means clear responsibilities, transparent progress monitoring and a quick return on investment (ROI).

CUSTOM SOLUTIONS FOR EVERY INITIAL SITUATION

Whether it's a new project, retrofit or optimisation of existing processes, MAPAL offers a suitable solution for every challenge. By calibrating machines, tools and fixtures to each other, maximum productivity is guaranteed.

EVERYTHING FROM A SINGLE SOURCE – PERFECTLY CALIBRATED

MAPAL brings all the relevant disciplines together under one roof: project analysis, tool design, fixture design, simulation, programming and production ramp-up. Close cooperation reduces the number of interfaces, minimises sources of error and ensures seamless implementation.

PARTNERSHIP AT EYE LEVEL

MAPAL attaches great importance to maintaining an open dialogue with customers and values long-lasting partnerships. The individual support and willingness to assume responsibility – even for complex retrofitting or new projects – establish trust and security.

TECHNOLOGICAL EXCELLENCE AND PRECISION

MAPAL tools are associated with the highest degree of dimensional accuracy and quality. The combination of innovative tool technology and deep application knowledge enables stable processes, high cutting data and minimal unit costs.

SUSTAINABLE AND FORWARD LOOKING

By integrating modern machining strategies and cooperating closely with machine manufactures, MAPAL creates forward-looking manufacturing solutions, which will be economical and sustainable over the long term. ■

Focus on sustainability:

MAPAL PRODUCES SOLAR POWER AT ITS PFORZHEIM LOCATION

MAPAL continues to invest in renewable energy: A new photovoltaic system at the Pforzheim location has been providing solar power since November 2025. The company is reducing its carbon footprint and increasing energy efficiency in this way.

The photovoltaic system has a total output of 725 kWp. The total area of its solar panels is 3,177 square metres. It was installed on the roofs of three buildings, which were constructed between 2001 and 2014.

The project was completed in only five months. As a result, 12 percent of the power requirement are now met by regenerative sources. And there is more to come. "Sustainability is not just a catchphrase for us, it's a responsibility we bear. The investment in solar power is another building block in making our production future-proof and environmentally friendly", explains Christian Molch, Managing Director, MAPAL Pforzheim. MAPAL invested around 770,000 euros in the new PV system.

"With the photovoltaic system, we are actively contributing to the energy transition and reducing our carbon footprint", Marcus Dorn highlights. As Head of Maintenance in Pforzheim, he led project implementation together with the company partner Palme Solar from Aalen. Alexander Schäfer, Manager at Palme Solar, adds: "The collaboration with MAPAL shows how an industrial company can make an active contribution to the energy transition. Projects like these send a strong signal for our region and for climate protection."

The new PV system in Pforzheim is emblematic for MAPAL's path to a climate-friendly future and is one of many projects at suitable locations worldwide – for example, the headquarters in Aalen, in England as well as in India – to install solar power and produce more environmentally friendly and sustainable energy. ■

Happy with the successful collaboration (from left to right): Alexander Schäfer (Palme Solar), Marcus Dorn and Guiseppe Vitucci (both MAPAL), and Waldemar Schütz (Palme Solar).

The PV system covers almost 3,200 square metres of MAPAL's roof in Pforzheim. Renewable energy now covers 12 percent of the entire power requirement of the location.

www.mapal.com

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