

# 360°

The elumatec AG magazine



**08**

## SBZ 122/75: A one-of-a-kind machine in its category

While it's true that production for the brand new SBZ 122/75 5-axis profile machining centre is just getting started, it has become clear that many customers are eagerly waiting to get their hands on one. This should come as no surprise, as the unit comes with various outstanding features that show elumatec raising the bar once more. In fact, no other system in this market segment offers greater versatility for a broad variety of applications or larger profile dimensions, all while taking up a minimal amount of space.

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## Introduction



Dear customers, business partners and friends of the elumatec Group,

This year's trade show season has been pressing full steam ahead since the moment the first cold months of the year started. For us, being present at important industry events is absolutely indispensable, which is why we've already been at events in Germany, Brazil and the US this year, for instance. Yet there is still a very important highlight up ahead for us: BAU in Munich, an event that takes place every two years. In a few weeks, from January 16 through 21, 2017, we will be showcasing our brand new SBZ 122/75 5-axis profile machining centre for the construction industry community. You may be wondering what exactly makes this machine so special: in short, an interdisciplinary team has developed the SBZ further to meet our customers' needs to a t. In fact, no other system in this market segment offers greater versatility for a broad variety of applications or larger profile dimensions, all while taking up a minimal amount of space. And our customers seem to like the results: we're already getting orders for the SBZ 122/75, and production hasn't even kicked off yet.

Without a doubt, continuous innovation is one of the things that characterises elumatec. Or, better put, innovation combined with reliability and a long product service life. Accordingly, a large number of time-tested SBZ 130 3-axis centres, the first generation of which was put into operation back in 1992, are still doing their job with the same precision as always. In fact, some of these profile machining centres are still running on the DOS operating system – a veritable relic from another era. However, these machines are far from becoming relics themselves, as our latest profile machining software, eluCad, is designed to manage machining programs in a non-machine-specific manner that makes it compatible with these tried-and-true DOS elumatec workhorses. So much so, in fact, that machining programs for these machines can be created with just a few clicks, providing profile machining centres from the DOS era with a whole new level of efficiency that relies on eluCad's convenience and broad variety of functions.

This time around, windows used in the Antarctic have made it all the way to our customer profile section, where we present Marlex, a company from northern Croatia. 13 years ago, two friends, Aleksandar Vugrek and Marijan Rauš, decided to specialise in the production of plastic windows and doors, among other things. Since then, they've turned their company into one of the fastest growing in their country, and today employ 140 people and have customers all over the world. In fact, Marlex windows are installed in shipping container houses in the South Pole to protect their inhabitants from the cold as of this writing. In order to keep driving its expansion, Marlex recently invested in a new vinyl window and door manufacturing system made by our partner Stürz. Nebojša Wosel, who is the Regional Director for Southeastern Europe at elumatec, has provided expert support every step of the way since Marlex's foundation. Or, as Aleksandar Vugrek puts it: "Nebojša knows our company and our needs like the back of his hand. This means he knew exactly where we wanted to head and was able to provide us with a perfectly custom-tailored solution".

Of course, our Mechanical Engineering, Electrical Engineering, and Research & Development department specialists are also go-to experts when it comes to anything having to do with any component or wire in our machines. We carried out a 360° interview with them in order to find out more about the importance of virtual 3D models when it comes to pushing the envelope of what is feasible. Moreover, they revealed some of the secrets that enable them to ensure that elumatec keeps its competitive technological advantage. In fact, there was one answer that I liked in particular: "We constantly and proactively explore uncharted waters so that we can be one step ahead of our customers' needs".

In order to ensure that you can get a comprehensive overview of the latest innovations developed not only by elumatec, but by our partners as well, we will be hosting our second elumatec TechDays in the fall of 2017. After the resoundingly positive feedback we got regarding our three-day event last year, we have decided to have a TechDays event every two years at our headquarters in Mühlacker. We will make sure to keep you up-to-date with additional details and specific dates.

I would like to wish you and your loved ones a Merry Christmas and a healthy and successful New Year!

Ralf Haspel

A handwritten signature in black ink, appearing to read "R. Haspel".

CEO  
elumatec AG



## Behind the scenes: An interview with Engineering Pushing the envelope as far as it will go

The specialists at our Mechanical and Electrical Engineering departments, together with Research and Development, are the people who get the ball rolling when it comes to elumatec's products. Their goal: To provide customers with the best solution at the best price. For more details on how they manage to do that, what projects are in the pipeline and how they intend to keep increasing customer value, we at 360° interviewed Sascha Czirr (Head of Engineering), Bernd Eggert (Head of Mechanical Engineering), Matthias Ludwig (Head of Electrical Engineering) and Volker Schmidt (Head of Research and Development).

**Mr. Czirr, as the Head of Engineering, you've been coordinating all the work performed at the Mechanical and Electrical Engineering departments and at Research and Development since the summer of 2016. What are your goals?**

**Sascha Czirr:** Customers want increasingly shorter product release cycles, and we need to address application needs even faster than before. To this end, we will be optimizing our internal processes and focus even more on teamwork between our individual departments, all while making sure that we maintain the same high quality standards as always. This is the only way we'll be able to stay one step ahead of the competition in the future while simultaneously keeping an attractive price/performance ratio for our products.

**How have the needs of the industry changed?**

**Sascha Czirr:** The market wants increasingly automated and efficient machines, which means that the importance of control technology has increased tremendously during the past few years. In fact, a machine's control system is what determines most of its performance capabilities today. When we look at trends such as Industry 4.0, it's clear that the importance of control engineering will only continue to grow.

**Matthias Ludwig:** The electrical system is what constitutes a machine's nervous system. In fact, almost every machine process is controlled with it. This means that both mechanical and electrical engineering aspects are always involved in any customisation, no matter how simple it may appear to be.



fm.l. S. Czirr, V. Schmidt, B. Eggert, M. Ludwig

Normally, as soon as we know which functions a machine needs to be able to perform, we proceed to develop the control solution for it. And to be able to do this properly, we make sure to be perfectly coordinated with the people at Mechanical Engineering.

**While we're on the subject of trends: What kind of role does Research & Development play in ensuring that we keep a competitive edge in terms of technology?**

**Volker Schmidt:** When it comes to things like energy efficiency, ergonomics, and lightweight materials, it really pays for itself to look beyond our own noses and learn from other industries so that we can push the envelope in new ways. We tend to take the latest developments in a variety of areas, such as

### “Staying one step ahead of the market”

process engineering and materials, and test them with the goal of figuring out what kinds of improvements we can get out of them. Take lightweight materials, for instance: These materials not only enable us to make machines quickly, but also to save energy. In other words, we constantly and proactively explore uncharted waters so that we can be one step ahead of our customers' needs.

**Could you give us a couple of examples that illustrate how you've raised the bar?**

**Volker Schmidt:** Well, the new SBZ 122 series features a bunch of innovations from R&D. An example in the area of ergonomics would be the new safety systems that allow operators to work more closely to their profiles. Other functions that increase efficiency and have been incorporated into standard production include an inclined machine bed, linear motors for aluminium machining and new power solutions.

**Where does the inspiration for new developments and modifications come from?**

**Bernd Eggert:** Well, for starters, we're in direct contact with our customers through Sales and Application Engineering. A pretty big part of our day-to-day work consists of working on customer orders, that is, on application needs for which we develop solutions. We know our machines inside out.



Bernd Eggert is a mechanical engineer and leads the Mechanical Engineering Department, which has 24 staff members.



Volker Schmidt is an innate aerospace engineer who is in charge of driving the Research & Development Department forward with his five-person team.

Every single component. Every single screw. And in addition to this, we regularly conduct feasibility studies for requests from our customers. When you put those two together, it means that we know early on how our customers want to use their machines and what they want to achieve by doing so. That provides plenty of inspiration for new developments and enhancements to our existing machines.

**Volker Schmidt:** And in addition to that, we also conduct market analyses and visit customers on-site. Among other things, this makes it possible for us to learn more about how our customers work – things such as which profiles are machined with which tools. That information serves as a basis when fleshing out our development plans.

### “We need to address application needs even faster than before”

**What's your approach when it comes to meeting our customers' needs as closely as possible?**

**Sascha Czirr:** We start by putting together our customers' needs and the market's needs in a performance specifications document. After that, we check how the idea can be implemented in real life. Basically, everyone tries to figure out what is mechanically possible and what is electrically possible.

How far can we take things before we run into an insurmountable barrier? What kinds of new drive systems and materials are out there? This is the stage when new developments from R&D are incorporated. And then we define the machine's performance limits in regard to speed, applications, tools, axes and investment costs, that is, all the characteristics that will enable us to fulfil our customers' needs and the market's needs the best.

**So how do you identify the limits that define what's still feasible?**

**Bernd Eggert:** When it comes to the mechanical aspect, we primarily use finite element analyses (FEA). A finite element analysis is a virtual method that we can use to simulate the behaviour of components under a variety of conditions on a computer by using the appropriate CAD data. The results we get from this type of analysis provide us with important information on force and stress curves and on things such as the machine's vibration characteristics. And since we want our machines to always be as light as possible while retaining a highly dynamic performance, this is invaluable, as it allows us to determine, for instance, where we need stiffening or where wall thicknesses can be reduced. Basically, these finite element analyses enable us to optimise our machines without having to make a prototype first, which saves an enormous amount of time when it comes to the development process.

**Matthias Ludwig:** We use a specially developed simulation program as well. This program lets us display the entire machine virtually in 3D and simulate processes in real-time, which lets us identify where the limits of what is feasible are.



Matthias Ludwig is in charge of Electrical Engineering, which has 25 staff members.

For instance, we can determine process times for our customers, that is, how long they will need for a specific machining operation. This all enables our programmers to develop, test and fine-tune the corresponding software at Engineering before the machine is even built, which reduces our time to market significantly.

## "To provide the best solution at the best price"

**Customers want not only a cutting-edge solution, but also one that meets their needs to at. How do you achieve that?**

**Sascha Czirr:** With a modular design and a foresighted development approach that considers all alternatives and options during the engineering process. In fact, this made it possible for us to implement a variety of expansions for the SBZ 122 by only making it necessary to change a few components. This was the key to being able to provide our customers with the best solution at the best price.



Sascha Czirr is a mechanical engineer with over 20 years of experience in the industry, and has been the Head of Engineering at elumatec since the summer of 2016.

**Can you tell us a little about what you're working on right now?**

**Sascha Czirr:** Well, it goes without saying that we don't want to reveal too much yet, but I can tell you one thing: We're working on various enhancements to existing machines and on a new generation of multi-axis profile machining centres that we want to showcase at FENSTERBAU FRONTALE 2018.

## Trade fairs in review

### Windows, Doors & Facades, Dubai (United Arab Emirates)

**The SBZ 628 elicits an enthusiastic response from experts**

The very first "Windows, Doors & Facades", held in Dubai from September 18 through 20, 2016, proved to be a resounding success – both for the organisers and for elumatec. Together with other global brands in the industry, the German world industry leader is one of the trade show's founding members. "We finally have a proper industry platform in the Middle East that is geared towards the window, door and façade manufacturing industries," explains Ayman Droubi, executive partner at elumatec MiddleEast, while recounting the outstanding response to the event despite the fact that Glasstec took place at the same time in Düsseldorf. More than 5,000 visitors from 64 countries filled the halls – and most of them made sure to head towards elumatec's booth first. The reason? The SBZ 628 profile machining centre, which elicited an enthusiastic response thanks to its groundbreaking versatility and automation and not only drew record numbers of visitors, but also became the talk of the town at the trade show. "We established some very promising contacts, talked to many prospective buyers and showed why we're the leaders in this industry," Droubi summarises.



### VETECO, Madrid (Spain)

**A noticeably positive mood**

Automated solutions were the focus at Veteco, the international trade show for windows, façades and structural glazing that was held at Madrid's exhibition centre from October 25 through 28, 2016 and that clearly showed one thing: the economic situation is starting to heat up. For instance, the exhibition space was twice as large this year, and the number of exhibitors grew thirty percent to a total of 260. Together with its partner Aptec, elumatec showcased a series of relatively small machines at its booth of just under 220 square meters. These included the EP 124 corner crimper, the MGS 142 mitre saw, the AS 170 1-spindle copy router, the ZS 720 2-head welding machine, and the WSF 74/03 automatic water slot router. "A lot of experts from all over the world visited our booth, including many customers from South America. It was very clear that visitors were much more interested in general than two years ago," says Andreas Pum, Aptec's Managing Director, when summarizing the company's successful participation at Veteco. Our partner Stürz, which showcased a new welding method, shared this view. The method, called ContourLine, joins visible surfaces without welding beads, eliminating the need for cleaning and producing a higher-quality impression.



## SBZ 122/75: A one-of-a-kind machine in its category

While it's true that production for the brand new SBZ 122/75 5-axis profile machining centre is just getting started, it has become clear that many customers are eagerly waiting to get their hands on one. This should come as no surprise, as the unit comes with various outstanding features that show elumatec raising the bar once more. In fact, no other system in this market segment offers greater versatility for a broad variety of applications or larger profile dimensions, all while taking up a minimal amount of space.

When customers order a profile machining centre even before production has ramped up, it's clear that there must be something quite special behind it. And that may very well be an understatement when it comes to the SBZ 122/75. The 5-axis system, which has been designed for window and door manufacturing, is able to machine PVC, aluminium and thin steel profiles with a length of up to 3,300 mm (optionally with overlength machining) and dimensions of 210 x 230 mm on five sides with one single clamping operation. "This type of machining capacity and versatility is usually found only in significantly larger and more expensive systems", says Achim Schaller, who is responsible for developing the software for the system, when explaining why exactly this system is considered to be a prime example of cost-effectiveness with soaring demand.

### Maximum expansion. Minimal space

A team featuring members from our Production, Engineering, Application Engineering and Sales departments developed the SBZ 122/75 with one thing in mind: our customers' needs and requests. Which also meant there were a few tough nuts to crack. After all, even though the SBZ 122/75, with an additional A-axis and C-axis, is the largest expansion in the newly designed SBZ 122 family, one of the requirements was for it not to take up more space than the 3-axis centres from the same series. A challenging engineering problem to be sure, but not one that could not be overcome with a clever platform approach: "Replacing fewer components was the key", reports Dieter Grau, who works at the Mechanical

Engineering department. This translates into an enormous advantage for companies that specialise in window and door manufacturing: They can perform all the profile machining operations they need on a single station that takes up a small amount of space, saves a significant amount of time and features the precision characteristic of all elumatec products.

### Precise as always, versatile as never before

All five axes can move simultaneously with RTCP (Rotation Tool Centrepoint). Moreover, the additional C-axis makes it possible to machine the face of profiles from the left and right. Another extra: The two-axis add-on unit with the A-axis and C-axis can also accommodate a saw blade with a diameter



Machining head with A and C-axis



Rotating magazine with 12-fold tool changer

of 180 mm, enabling companies to perform all required compound cuts and notches, such as those needed for door spreader bars. This saw blade is held with the automatic tool changer with the spindle, can be inclined from -120 to +120 degrees and can be swivelled from -220 to +220 degrees with perfect accuracy, including all angles in between. The router spindle is sized with a powerful 7 kW, ensuring that it can be used for threading, milling and forming operations. Finally, the speed-controlled drive and the use of optimum drive control parameter sets assist with exact and precise handling across a wide variety of loads.

The "overlength machining" option even makes it possible to machine profiles of up to 6,300 mm on the SBZ 122/75. For this purpose, an additional roller conveyor with a stop can be set up on the left side, or two short roller conveyors can be set up on both sides of the machine instead. "This option is ideal for companies that have to machine workpieces with a length of more than 3,500 mm every once in a while", says Dieter Grau. The machining is programmed for the entire length, with the machine software computing the required part machining operations accordingly.

### Changes on the fly

The rotating magazine with a 12-tool changer and the V-axis with autonomous clamp positioning allow for fast, easy setup and minimise non-productive times. In fact, the latter allows for individual or multiple clamps to be repositioned simultaneously even during ongoing machining. And these features are complemented by a variety of other details designed to enhance productivity, including an inclined machine bed, which was placed 180 mm lower than the standard height of 1,050 mm in order to ensure that profiles can be fed ergonomically, and a height-adjustable control unit.

In addition, the safety hood can be moved back and out of the way in order to make access easier so that operators can work as closely as possible to the profile. The SBZ 122/75 is controlled with the eluCam GUI, which is intuitive and easy to use. Moreover, all inputs are made on a touchscreen with clearly laid out user interface screens. "Due to the wider range of applications, we expanded the software in order to make it possible to easily enter new machine operations such as complex notches", Schaller says. In addition, options such as an input wizard make it easy to quickly show new operators the ropes as they are guided through the input menu and assisted by a visualisation of the workpiece on the machine PC so that they can correctly enter required data, such as the profile geometry and the profile machining operations. This is further enhanced by functions such as a validation check, which comes as standard, and an optional 3D preview, which help ensure that programming will be error-free.

### Debut at BAU 2017

With its enormous versatility, the SBZ 122/75 covers an extremely wide range of requirements and batch sizes in a cost-effective manner while retaining a high level of accuracy and precision. "Its combination of versatility, speed and intelligent technology makes it an ideal choice for users in the metal construction industry", both Achim Schaller and Dieter Grau assure us. If you're interested, you can get a closer look at the advantages that the SBZ 122/75 has to offer at BAU 2017, which will take place in Munich in January.



Profile machining centre SBZ 122/75

## A string of successes reaching all the way to the Antarctic

With a new vinyl window production line, Aleksandar Vugrek and Marijan Rauš are once again pulling out all the stops. 13 years ago, the two friends founded their company, Marlex, with a combination of intrepid entrepreneurial spirit, a passion for cutting-edge technology and elumatec equipment. Fast forward to today, and Marlex is one of the fastest growing companies in Croatia, making windows that have even found their way to the Antarctic.



The Marlex company in north-Croatian Varaždin

It sounds like a Hollywood story: Two friends have a dream of establishing their own company, and not only do they make that dream a reality, but they also manage to conquer the market in the process. It's the kind of happy-ending tale that normally only happens on movie screens, but it's also the story of two real-life people who started their journey in the city of Varaždin, in Northern Croatia, exactly 13 years ago. Since then, Aleksandar Vugrek and Marijan Rauš have seen their company, Marlex, grow at a dizzying rate. The numbers don't lie: The production area, which was originally limited to a modest 200 square meters, is now the size of two football fields. The number of employees working for the company has grown from two to 140. And the company's market has kept expanding further and further beyond Croatia's borders. So much so, in fact, that Marlex windows are installed in

### Quick to adapt, well-versed in the particulars of the industry, and always one step ahead technologically

The two owners, who are fascinated by technology and can always be seen with their smartphone or tablet around, know that having the latest technology is the key to always being ahead in the market. "We make high-quality products. That means that having top-of-the-line quality is just as important as having high throughputs so that we can deliver the excellence expected from our brand even under tight deadlines", owner Marijan Rauš points out. Because of this, Marlex regularly invests both in training for its employees and in state-of-the-art equipment. These two go hand in hand, and Marlex's resounding success shows just how well this policy has been implemented, resulting in a perfect combination of quality, delivery reliability, service and an outstanding price/performance ratio that has proven to be a boon for the company's continuous growth. Marlex's largest market is Croatia, which takes up sixty percent of sales, with units being delivered both to construction companies and to end customers. The remaining forty percent goes to dealers in Europe and from there to the rest of the world, with Marlex focusing on production and on organizing order fulfilment operations. Meanwhile, selected subcontractors are the ones who install the company's windows for end customers, enabling the company to remain lean and flexible while providing customers with one-stop solutions.



A product range with every desired combination

In order to keep driving its expansion, Marlex recently invested in a new vinyl window and door manufacturing system made by elumatec's partner Stürz. The goal: To increase production capacity by maximizing automation. "Stürz' technology is way ahead of the competition in everything having to do with machining and automation. By relying on it, we can also be one step ahead in our market", says Marijan Rauš when explaining the decision behind the investment.



Fully automated production line

For the new line's planning, both owners turned to Nebojša Wosel, who is the Regional Director for Southeastern Europe at elumatec and not only has been in charge of looking after Marlex since the latter's foundation, but has also provided expert support every step of the way. "Nebojša knows our company and our needs like the back of his hand. This means he knew exactly where we wanted to head and was able to provide us with a perfectly custom-tailored solution", Aleksandar Vugrek points out. Together with Stürz staff, the elumatec expert trashed out the new line down to the smallest detail, after which it was delivered on time to Varaždin on 27 trucks and installed there professionally.

### Automation with finesse

The result? One of the most cutting-edge and effective production plants in all of Europe. Every single step – from length cutting, through profile machining, to installation – is automated, meaning that the system can produce 600 window units in a single shift efficiently and effectively. The flagship unit behind this new production line is a modular profile machining centre for vinyl and steel-reinforced vinyl windows and doors. With its eight stations and a 12-tool changer, it can carry out all required standard machining operations simultaneously, including gasket relief milling and transom notching. The two high-temperature turbowelding lines downstream of it perform further work on the machine. Moreover, the automatic allowance adjustment mechanism ensures that different frame installation depths can be handled without a problem.

A single-head and a dual-head machine then take care of the cleaning work. These two machines feature add-on units for special machining operations (arrowhead routing, tilt/turn hinge drilling and corner strap drilling).

After this, the line splits: The frames that are ready to go are stacked, while the sashes are assembled and fastened with a fully automatic process in one-minute cycles and are then taken to the frames via a buffer line. After the frame and sashes are assembled together, the glazing is installed. For this purpose, the glass handling system provides the glass panes just in time, with the delivery system relying on barcodes that are used to identify every single part. Finally, the assembled units either go to the assembly area for blinds or directly into the finished goods storage area.

### Twice the throughput and capacity

With this system, Marlex has doubled its capacity and productivity: "Instead of 600 window units, we are now making 1,200 units in two turns – and with the new line, we only need half the personnel we used to. Or to put it another way, we've laid the tracks for further growth", Aleksandar Vugrek confirms. And in order to catch up with its aluminium operations as well, Marlex has already ordered an SBZ 628 from elumatec. This pass-through centre is designed for non-stop profile machining, making it possible to feed blank bars and obtain fully machined individual profiles sawn to length that can be used for windows, doors and façades. "We want to keep expanding our capacity and increase our productivity and our planning accuracy by means of optimized processes", Marijan Rauš explains. And, not surprisingly, both he and his partner are putting their trust in Nebojša Wosel once again for this investment. Ultimately, they know that this is one of the many steps towards their ambitious goal: to expand their dealer network in Europe.



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## Save the Date BAU 2017



16 - 21 January • Munich  
Hall C1 • Stand 502

SBZ 122 series: the SBZ 122/71. This 3-axis machine, which was presented at BAU 2015 as a proof of concept, has by now become an undisputed best seller. Then there is the SBZ 151, which shows how industrial customers can machine aluminium and steel profiles from six sides with accurate dimensions and a high level of automation. This powerful 5-axis all-rounder can work with a machining length of up to 16,300 mm and can also cut tall façade profiles without a problem. Our double mitre saws (e.g., the DG 244) are also worth a visit, as are a variety of small machines that we are continuously improving in line with new customer needs and market trends. In addition to all of this, visitors at our booth will be able to learn more about the new groundbreaking cloud products developed by elumatec subsidiary elusoft and the machines made by elumatec partner Stürz.

### BAU 2017: Worldwide debuts and new enhancements intended to boost our success even further

From 01/16/2017 through 01/21/2017, elumatec will be showcasing a series of high-performance innovations and solutions for the window, door, and façade manufacturing industries at BAU 2017 in Munich. At the centre of it all will be our brand new SBZ 122/75 5-axis profile machining centre. elumatec will also be showcasing another model from the

## News in brief

### All in the black

The sales figures don't lie: Our SBZ 628 and SBZ 122 profile machining centres have hit the sweet spot as far as our customers are concerned. In the case of the SBZ 628, this became clear at TechDays 2015, where the system was showcased for the first time ever – and where a visitor decided to buy one right on the spot. Since then, more than 40 units of this pass-through centre have been sold from Germany, through the USA, all the way to Namibia and China, and over 30 have been installed at customers' facilities already. Traditional metal construction companies, as well as industrial users that make supply parts for the automotive, aerospace and furniture industries, are the primary buyers of this extremely versatile system. And in the meantime, a mirror version of the SBZ 628 with a right/left machining direction has become available in order to cover all of our customers' needs in relation to their internal logistics. Moreover, effective immediately, there is a longer 10.5 m version for both machining directions available that is designed to provide our customers in the industrial sector with additional options for machining long parts.

The newly designed SBZ 122 series has also received an enthusiastic welcome. More than 70 units of the 3-axis and 4-axis SBZ 122/70/71/74 models have been ordered in total, with 40 of them already in use. Just like the SBZ 628, this series also had its debut at last year's TechDays, where it was able to make a compelling case with a modular design that makes it possible to customise the machine as required for a variety of needs. All versions are based on a cutting-edge, low-vibration platform with a high level of dynamic performance and features such as an inclined machine bed, fast-moving axes and a working area of up to 300 x 300 mm. Components such as a state-of-the-art controller, a controlled drive screw and powerful servo motors ensure precise, energy-efficient and cost-effective machining for steel profiles with a thickness of up to 3 mm, as well as aluminium profiles and reinforced plastic profiles.

### A revolutionary 75% increase in throughput

South African metal construction company CT Aluminium, or, more precisely, Managing Director Richter van Renen and Production Manager Gareth Gilks, got it right: During their visit to TechDays 2015, where the SBZ 628 profile machining centre was being showcased for the first time ever, they decided to sign a purchase agreement for one on the spot. "The system's incredible performance and versatility really left us speechless", says Gilks. Admittedly, however, setting up the machine in February 2016 required for the company to extensively restructure their production operations. Nevertheless, the effort more than paid off: Instead of having to use a series of employees taking care of cutting, marking, and drilling tasks at individual stations, one single person is now enough to take care of everything.

"Once the programs have been prepared, a single employee can operate the SBZ 628", Gilks reports. The company, however, did not lay off a single employee, but quite the contrary: Its personnel went through retraining and is now in charge of carrying out sophisticated assembly work. The pass-through centre's production capacity also led to fundamental changes in the company's window and door manufacturing operations, with Gilks estimating the increase in productivity to be somewhere in the range of 50 to 75 percent. On top of this, the accuracy, quality and consistent performance provided by the SBZ 628 means that CT Aluminium can plan things more efficiently now – to such an extent, in fact, that material losses due to human error have pretty much been rendered impossible. "The entire production process runs much more tightly now. We're actually even one step ahead of what our customers want, which has had a tremendously positive effect on our quality and our lead times", Gilks happily says.

## Breathing new life into tried-and-true “DOS” profile machining centres

Companies that continue to use their time-tested elumatec profile machining centres don't have to give up on the choice of using state-of-the-art profile machining software. In fact, eluCad is designed to enable them to get their machining work done with only a few mouse clicks – even when working with machines with a DOS operating system. The result? Plenty of benefits when it comes to a company's day-to-day operations.

The fact that elumatec profile machining centres continue to work with their original precision and reliability a long time after ten years have passed comes as no surprise to people familiar with them. “Many of our first-generation SBZ 130 3-axis centres, which in 1992 raised the bar for profile machining and of which we've installed a lot more than 1,000 units worldwide, are still going at it today”, reports elumatec Software Sales Manager Gunnar Lange. “What many users don't know, however, is that the convenience and wide range of functions offered by our latest eluCad profile machining software can translate into tangible cost-effectiveness and profitability improvements even when it comes to profile machining centres running on a DOS operating system”.



Gunnar Lange, Software Sales Manager at elumatec AG: “Tried-and-true DOS machines can benefit from our state-of-the-art eluCad profile machining software too.”

And since eluCad manages machining programs in a non-machine-specific manner, these programs can be used again at any time on any elumatec machine. All a user needs to do is select the right “target machine” that will be used to do the job.

### Eliminating the need for hard-to-find qualifications

Another important advantage is the fact that eluCad is intuitive and easy to use, something that becomes obvious as soon as one looks at the alternative: DOS machines with long tables and countless ISO code lines. These machines require machine operators with extensive expertise and a unique ability to visualise things in their mind. In contrast, eluCad simply shows the actual profile and the machining operations that have been entered. The fact that the workpiece is displayed in a multi-dimensional visualisation interface, combined with clearly laid out input fields that users can easily fill out with the relevant production data, makes work much easier.

### Once a program is ready, it can be used time and time again

eluCad runs on normal PCs, preferably with a connection to the relevant company's network. This is of enormous advantage to any company, regardless of whether it is using a single elumatec machine or an entire plant full of elumatec profile machining centres.

In addition, this gives companies added flexibility when it comes to finding qualified personnel. “Nowadays it's much easier to find personnel who can handle the Windows-like layout of eluCad than DOS specialists”, Gunnar Lange explains. Certainly not an unimportant aspect when one considers that the sudden absence of a DOS expert can result in production grinding down to a halt when conventional DOS programming is in use. That's where eluCad shines: By allowing programs to be created by Work Preparation personnel instead, it enables companies to hire personnel with less stringent qualifications.

### A treasure trove of know-how

eluCad's wide range of functions also gives companies more flexibility by ensuring that they don't depend on the knowledge of a single employee. In other words, by providing these companies with the cumulative know-how provided by elumatec subsidiary elusoft. This is achieved by means of functions such as path and tool optimisation, collision checks and tool assignment. “eluCad does these things automatically, saving time and significantly increasing the reliability of our customer's profile machining operations”, Gunnar Lange explains.

### Automated data imports

eluCad also saves time and effort when importing data from upstream window manufacturing software. While it's true that DOS machines can also import this data directly, implementing required changes is extremely time-consuming, whereas eluCad makes it easy to modify and add to imported data. Moreover, the software has a variety of automated data import options. When importing 3D data, eluCad will use a 3D model to identify the various relevant profile dimensions and machining operations in a matter of seconds – even when sophisticated industrial components are involved – and

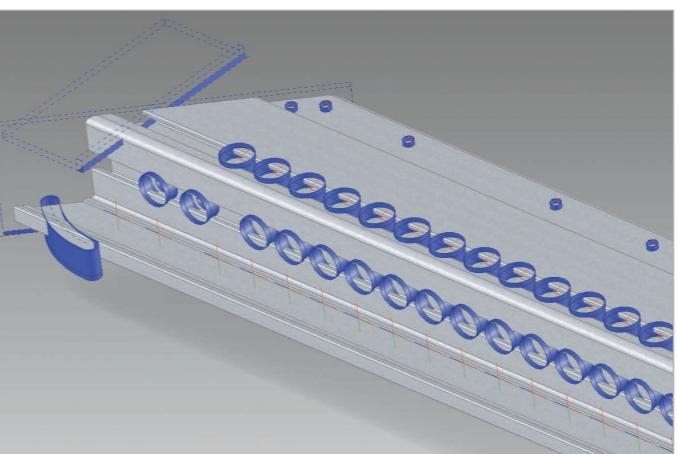


Thanks to eluCad, even older profile machining centres such as the SBZ 130 can be made more flexible and profitable.

automatically generate the appropriate machining program. Meanwhile, the CSV import function is an effective solution for extensive jobs, such as making 100,000 similar, but not identical, façade parts. When using this option, eluCad will use the job data in an Excel table to automatically program the necessary machining operations.

### Versatile options

Customers can use modules such as the bar optimisation module, bar machining module or clamp management module to customise eluCad according to their specific needs. “For companies that want to keep working with their tried-and-true elumatec DOS machines, eluCad is an ideal way to reach a whole new level of efficiency”, Gunnar Lange says from experience after talking with various users. In fact, using the software not only represents a step towards greater profitability and productivity for these companies, but also a step towards the future.



When carrying out a 3D import, the profile cross section and machining operations will be automatically determined on the basis of 3D models and converted into a machining program in a matter of seconds.

On top of all this, elumatec focuses on making sure that customers can easily take advantage of the benefits provided by eluCad. Gunnar Lange explains: “We've actually put together a very attractive package for eluCad that we can offer to our customers with special terms (purchase or financing). This package includes the latest version of eluCad, the corresponding training and data import functions for a variety of window manufacturing programs. In other words, it's the perfect way for our customers to boost their productivity quickly and easily.”



elumatec AG wishes you a Merry Christmas and a good start into a successful New Year!

## A preview of the next issue

You can expect the following in our upcoming issue: Read about an inspiring real-life case from the aluminium industry. Take a look behind the scenes and learn more about what Germany Sales can do for you. Find out more about the new cloud products developed by elumatec subsidiary elusoft and the latest trade show news for 2017, as well as other news from the world of elumatec. And, of course, you can also start looking forward to our TechDays 2017 event – we might even let a detail or two slip before the date!

### LEGAL NOTICE

Many thanks to all of our colleagues who contributed to this issue.

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