

How to perceive and exploit an opportunity

GO-AHEAD FOR THE MACHINING OF ALUMINIUM PROFILES.

Quality 'to sit on'

Cost-effective implementation of the furniture's individualism

SMB

Competence in automation

Boundless source of creativity

Exclusive and aesthetically designed furniture



Foreword by Kurt Kutschmann.

Trust is very important

Dear customers, business partners and colleagues,

A project I supervised in the field of aluminium profile processing is the cover story of this issue (pp. 10-13).

Mechtop AG in Switzerland has been a highly esteemed contractual partner for many years and since I took over the responsibility for Switzerland in 2012, I have always been and continue to be impressed by the honest and competent approach of my contacts there.

You will be surprised at what our service partners around the world are capable of, and that is precisely why we are introducing them to you one by one in our new section.

What I would like to emphasise here is that I have no doubt that service will play a more important role than ever in the future, especially its prompt availability. I am guided by one thought: If our customers are doing well and are successful because I advise them in a trustworthy manner and we offer them effective, customised solutions, then Reichenbacher Hamuel is also doing well; and as a result, so am I and my family. In an economic cycle, we all depend on each other. This is exactly what the year 2020 has shown us in an impressive way.

We make our contribution by developing high-precision CNC systems tuned to their requirements. What this looks like in reality is shown by Raßhofer company, which is on the road to success with sophisticated living space concepts and aesthetically designed pieces of furniture, as well as the solid wood manufacturer Weißbacher, which is causing a stir with its chairs.

In this Insight, we once again present a member of our group of companies: SMB, a company that has earned an excellent reputation in industrial manufacturing with customised automation solutions since 1974.

I hope you will enjoy reading this issue

Dipl.-Ing. (FH) Kurt Kutschmann
Sales Representative Switzerland, Liechtenstein, Austria, Italy
Reichenbacher Hamuel GmbH



4-5 *Richard Weißbacher GmbH*
Quality 'to sit on'
Cost-effective implementation of the furniture's individualism.

6-7 *SMB Spezialmaschinenbau GmbH & Co. KG*
SMB
Competence in automation.

8-9 *Schreinerei Johann Raßhofer*
Boundless source of creativity
Exclusive and aesthetically designed furniture.

10-13 *Cover Topic: Mechttop AG*
How to perceive and exploit an opportunity
Go-ahead for the machining of aluminium profiles.

14-15 *Cover Topic: Service Partners*
The Mechttop AG
We open a new chapter – by presenting our service partners.

16-17 *Product presentation*
OPUS – the new standard in wood craftsmanship
AMYON: our distributor for the OPUS.

18-19 *Webinar WEBER-Additive / REICHENBACHER HAMUEL*
Additive manufacturing technology
Highest demands on large-format 3D printing and CNC post-processing.

Imprint

Publisher:
Reichenbacher Hamuel GmbH
Rosenauer Straße 32
D-96487 Dörfles-Esbach
Phone: + 49 9561 599-0
E-Mail: info@reichenbacher.de
Web: www.reichenbacher.de

Responsible for the contents:
Mike Beier
Marketing Management
Reichenbacher Hamuel GmbH
Phone: + 49 9561 599-184
E-Mail: mike.beier@reichenbacher.de

Edited by:
C. WEGNER presse & public relations
Christina Wegner
Prader Straße 12/1
D-89233 Neu-Ulm
Phone: +49 731 25099273
E-Mail: info@wegner-pr.com

Layout:
me Grafik-Design
Moritz Eisentraut
Rennleinsweg 29
D-96215 Lichtenfels
Phone: +49 9571 6398
E-Mail: info@moritz-eisentraut.de

Print:
Schneider Printmedien GmbH
Reußenberg 22b
D-96279 Weidhausen near Coburg
Phone: +49 9562 98533
E-Mail: info@schneiderprintmedien.de

Copyright:
The contents must not be copied or published without the prior consent of the publisher. Reichenbacher Hamuel GmbH, Dörfles-Esbach, in March 2021.

Quality 'to sit on'

Cost-effective implementation of the furniture's individualism.

A hotel or brewery searching for seating furniture, which doesn't just look good, but is particularly durable, will almost certainly come across Massivholzmanufaktur Richard Weißbacher GmbH in Essenbach near Landshut.

It is obvious that real precision work comes at a price, but this is exactly where plant manager Thomas Diewald sees the secret of their success: "For quite a long time everyone thought that the furniture industry in Germany could not much longer withstand the overwhelming price competition from low-cost producers. With the quality and individualism of our chairs, tables and benches, however, we have quasi created a niche in the pricier market segment, where there is a respectable demand for our products."

The company, founded in 1935 as a carpenter and joiner shop, employs about 25 people and can rely on more than 80 years of experience. Above all, they are proud that they render full service from one source: wood purchasing, wood logging, air-drying, technical drying, storage, wood cutting, CNC-machining, finishing and manual assembly, plus final inspection, surface treatment and delivery.

"Almost 85 percent of our customers are joiners who appreciate also the broad range of wood types we offer," Diewald says, "a total of 23 versions: from maple to stone pine."

"Our production quantities start at a single piece and all pieces of furniture are individually manufactured. 14 of a total of 18 people in production are exclusively handling the manufacture of chairs," workshop manager Robert Maier explains. This specialisation shows in a very comprehensive range of chairs for the living and dining area.



Massivholzmanufaktur Richard Weißbacher in Essenbach near Landshut: Robert Maier, Ludwig Kindsmüller, Thomas Diewald.



We are actually talking of larger series here: 40 to 50 chairs for breweries or restaurants, or up to 400 benches or tables for hotels.

The cost-effective implementation of the furniture's individualism had presented a great challenge. Since 1999, they have been using a VISION-I-Sprint at Weißbacher, an extremely robust machine perfectly suited for the processing of solid wood, which still ensures high production reliability at Weißbacher. In 2018, they added an ARTIS-X4 5-axis to their machinery. Thus, the CNC-lines produce 70 percent of all components by now. In the past, everything was done by hand, whereas today it is drawn and programmed using a CAD-CAM programme, including all angles, dimensions and other key data.

Robert Maier describes the demanding particularities of this task as follows: "We need a template for almost all of the components. Both machines can perform milling, sawing and drilling operations, but nonetheless differences have to be taken into consideration with respect to their capabilities. The VISION is equipped with a console table, which facilitates clamping, whereas the ARTIS has a higher Z-axis, which is more suitable for certain component sizes." Thus, during production planning he has to consider carefully which components are to be produced by which machine or whether templates will even have to be adapted.

In the opinion of Maier and Diewald, the further shift of work processes to machines is inevitable. "There will only be manual work in the finishing and assembly of the chairs and tables. This is also where the final check is carried out by the trained eyes of the wood specialists before the furniture is sent to the paint shop and awaits delivery," they conclude.

SMB

Competence in automation.

One more outstanding example for the individual competence of each member of our group of companies.

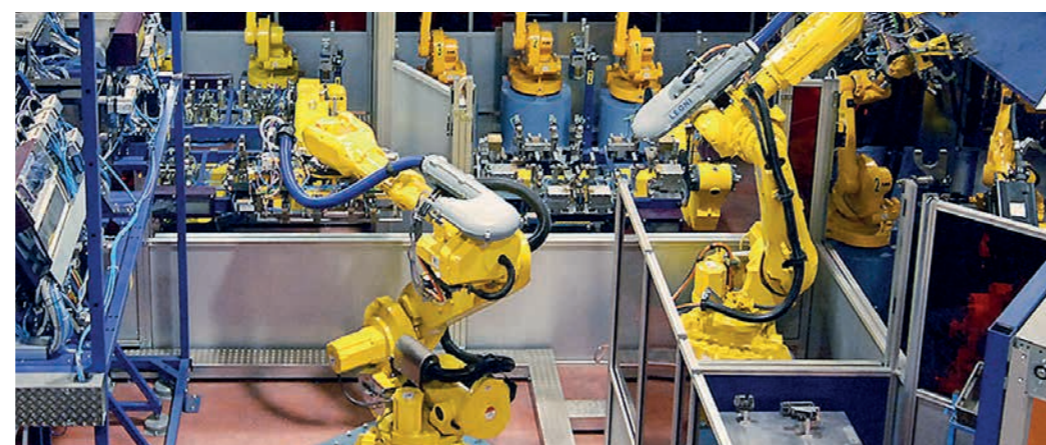
Since 1974, their individual automation solutions have earned SMB Spezialmaschinenbau GmbH & Co. KG an excellent reputation in the market. SMB is another independent member of the SCHERDELGroup. At its Marienberg site, the company has been developing a wide variety of application solutions and processes for industrial production in close cooperation with its clients for more than four decades. This includes partial automation, the construction of equipment and gauging tools and the creation of assembly and welding systems with laser and robot technology.

At present, of course, the focus is shifting to systems required for the production of components for electro-mobility. Here, SMB can draw on plenty of resources and provide the customer with comprehensive systems and technologies, including pick-and-place systems, integrated solutions for quality control, flexible semi-automated manufacturing systems, linkage systems, feeding technology, special machinery, laser welding systems and system equipment in the same way as cutting and bending units for lithium battery cells. What is special about SMB is that everything is from one source, starting with the engineering, via manufacture, right up to commissioning and service. Customers appreciate that.

The experts at SMB use their comprehensive knowledge on handling and testing technologies to ensure at all times that the turn-key systems meet all assembly requirements and the sophisticated quality management system always guarantees the smooth execution of all project tasks by SMB.



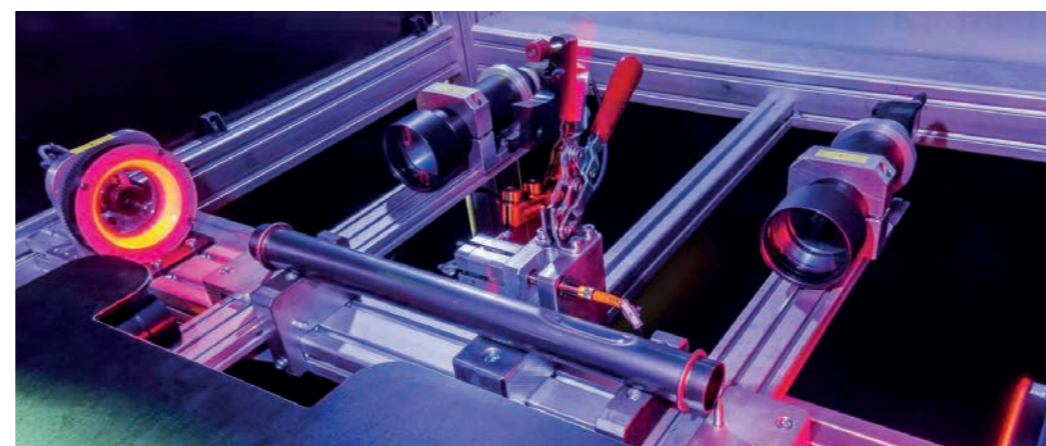
68 employees from the fields of consulting, project planning, design, manufacturing, automation, assembly and commissioning.



We would particularly like to highlight a few innovations today:

1. GEBERIT robot handling

The system in question is a welding line with fully automated loading of the equipment technology, automated removal of the assembly parts and subsequent processing in a Power & Free System. This arrangement with its 17 robots is realised in the smallest possible space. The required switching equipment is installed on a walk-on platform, which in turn keeps the space requirements for the system very small.



2. Camera surveillance of Powerfeeder

The Powerfeeder is a flexible feeding system for loose parts and components. A conveyor belt feeds the individual parts into the line. Component recognition is carried out by camera technology as a function of the respective component geometry. This innovative system takes care of component-friendly feeding with utmost reliability and availability. It is possible to feed, separate and seize components with complex geometries by various automation solutions. Integration of the system is easy and it is compatible with many industrial robots and automation systems.



3. Laser welding process

This standard welding laser cell is suited for welding medium-sized components and is intended for small and medium quantities, in particular. The rotary table solution, the equipment technology of which is visible on the table, permits the simultaneous loading of the equipment and welding of the components. The robot-guided remote laser welding head allows for a very flexible use of the system.

Boundless source of creativity

Exclusive and aesthetically designed furniture.

In an age, where everyone knows Pax and Billy, it is a respectable decision to position one's company in a market niche for high-value individual furniture in the high-end sector. In just under 40 years, the Johann Raßhofer joinery has perfectly succeeded in doing so, as their order books are almost full for the next few years. Those looking for exclusive furniture with aesthetic design, but above all for sophisticated living space concepts, will find what they are looking for here, as interior architect Katharina Raßhofer and product designer Daniel Raßhofer are blessed with an inexhaustible reservoir of ideas. And there really is a clientele to appreciate this – those who like to have their second or third home designed in New York, Corsica or France.



Individual furniture in the high-end sector: coffee bar.



Creative minds at work: Managing director Daniel Raßhofer and senior boss Johann Raßhofer excel with teamwork and a host of ideas.



At Raßhofer, everything made from wood passes through the VISION-II-T from Reichenbacher.



Machining of a round chair back.



Logs go directly to the sawmill and then into the open air.

70 percent of the design come from their own pen and include kitchens and bathrooms as well as concepts for all other rooms. Each piece of furniture is unique and impresses by its 100-percent precision. Anyone thinking that this can only be done by hand is mistaken. Since 2013, everything made from wood has passed through the 5-axis CNC machining centre VISION-II-T.

Programming of the individual parts is no simple task, not only in view of the many different types of wood, but above all for reasons of the sometimes unusual geometric shapes. Many different tools are necessary: that starts from the profile cutter, end mill, finishing and roughing cutter, via the rebate cutter, face milling and joint cutter, up to the biscuit joiner (groove cutter), recessed grip cutter, threading tools or deburring tools. All this is stored in a tool changer with 60 places. "Since each piece of furniture is different in design, we even use an additional multi-drilling unit so that we can perform actually all working steps in the same clamping operation," Daniel Raßhofer states.

This line demonstrates how Reichenbacher interpret customised special machine construction, because our designers did not break a sweat even when they learnt about special equipment requirements, such as an automatic beam table 6,000 mm in length or a particular type of extraction unit. Moreover, workpieces programmed with NC-HOPS, assisted by auxiliary construction geometry for multi-sided machining, can be visualised with the aid of a 3D workpiece display and collision control will be possible by simulating work steps beforehand. Thus, previously calculated milling paths with pre-set feeds and cutting depths will lead to burr-free results: this applies to simple work steps, such as elongated grooves in cabinet fronts or shelf units, as well as to holes for plug-in connections or round recesses for hinges, in the same way as to templates for intricate geometries.

Raßhofer have continuously expanded their capacities by using this CNC-line. As a result, they could accept quantitatively more, more extensive and significantly more complex orders, and have been impressing with flexibility and precision work for years. Thanks to the stable machine structure, there are almost no limits to the implementation of their visionary ideas in terms of material and geometries. This stability is of great importance, as the resistance offered by hardwood species, such as oak, beech or ebony, results in high forces, in particular so on the axes.

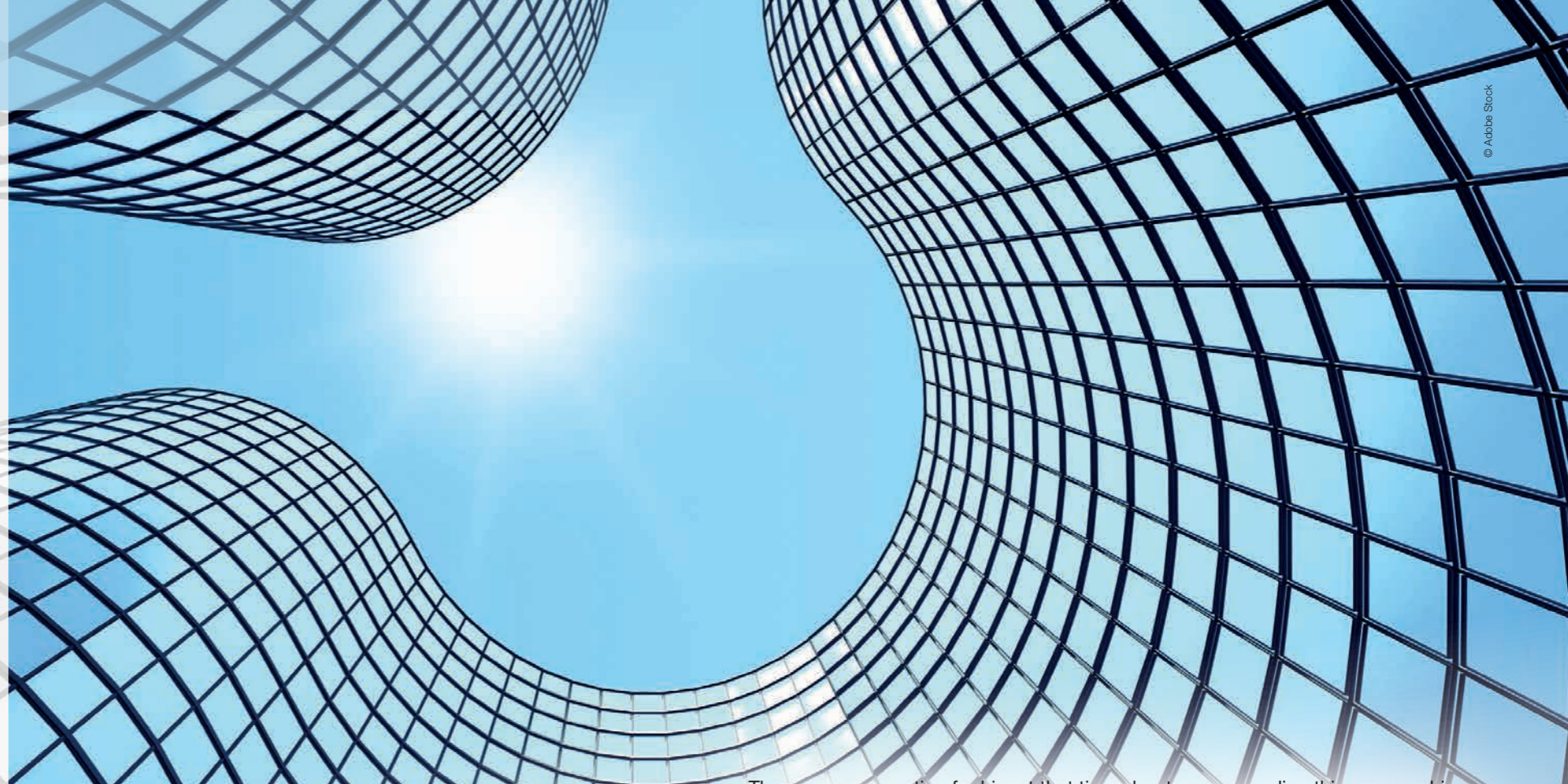
Nothing is left to chance when it comes to the raw material either. Logs bought at auction from forestry companies go directly to the sawmill, then to the open-air drying facility and after 1-2 years to the vacuum drying facility. In this way, the wood is dried down to a maximum of 6 percent. "Our experience has shown that this is best for furniture making, because the wood won't crack or warp anymore," Daniel Raßhofer states. Where is this going to take them? "We want to continue to create furniture in a self-determined way," Katharina Raßhofer sums it up.

How to perceive and exploit an opportunity

Go-ahead for the machining of aluminium profiles.

Why is a company that enjoys an excellent reputation in the steel industry venturing into completely new territory by machining about 70 tonnes of aluminium? The answer is as simple as it is remarkable.

Mechtop AG, our contractual service partner in Switzerland, has been much sought-after in the field of solid steel machining in the Swiss market for 25 years. Until two years ago, their core business did not include the production of aluminium extrusion profiles. They had been at home in the areas of conveying technology, special machinery and plant construction, pipe and steam pipe construction, metal, steel and apparatus construction, until an order in 2019 gave the go-ahead for aluminium profile processing on a very large scale. The very trusting relationship with key personnel at our company, for which the Swiss company has been working for around ten years, played an essential role in this. Since there was little time for consideration and those responsible had to make ad-hoc decisions, the expertise of Kurt Kutschmann, our sales representative for Switzerland, Austria and Italy, provided the decisive impetus for the purchase of the aluminium machining centre VISION-FLEX.



There was no question for him at that time about recommending this very machine to our business partner, “because with the FLEX we close the gap between simple CNC machines, which cannot move their individual table parts automatically, for example, and higher-quality machine tools. Usually, production of profiles is in a specific cross-section and limited to certain lengths. Otherwise, incredibly large pressing plants would be necessary and transport with normal trucks would not be possible – both would be hardly efficient. And the VISION-FLEX can handle these common profile sizes excellently and show off its advantages: large tool changer, 5-axis unit, good accessibility, automatic table beams that can be moved and positioned individually under programme control and much more,” Kutschmann explains.

“Last year, our problem was that we had to start aluminium machining immediately without the time needed for catching our breaths. At that time, however, everyone was still thinking in terms of machine tools,” Remo Jäggi, Head of assembly at Mechtop, explains the special circumstances back then. For economic reasons, it made no sense to use enormous pressing plants, quite contrary to the VISION-FLEX. “It has been one hundred per cent designed for this and is a real success,” says Reto Berger, who has been programming the CNC and machining parts for years. “Light metal machining was new territory for me, and I had to learn a lot, especially about tolerances,” he tells us with a smile.

The CNC machining centre VISION-FLEX for the 6-sided machining of aluminium profiles with a particularly impressive machining area of 7,300 x 500 x 350 mm.



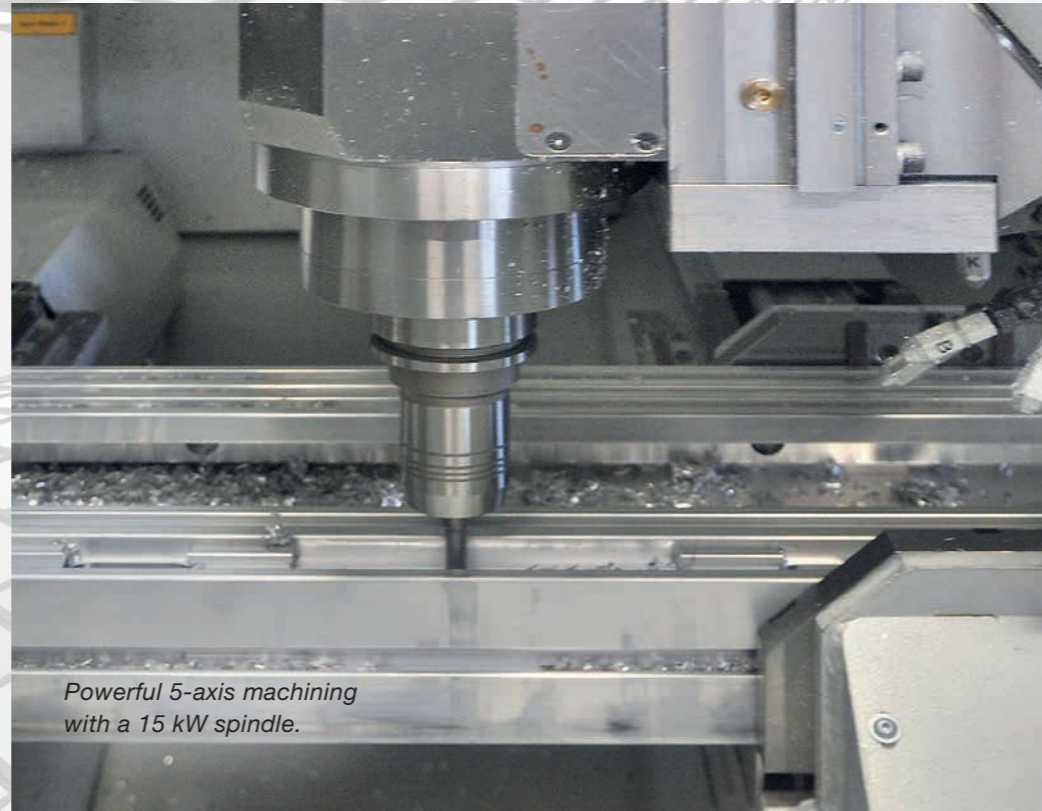
Reto Berger while programming: light metal machining was new territory for him at first, but he was fascinated by the flexibility of the system from day one.



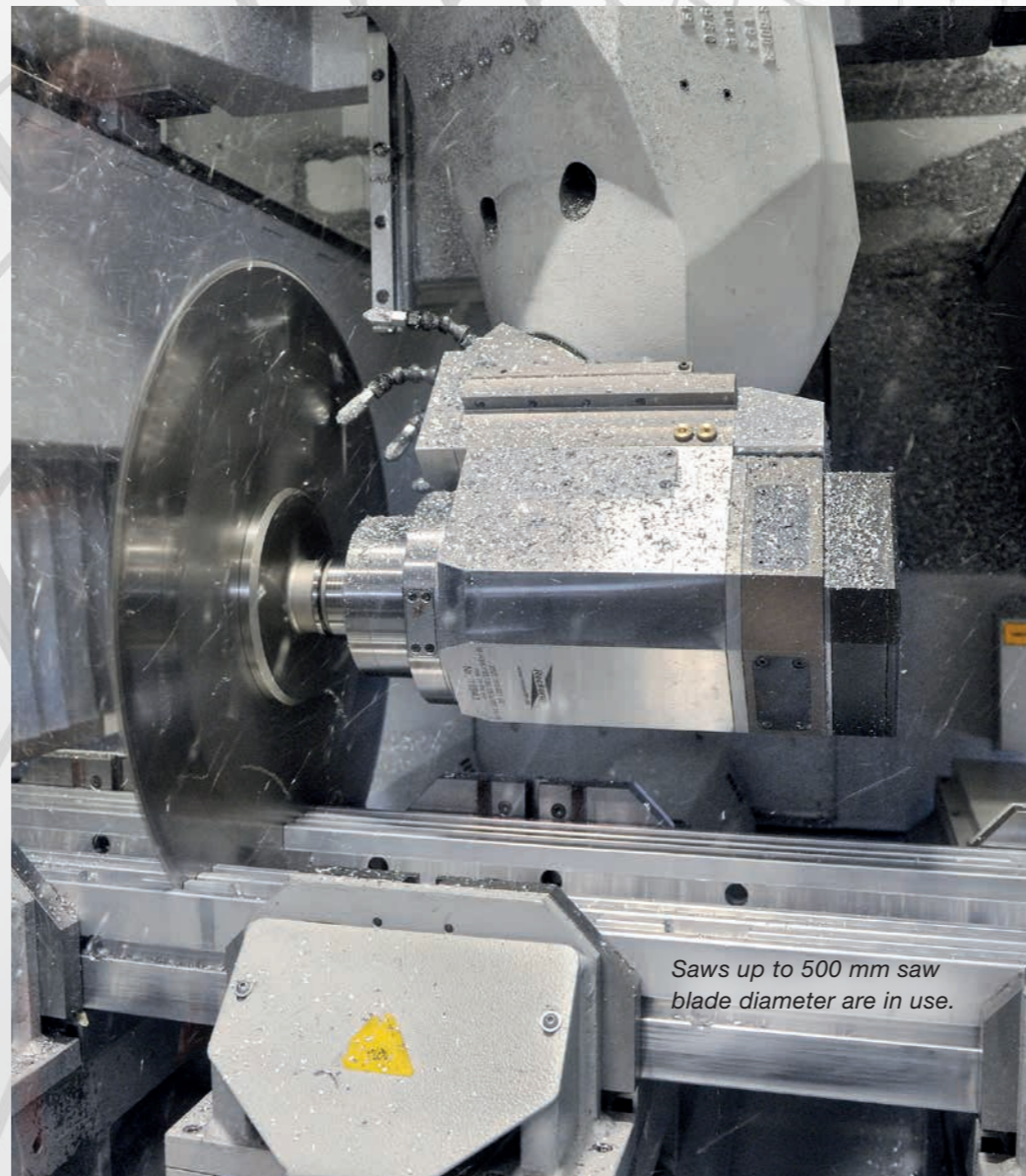
Remo Jäggi and Reto Berger, our interview partners.

The flexibility of the machine is particularly fascinating for him and his colleagues, along with the fact that they can indulge in creativity and use their intellectual capacities. "Pushing technical limits is where most of the fun is," he concludes. Here, one of the biggest challenges is the clamping of parts, especially when it comes to very small components. Moreover, extruded aluminium profiles often are not quite straight, and in some cases even heavily twisted, and the larger the profile, the more rigid it becomes. If then a part were not to fit properly, the worst case would be holes in the wrong places. "That's why clamping jaws or hold-downs precisely matched to the respective components are important," Remo Jäggi states with great emphasis. "The fact that you can move the clamping blocks around freely and also perform re-clamping operations during machining is still unbelievable to me and an absolute highlight of this system," enthuses Reto Berger, because he had never experienced this before in his working life with machine tools.

What is this enthusiasm based on? He describes this to us very impressively in relation to the machining of a 6,500 mm long L-profile with dimensions of 120 x 120 mm, from which he had to mill 42 ready-to-install angle profiles with all bevel cuts, faceting and drilling. His brilliant idea: the clamping jaws had to move apart after each separating cut – this was the only way to mill the edges subsequently without destroying partial sections of the next angle. A powerful software supported the programming: in order to use the spindle as efficiently as possible, he experimented with both, the optimum feed rates and the work steps. The highly dynamic VISION-FLEX turned out to be a perfect sparring partner and will therefore continue to set the tone in modern aluminium profile machining at Mechtop.



Powerful 5-axis machining with a 15 kW spindle.



Saws up to 500 mm saw blade diameter are in use.

6-sided machining, working dimensions of up to 7,300 x 500 x 350 mm, main time parallel set-up and machining, machine bed with chip conveyor, saws with blade diameters of up to 500 mm... a list that could go on and on. Fundamentally speaking, everything is possible with the VISION-FLEX: freeing of the saw blade, fast notching from below, shifter notching, nested or enclosed notching, cycle machining, flow drilling, thread forming and powerful 5-axis milling. No reference run is necessary due to the absolute path measuring system of the CNC axes. Individually driven clamping blocks, which can also be moved simultaneously in groups, considerably reduce set-up and production times, and in shuttle operation there is a remarkable time advantage due to automatic clamp positioning by the control system.

Remo Jäggi remembers that the initial tasks were relatively manageable. Once their clients had realised the new potential available at Mechtop, however, the milling jobs awarded to them became ever more complicated. Kurt Kutschmann tells us that this was exactly what he had expected, because expanding the portfolio as a service provider was one of his strongest selling points three years ago. For this reason, Remo Jäggi has long had his sights set on furniture makers and a few other industries that could use perfectly cut and machined profiles. As this aluminium machining centre can effortlessly handle even parts with lengths of up to twenty metres, "we invite you to try to meet the standard we have set," he concludes.



Clamping jaws or hold-downs precisely matched to the components are important for highly accurate milling results.

The Mechtop AG

We open a new chapter – by presenting our service partners.

Last year's developments have made very clear how fragile markets are. We know that our customers expect more from us than just excellent machinery. The overall package must suit their requirements, and service will play a more important role than ever.

Mechtop AG is our contractual service partner in Switzerland. The company, founded in 1995 and located at the Swiss municipality of Wangen bei Olten, entertains activities in many business sectors and has about 60 employees with manifold professional competences to suit their respective tasks.

Our initial contacts date back about 20 years, and over all these years our cooperation has been intensifying. We trust each other and value each other's expertise, and on this basis we work together to support the customers, about whom Kurt Kutschmann knows, "that the prompt availability of the service partner is the top priority for them." An understandable attitude, as the customer requires a quick solution once a line is defective: the sooner the better, indeed. As every minute a line is out of production, will cost money.



Our customers in Switzerland benefit from the enormous flexibility our partner offers in terms of customer proximity and the competence of excellently trained experts. Here, Mechtop is free to decide for the individual case, which experts will visit the customer, as some are better suited than others in terms of expertise, routine and experience in the mechanical or electrical field. A service partner must be capable of reacting quickly; this availability at short notice will play a more important role than ever in the years to come – this is everyone's conviction.

Mechtop is working for numerous domestic and foreign companies in Switzerland, who, like us, count on the optimum availability and production reliability of their lines at the customers. Moreover, regular machine revisions are inevitable to ensure stable production figures and consistently high product quality. A wide range of machinery and expertise from various professions enables Mechtop to react quickly – around the clock.

Remo Jäggi, Head of assembly at Mechtop, points out that Reichenbacher lines are to a large extent customised machine solutions. "Servicing these lines presents manifold challenges. You have to have a certain routine in order to repair a 5-axis milling head, for example," he says and adds, "Each of our fitters draws from his own specific know-how. Therefore, upon getting a service order we have to clarify first what exactly it is about. Only then our team can be put to optimum use." The professionals are also on site for the assembly of new lines, "as for about 12 years we have taken care of the precise installation and commissioning of Reichenbacher lines in Switzerland."

In addition, Mechtop invested in a VISION-FLEX in 2017, purchased in the course of a substantial order for the machining of aluminium extrusion profiles. Kurt Kutschmann greatly contributed to the decision-making process, as his expertise enabled him to convince the experts at Mechtop that this CNC-line would open up to them an entirely new economic sector.

REICHENBACHER HAMUEL

**SERVICE
PARTNER**



Company premises Mechtop AG
Untere Dünnerstraße 33
4612 Wangen bei Olten
Switzerland



Another mainstay to add to the existing comprehensive product portfolio:

- **Special machinery and plant construction:**
Experienced project managers accompany the customer through the entire development and manufacturing process right up to commissioning. The result are ground-breaking solutions from steel or chromium steel.
- **Metal and steel construction:**
Specialists produce top-quality platforms, railings, staircases and elaborate steel constructions.
- **Conveying technology:**
Specifically in the fields of conveyor technology, automation and robotics, great strides towards Industry 4.0 are taking place. Well-planned and implemented conveyor technology is absolutely crucial for an efficient and trouble-free flow in production and distribution – and often determines whether a process is economical or not.
- **Tank and apparatus construction:**
No matter whether a simple distillation tank, a tank for cocoa mass or sophisticated special solutions with agitator, controls or heatable jackets are required – the specialists at Mechtop AG will explicitly respond to customer requirements.
- **Pipe and steam pipe construction:**
Perfectly welded pipes and cleverly planned distribution systems are essential for the productivity of industrial plants.

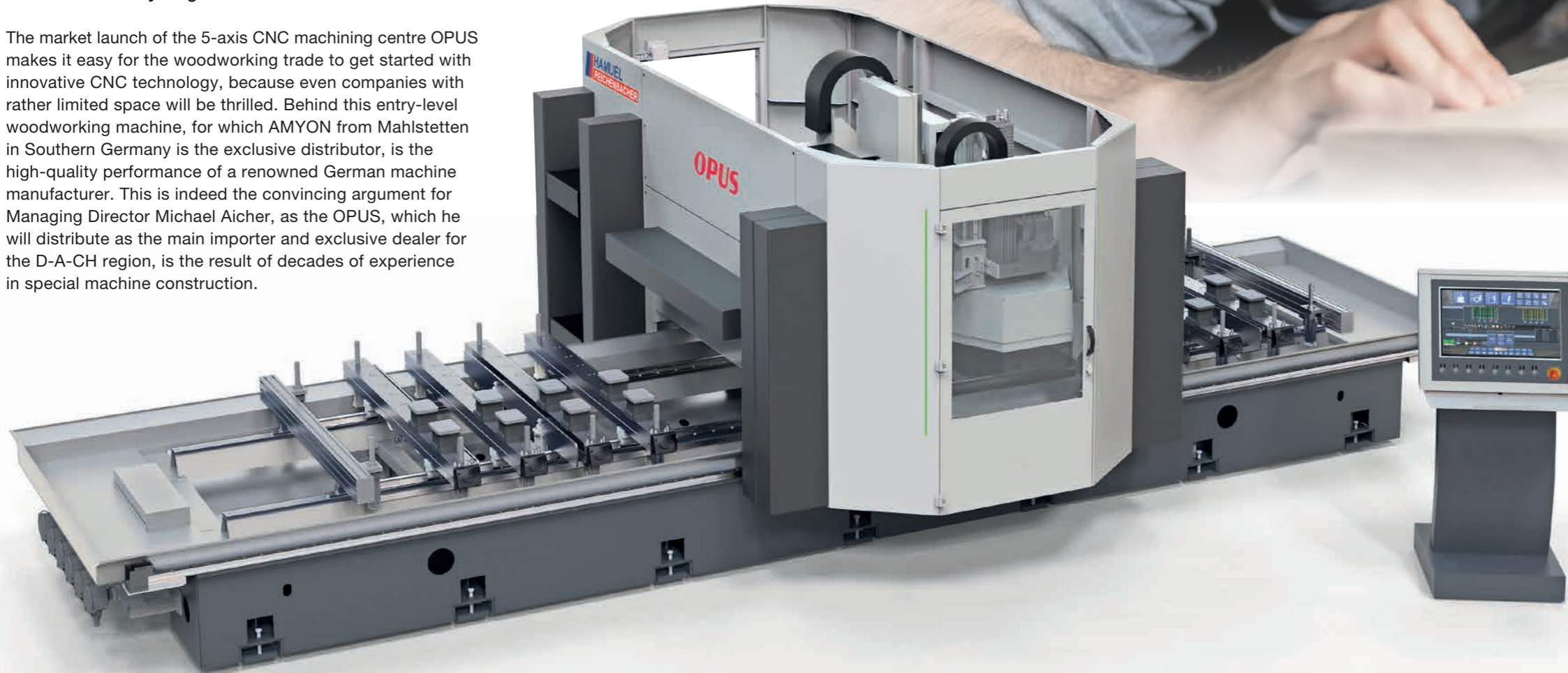
"Customer dialogue is at the centre of everything we do. We are convinced that this is the only way to create the best solutions," says Managing Director Stephan Studer.

OPUS – the new standard in wood craftsmanship

AMYON: our distributor for the OPUS.

The same applies to machines and to great cars – if their technology fascinates you, you want to have them. Sometimes, however, there are reasons that impede an investment – but not any longer.

The market launch of the 5-axis CNC machining centre OPUS makes it easy for the woodworking trade to get started with innovative CNC technology, because even companies with rather limited space will be thrilled. Behind this entry-level woodworking machine, for which AMYON from Mahlstetten in Southern Germany is the exclusive distributor, is the high-quality performance of a renowned German machine manufacturer. This is indeed the convincing argument for Managing Director Michael Aicher, as the OPUS, which he will distribute as the main importer and exclusive dealer for the D-A-CH region, is the result of decades of experience in special machine construction.



“These are craftsmen who on the one hand have the financial aspect in mind, but often are mainly confronted with limited space in their workshops. And it is precisely to them that we now want to make this performance accessible.” Carpenters and joiners sometimes are in charge of very individual projects, such as the replacement of window frames in historic buildings as well as the furnishings for hotels or private buildings.

The clearly defined technical specifications of the new OPUS meet their requirements. The industrial controller from Beckhoff, equipped with NC-HOPS, the leading programming software, immediately catches the eye. In addition, components from Schmalz Vakuumtechnik provide for sophisticated industrial technology. This 5-axis machine guarantees technological progress: you work faster, more flexibly, more precisely and, thanks to mechanisation, more competitively. The compact machine design allows its use even in the smallest of spaces, and the exceptionally high Z-axis enables component sizes that some of these specialists would not have dared to tackle in the past. This plant will open up completely new fields of activity and, above all, permit the realisation of higher-volume projects.

Michael Aicher bought AMYON, registered as SIEMAC before, in 2018. He explains why he renamed the company and turned it inside out to make a fresh start. “I had a vision: it is most important to have reliable, internationally operating machine manufacturers at one’s side. And by reliability I don’t simply refer to the quality of a machine, but above all to the after-sales service and the delivery of spare parts.” He is firmly convinced that after-sales service is more important than ever and will therefore make it a central issue in his company. This is precisely why Reichenbacher came on board in 2020 in addition to the COSTA sanding belt machines. “After many intensive consultations with Managing Director Thomas Czwielong we agreed that there was a segment in the woodworking trade where investing in a Reichenbacher had perhaps been only a wish until then.”



**AMYON**

Michael Aicher,
Managing Director of AMYON GmbH.

Where craft businesses are concerned, in the long term this machine scores in terms of investment security: they can be sure that they will still be supplied with the same components, such as motors and plugs, in 10 to 15 years’ time. The OPUS is therefore safe to run for a very long time. Not to mention the favourable service costs and ready availability of after-sales service from the two established German companies in the background.

After completing his technical training in a metalworking company and subsequently studying for an iBBA, Michael Aicher, who describes himself as a typical child grown up with machine-building, has gathered many years of experience at home and abroad. Following his last managerial job in the Middle East and his return to Germany, he wants to break new ground with his company AMYON. The OPUS has been the first step in this direction.



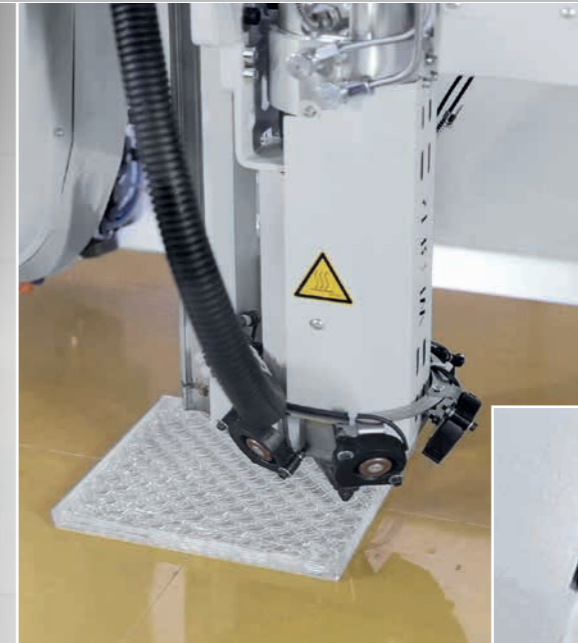
Additive manufacturing technology

Highest demands on large-format 3D printing and CNC post-processing.



Dr. Alexander Nam (1st from the right) from Reichenbacher and experts from Weber Additive were available to answer questions during the three days of the webinar.

The new hybrid machine meets even the highest demands for the combination of large-format 3D printing and CNC post-processing.



Subsequent to their melting in the extruder, a nozzle deposits the granules on the printing table in layers.



The cardanic 5-axis working head permits the high-precision three-dimensional machining of free-form surfaces and contours during and after 3D printing.



Link video hybrid machine

Two companies have combined their profound knowledge in the development of a hybrid machine: Reichenbacher Hamuel high-class CNC competence and Weber Additive extensive experience in the field of extruder technology. This unique collaboration is the key to significant savings in costs and time.

In cooperation with Weber Additive, we have developed a machine concept that integrates large-format 3D printing and CNC post-processing into a single system. Presentation of this new hybrid machine to the public took place at a three-day digital live event in February 2021. Experts from both companies were available to answer questions and there was a great deal of interest from the audience: everything was addressed, from large-format direct extrusion to smallest individual part manufacturing, and the online participants enlivened the discussion rounds with numerous questions.

Dr. Nam, who is in charge of 3D printing at Reichenbacher, says, "Additive manufacturing technology opens the door to completely new manufacturing approaches. Many of these processes are still too expensive and too slow for industrial use today. After all, it is crucial here to produce large quantities in a short time at competitive costs. In comparison to traditional 3D printing machines, the new hybrid unit offers several advantages: it is faster, it uses low-cost plastic granules and it permits 5-axis machining during and after 3D printing."



For carrying out the printing procedure, a modified extrusion screw draws the plastic granules into the extruder and plasticises them. A conveyor system automatically feeds the plastic granules from the dryer unit, where dehumidification takes place, directly into the extruder. Subsequent to their melting in the extruder, a nozzle deposits the granules on the printing table in layers.

Large-volume and extremely resilient components can be produced without any problem thanks to the continuous additive printing process. Post-processing of the component is necessary after 3D printing in order to achieve the desired accuracies and perfect surfaces. As it is equipped with a cardanic 5-axis working head, our hybrid machine is capable of performing the three-dimensional machining of free-form surfaces and contours in the well-known Reichenbacher quality.

Moreover, a protective cabin completely encloses the machine and guarantees optimum chip removal. This leaves nothing to be desired in terms of occupational safety and environmental protection.

The hybrid machines are highly dynamic and predestined for reducing costs in production while maintaining high productivity. Their special feature, apart from the variable machine sizes, is above all the variety of options with regard to their technical equipment, both in terms of the units and the extruder models. Weber Additive relies on the experience of the extrusion division of Hans Weber Maschinenfabrik, which has been one of the technology leaders in this field for decades.



Discover new perspectives



© fotolia

CNC-technology to get you started!

HAMUEL
REICHENBACHER
Members of the **SCHERDEL**Group

Reichenbacher Hamuel GmbH
Rosenauer Straße 32 · D-96487 Dörfles-Esbach
Phone: +49 9561-599-0 · Fax: +49 9561-599-199
info@reichenbacher.de · www.reichenbacher.de

MC 03/21