

REPORT

HSK-E50
Made in Switzerland

FEHLMANN



Close to our customers and practically oriented — at around 40 trade fairs, exhibitions, and events near you

Dealers, potential buyers, technicians and others interested in high-end technology meet at the trade fairs of the machine industry. In this regard, FEHLMANN was again very active in 2016/17 and presented its newest machine models at home and abroad.



At our customer event in August 2016 at the FEHLMANN headquarters in Seon, Switzerland, we presented the new FEHLMANN VERSA 645 *linear*. This machine also caught the attention of the professional audience at the Prodex Basel in November, where the Erowa robot ERC 80 and the FEHLMANN Milling Center Manager (MCM™) were presented, as well as various models of the FEHLMANN PICOMAX line-up. During our in-house exhibition in May 2017, we were joined by renowned co-exhibitors and partners and thrilled our visitors with a live presentation of all FEHLMANN machines. Recently, FEHLMANN also exhibited its line-up at the EMO in Hannover, Germany. True to the exhibition's motto "Connecting systems for intelligent production", FEHLMANN focused on automation solutions with standard and customized systems which can be incorporated into an existing environment.



We are looking forward to your visit

We are already looking forward to meeting you again at a fair, an event or in our technology center in Seon, Switzerland. For the latest dates on fairs and events, visit www.fehlmann.com.

Workshops

Practice-oriented workshops for customers and other interested parties

On a regular basis, we organize practice-oriented workshops at our premises in Seon, Switzerland — for customers and anyone interested in cooperation with renowned partners. In October 2017, we conducted a technology workshop covering tool and workpiece measurement using Blum-Novotest measuring technology.

We keep our customers as well as those interested in FEHLMANN and its products updated on upcoming events, trade fairs, and exhibitions. Would you like to receive your own personal invitation via email? Just send your contact information and email address to mail@fehlmann.com. We would be pleased to add you to our mailing list.



Productivity comes first!

It is fascinating to see ever new possibilities unfolding in precision machining: just recently, for example, a large Swiss tool manufacturer, in cooperation with a CAM system provider, managed to reduce machining times not only by a few percent, but by a significant amount, using the 'circular arc milling strategy.' They were also able to keep tool wear incredibly low!

In the same way that 'trochoidal milling' enabled a huge leap ahead in productivity, this new method for 5-axis simultaneous machining with variable conical end mills will also have an enormous impact on tool-making and on parts machining; for example, with regards to the finishing of cavities. In order to enjoy the benefits of this machining method, several requirements must be met — modern CAD/CAM systems, as well as state-of-the-art milling tools, dynamic, precise and low-wear drive systems, as well as a versatile machining center which has been designed to withstand such high loads while attaining maximum machining accuracy.

In addition to conventional machining methods, our new high-performance machining center VERSA 645 *linear* perfectly fits this new field of application. Go to page 6 to find out why the features of this new machine will get you excited as well!

These new and amazing possibilities are not of much use, however, if the experienced and motivated professionals in your workshop and your programming/process planning specialists are not properly trained. Training enables them to understand the challenges they and their colleagues face, so that they can take these into account in order to optimize productivity.

Our ongoing topic of training and education will most likely become even more important in the next few years. The main reasons for this are demographic development, as well as recent critical media coverage regarding the machining industry. The number of young people entertaining the thought of beginning a career in the precision machining industry is decreasing. This is a major threat, as industrial manufacturing is the foundation of progress and our economic prosperity. However, we all have the ability to counteract this trend. Whether at home, during club activities or for example at a barbecue with friends: us talking with passion about our fascinating work in the machining industry and thus letting this profession shine in the splendour that it most certainly deserves can make a difference.

I hope that you will enjoy reading this magazine and send to you my best regards

Frank Fehlmann, CEO

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Events at Fehlmann AG Seon/Switzerland



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Highest quality standards through targeted investments

Highest precision, reliability, efficiency and productivity are quality features of the FEHLMANN milling machines, as well as the FEHLMANN manufacturing processes. Our quality management ensures continuous development and optimization of our processes and structures. This ensures that you, the FEHLMANN customer, always enjoys the highest levels of satisfaction and quality.

From the very beginning, FEHLMANN has been invested in our production site in Seon, Switzerland. We are constantly improving our equipment and production methods based on the latest progress in technology — to ensure that our processes become even faster and more efficient.

To name just one example, the assembly lines for the PICOMAX 75 and PICOMAX 56/56 L TOP series have been modified according to the principles of lean production. This enables us to react even more quickly and dynamically to the constantly changing market conditions.

This also helps to fulfill the ever-growing requirements more efficiently and in an even more productive manner. Changes and improvements can be directly integrated into the production flow, in order to achieve shorter cycle times and enable faster deliveries — a significant added value and benefit for our customers and employees.

Ongoing investments in state-of-the-art production and environmental technologies, simple, efficient processes and longstanding expertise guarantee high-level quality, reliability and safety.

Guaranteeing for continued success and stability are approximately 180 qualified, experienced and motivated employees, all of whom identify themselves with our company and espouse to give their best to their jobs.

Come see for yourself: premium products, innovative technologies and a business culture based on fairness and team spirit is what Fehlmann AG is all about!



Successful certifications — sustainable environmental and quality management

The certification criteria of the “International Organization for Standardization” (ISO) have again been successfully fulfilled with regard to quality management (ISO 9001:2015) and environmental management (ISO 14001:2015).

The ISO 14001 certificate proves that Fehlmann AG has implemented clear environmental objectives into its management and production processes. Even before the certification, however, a responsible attitude with regard to nature and the environment has always been an integral part of the FEHLMANN business philosophy. “Quality” has been our guiding principle for more than 80 years and our main objective has always been to develop machines which, at the very least, meet current requirements. In addition to precision, ergonomics, ease of use and reliability, this also includes sustainable resource management.

The international standard for environmental management (ISO 14001) defines rules for the organization of operational structures and procedures, regulates planning, implementation and control processes, and also sets out responsibilities, modes of behaviour and best practices.

Attaining the ISO 14001 certification was an important and necessary step for Fehlmann AG, as this is the internationally accepted standard for environmental management systems.

To this end, we spared no effort: from the definition of the contents and core objectives of environmental management, the restructuring and optimization of internal processes by means of high-quality HR training, to extensive process documentation, as well as environmentally-friendly management of hazardous



material and ongoing investments into state-of-the-art energy efficiency measures such as our recent integration of modern LED lighting technology into our production hall.



Learn more about the sustainable FEHLMANN business culture at:

www.fehlmann.com/en/company/environment-and-sustainability

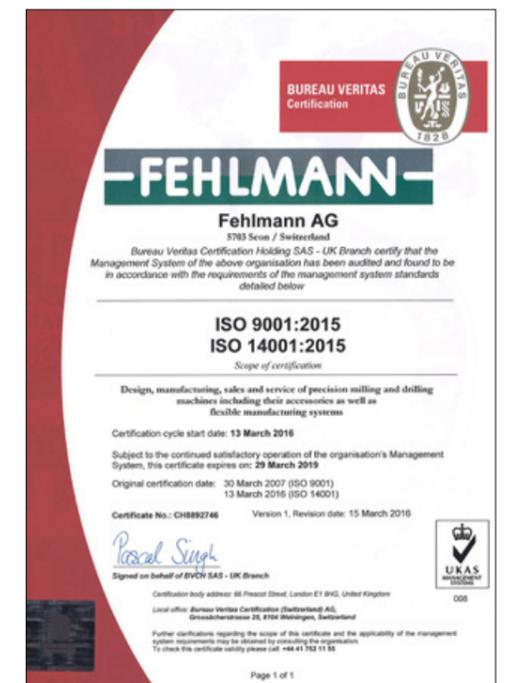
Heidenhain training partner

FEHLMANN has been the official and certified Heidenhain training partner for TNC programming since 2008. Our qualified and experienced team of trainers combines theoretical with hands-on training and conveys the know-how you desire using state-of-the-art machines and control system technology. When participating in our courses, you can rest assured that you will learn the skills you need, as well as specialist knowledge, firsthand.



For further information on training courses and individual modules offered, visit: www.fehlmann.com/en/services/training

Alternatively, you may also contact us directly. We will gladly provide you with a quotation for a training course tailored to your needs.



The debut of the **VERSA® 645 linear** — highly dynamic 5-axis precision parts manufacturing

In summer 2016, we were able to present our new **VERSA 645 linear** for highly dynamic 5-axis machining to an audience of interested customers and media representatives in Seon. Compared to the **VERSA 825**, the new machine places an even stronger focus on highly dynamic trochoidal milling, hand in hand with a compact design.



VERSA 643 linear for precise and highly dynamic 3-axis machining
Instead of the integrated tilting rotary table, the 3-axis version features a table with a clamping surface of 620 x 500 mm — perfect for high-precision and highly dynamic 3-axis machining.



The development team of the **VERSA 645 linear**

The new machine caught quite some attention — not only from our customers, but also from the many media representatives who attended the presentation.

The following is an excerpt from an interview by the trade journal SMM with FEHLMANN's CEO, Frank Fehlmann:

Quite recently, you have presented the new **VERSA 645 to the public for the first time. What are the main differences to the already established **VERSA 825**?**

F. Fehlmann: "One important difference lies in the size; the new **VERSA 645 linear** has been designed for cubic part sizes from approx. 100 to 250 millimetres. The maximum pallet size is 320 x 320 mm. The linear drives of the new **VERSA 645 linear** predestine this machine for highly dynamic applications. The new machine perfectly supplements our product range. Both **VERSA** machines place the emphasis on precision, efficiency, user friendliness and, of course, the ability to be fully automated. What the customer wants is a machine for fast, accurate and reliable production — also in unmanned operation. The new machine perfectly meets these requirements. The basic concept is principally the same for all **VERSA** machines; also, the capabilities for automation and expandability are identical. Thanks to its very high stability and cutting efficiency, as well as its extremely high dynamics, the new **VERSA 645 linear** offers performance at the highest level and also advantages in the field of short-stroke applications such as multipass milling with high surface quality."

For the **VERSA 645, you have chosen linear drives for the first time. What impact does that have on the overall machine concept?**

F. Fehlmann: "In terms of direct drives, we have had good experience with the torque drives, which we have been offering since 2009. After all, a linear drive is nothing else than an unwound torque drive. What is important is to keep the moving load as small as possible. Therefore, it is necessary to use highly durable materials with high stress resistance for the slide components. In this connection, we use high-strength nodular cast iron. Also, the mass in proportion



Presentation of the 5-axis production system at EMO Hannover 2017:
5-axis machining centers **FEHLMANN VERSA 645 linear** and **VERSA 825** with pallet handling systems and rack-type magazine for 225 or 250 tools



to the resting masses must be designed so that the highly dynamic forces can be absorbed by the machine structure. In other words, the basic structure must be heavy and rigid, while the moving masses must be optimised so that a robust machine can still be built. The optimisation of the masses and the best possible rigidity of the slide components must, therefore, be given special consideration."

For more details technical data, visit www.fehlmann.com or give us a call. We will gladly answer your questions.



Reveal of the new **VERSA 645 linear**

Want to experience FEHLMANN machines in action?

We've got you covered — you can access the FEHLMANN-YouTube channel right here!





Heidenhain TNC 640 with touch screen on a FEHLMANN VERSA 825

Machine, software and automation in perfect harmony

High-end control technology for highest dynamics, accuracy and reliability

FEHLMANN machines are equipped with the latest control technology to ensure state-of-the-art, simple, quick, and at the same time, reliable operation.

The Heidenhain control unit TNC 640 is used with all VERSA and PICOMAX machining centers. The fast block processing, short control loop cycle time and fast data transfer facilitate high machining efficiency and machine dynamics.

The Heidenhain control unit, with visibly improved graphics resolution, is perfectly tuned to FEHLMANN machines — thanks to the wide array of integrated, practically-oriented machining cycles, developed by FEHLMANN. It guarantees highest accuracy and surface quality while, at the same time, enabling high machining speeds.

The TNC 640 and the TNC 620 are available in the standard version with screen and keyboard, as well as a version with touch screen and keyboard. The operation via touch screen connects the typical advantages of proven Heidenhain control units with the intuitive operation by means of gestures such as touching, swiping, and dragging — for modern and even simpler control of your machine.

Digitalized and networked with Heidenhain Connected Machining — another step towards Industry 4.0

The Connected Machining function package supports the networking of the TNC control units with all production-related areas in your company. This way, it is possible to realize consistent digital order management for production. The advantages are work simplification thanks to easy data usage, time-saving procedures and transparent processes during production — even for single-unit batches. Feel free to consult us about how you can discover this modern form of communication for your workshop.

Whether you are planning a new automated plant or want to expand your existing systems — we have the necessary know-how and, if you so desire, will provide you with a turnkey solution for your project.

FEHLMANN offers different solutions for automated production of single parts and small batches. Whether in connection with a single machine, with automation for two machines or with a linear automation system: FEHLMANN machines can be fitted with a variety of automation concepts at any time — easily and without restricting operation.

Thanks to the open system architecture, FEHLMANN machining centers can be integrated into existing networks quickly and efficiently. Integration into production management systems such as for example Erowa, Soflex or Promot, or tool identification via barcode — the system will be tailored to your needs.

Depending on customer requirements, number of pallets and variety of parts, the systems may be controlled and monitored by a pallet management file integrated into the control unit or via the FEHLMANN Milling Center Manager MCM™. The FEHLMANN MCM™ Milling Center Manager ensures maximum flexibility for cost-effective production of a wide variety of parts — even for single-unit batches. The proven FEHLMANN MCM™ software solution, which is constantly being improved and updated by FEHLMANN, is based on open industry standards and may be run both on a separate screen and directly on the TNC operating panel.

A complete system from a single source

- The systems are set up and tested at our factory with the customer's configuration.
- 25 years of experience in automated 5-axis technology allow for optimal and proven solutions perfectly tailored to customer requirements.
- Software and hardware are continuously improved to meet current requirements.
- Our customers also benefit from the professional services we provide: starting from consultation before purchasing a machine to training, commissioning and maintenance.

On this page you can see just a few examples of the many individual automation projects which we had the pleasure of realizing together with our customers. Feel free to contact us any time for additional information.



VERSA 825 and PICOMAX 75 with Erowa Robot Dynamic, FEHLMANN MCM™



Articulated-arm robot FMB for handling blanks on a PICOMAX 75



LANG ECO Compact 20 on a VERSA 825, actuated via M functions



Linear automation solution consisting of two VERSA 825 with rack magazine for 346 tools each



Articulated-arm robot and Goodj automation system on a VERSA 825 with rack magazine for 346 tools



Articulated-arm robot for handling pallets and blanks on a VERSA 825



Gibas articulated-arm robot and Soflex job management system on a VERSA 825

Technology transfer

3D machining, thread milling and drilling with carbide? A few years ago, this was still deemed impossible — now carbide can be machined with milling and drilling processes. The embossing and punching dies created using these processes feature longer tool life compared to their counterparts created via EDM. In addition, they also provide increased flexibility and shorter response times.

Threads can be cut directly into the carbide dies so that the time-consuming EDM process and the soldering of threaded bushes are a thing of the past. 3D shapes (from one solid piece or via reworking) can be milled into sintered carbide dies without EDM.

Drill holes and threads can be easily programmed based on predefined cutting data directly on the machine. 3D surfaces require know-how regarding the correct cutting strategies and, thus, a comprehensive understanding of the overall picture, consisting of tool, machine and CAD/CAM.

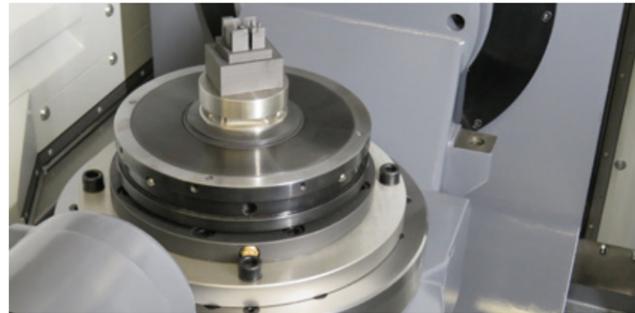
Fehlmann AG has been dealing with this technology for many years and has attained the necessary know-how in corporation with competent partners from the metal cutting industry. Today, FEHLMANN machines offer anything you need for precise workpiece machining while guaranteeing maximum tool life.

As a FEHLMANN customer, you will also benefit from our practice-oriented know-how transfer, which will make your first steps with this technology so much easier.

Cost effectiveness and efficiency depend on the desired shape and type of carbide to be machined. Feel free to contact us — we will gladly discuss your specific situation.



Carbide



Graphite

Graphite machining — the perfect solution for any requirements

Dry

Machining of copper, graphite and hardened steel on a single machine — dry or wet. We will provide you with a complete system perfectly tailored to your requirements. If the machine shall be used exclusively for dry machining, we will deliver it without a coolant system. The guides and spindles are protected with special strippers and may be provided with additional covers. An air blow/extraction system is used to remove the dust from the entire machining compartment.

Dry/wet

In case of a combination of graphite dry machining with extraction and, e.g., copper electrode production by means of wet machining, wet and dry milling may be carried out on the same machine. Usually, the machine will then be equipped with the standard coolant system. For wet machining, the graphite extraction nozzles can be removed without much effort and, depending on the machine type, cover plates can be used to reliably seal the machine. The machine must be cleaned before switching from wet to dry machining and vice versa.

Wet

Different variants are available for wet machining of graphite — the exact configuration of the system depends on the expected amount of graphite dust. The graphite dust generated during milling is rinsed off by the coolant emulsion and then filtered out of the emulsion via special separator systems. Feel free to contact us — we will gladly provide you with additional information.



For individual parts, devices and modern training for the professionals of tomorrow

FEHLMANN machines — the sure foundation for efficient production of individual parts, tools and contemporary professional job training.

From manual to dynamic CNC machining with trochoidal milling

The versatile FEHLMANN milling machines PICOMAX 56 TOP and PICOMAX 56 L TOP (with extended X-stroke) are ideal for the production of individual parts and small batches. The FEHLMANN operating concept with TOP functions (Touch Or Program™), developed exclusively for this machine series, allows for quick, safe and efficient operation of the machines without time-consuming programming. Parts can be machined based on CAD/CAM programs and minor reworks can be added manually later on. Furthermore, it is also possible to quickly and easily create clamping devices. Even personnel without programming experience will be able to use these machines very effectively after only a short introduction. Thus, they are also ideal for training purposes (introduction to CNC).

New Heidenhain control unit TNC 620 with modern multi-touch function

The FEHLMANN PICOMAX 56 TOP and PICOMAX 56 L TOP are now also available with the new Heidenhain TNC 620 with multi-touch function.

In the new version with touch screen, the TNC620 now supports you with a particularly innovative and user-friendly operating concept, combining the proven advantages of the Heidenhain control units with a new form of operation by means of touching, swiping and dragging.

FEHLMANN PICOMAX 21-D and PICOMAX 21-M (with motor table) — robust and with a large scope of application

The follow-up model of the proven PICOMAX 20-D/20-M is a robust precision coordinate drilling and milling machine with high operating comfort. Ideal for conventional machining as well as the “first steps” during apprenticeship and for production of individual parts and small batches.

Via the integrated motor table (M version), hole circles, dot patterns and rectangular pockets can be approached with lightning-fast speed in manual as well as automatic operation. Input is simple and comfortable via the digital display's touch screen. Glass scales and ball screws ensure long-lasting high production quality.



Heidenhain control unit TNC 620



Heidenhain control unit TNC 620 with touch screen

Trimos and FEHLMANN — focusing on the quality of products and service

Good things take time to ripen. Sometimes, this is also true for fruitful cooperation. It certainly was for Trimos and FEHLMANN. The two companies first met at a machining seminar ... but first things first:

The production plants of Trimos are located in Renens. Here, Trimos designs and manufactures its entire range of measuring instruments. Since its foundation in 1972, the company has specialized in height gauges and horizontal measuring instruments and, via its partner company Sylvac, it also offers hand measuring tools. Sylvac focuses on the electronics, while Trimos' specialty is mechanics. Today, both companies are working in close collaboration: Thierry Keist, Trimos' Chief Marketing Officer explains: "Sylvac and Trimos complement each other. While Sylvac specializes in small measuring instruments, we offer larger devices such as height gauges and horizontal measuring benches."

Ultra-precise measuring instruments — 100% Swiss workmanship

Trimos employs around 50 people. In Switzerland, its products are distributed through Brüttsch-Rüegger while, on a global scale, the company is working with exclusive agents. Trimos' tailor-made ultra-precision products are used wherever dimensional measurement is needed for machining operations and especially where measuring or monitoring instruments (ring gauges, gauges, etc.) must be calibrated. The product range comprises 3 product families: height gauges, horizontal measuring benches and surface analysis instruments (for roughness measurement). All Trimos products are manufactured and assembled in Switzerland.

Shared values establish the foundation for a long-term partnership

The two companies first met at a machining seminar. FEHLMANN and Trimos engaged in first conversations. It took a few years, however, for Trimos to re-establish contact. In search for the perfect machine tool, the company contacted the big players in the industry and visited the major trade fairs. Thierry Keist recalls the quite disappointing results: "Very often, we felt that the other companies looked down on us. The machine tool manufacturers didn't seem to be interested in collaboration with a small company like ours. We experienced this over and over again." In this situation, they remembered the name FEHLMANN — and this changed everything. "From the very beginning, the relationship between Fehlmann AG and our company has been harmonious and has taken place on a level playing field. We immediately felt esteem and appreciation. We realized very soon that our two companies shared various similarities in terms of company philosophy: both are medium-sized and both manufacture high-end products that are made in Switzerland. It is these shared values — and not only the impressive performance characteristics of the machine — that brought us together, even if these characteristics alone make the Versa 825 a must-have!"



The FEHLMANN VERSA 825 has a small footprint and excellent accessibility, even with automation and peripheral systems.

High degree of automation for maximum productivity and flexibility

The VERSA 825 features an unobstructed tool changer with rack magazine for 186 tools which allows the operator to have a good view of the tools at all times. The machine is complemented by a twin-screw chip conveyor and a belt filter, a cutting fluid container with a capacity of 1050 litres, an 80 bar high-pressure unit, an oil mist filtration unit and the excellent Robot Multi system by Erowa for pallet loading and unloading. The capability of the robot to load pallets during the machining process was the decisive argument for the purchase. The use of Robot Multi is considerably enhanced with the FEHLMANN MCM™ (Milling Center Manager) system. Gérald Truan, precision engineer at Trimos, is one of the operators working with the VERSA 825 machine: "We are currently producing more than 30 different parts on this machine. We work in two shifts of eight hours each and only on working days. Soon, we will be able to tap into the full potential of our machining center."

Customer service as decisive factor for new investments

FEHLMANN also takes care of any periphery-related issues for its customers. Next to the high quality of the products, FEHLMANN also offers excellent service and great responsiveness. Thus, it will be no surprise if this partnership continues for many years to come — in particular because FEHLMANN and Trimos share the same ideology. There are certain things which money cannot buy: respect, consideration, an open ear and passion for what you do.



Read the full version of the article on www.fehlmann.com/en/media

The uncompromising design of Labconcept Nano offers a high-performance platform for measurement and calibration of all types of measuring instruments.



A premium alliance for more than 5000 operating hours

Even though automatic production has been Nedinsco's bread and butter for 20 years, flexibility still takes an important role. Three years ago, the company decided to invest in the FEHLMANN VERSA 825 machining center and the ERS robot system by Erowa. Since then, this combination has been running for more than 5000 hours a year.



With the VERSA 825 by Fehlmann, the company managed to reach 5000 operating hours a year in two shifts, including unmanned operation.

The company needed a machine that was able to produce a large number of small parts in unmanned operation. After intensive testing, the Dutch company Nedinsco B.V., based in Venlo, decided to invest in the FEHLMANN PICOMAX 90 machining center. The machine provided flawless performance and, in conjunction with the automation solution by Erowa, Nedinsco managed to reach almost 4000 operating hours a year. Based on this experience, the company invested into two PICOMAX 54 machines for their prototype workshop. In 2014, the next project was on the horizon in Venlo, and, although Wim Peters, Production Manager at Nedinsco, describes the FEHLMANN machines as stable and precise products which require little maintenance, he did not decide to invest in another FEHLMANN machine right away. Instead, he sent a request for tender to five top-league machine tool manufacturers. In the end, however, it was the FEHLMANN VERSA 825 in combination with the ERS robot system by Erowa and the job management system JMS Pro which left the competition behind. For Wim Peters, this turned out to be the right decision in every regard, up to this day: "We would never consider investing in a low-cost solution instead of in a premium machine. Back then, we knew that the VERSA 825 machining center was the ideal machine for our purposes since it provided us with the much required flexibility and was able to easily reach the precision of two µm we desired. Also, reliability was of great importance to us as our machining shop provides the supplies for our assembly department. Any delay in delivery due to a machine failure would be a disaster. Sure, we could have purchased a less expensive machine, but one has to consider that we machine cost-intensive parts in small lots. And due to the very tight tolerances we absolutely cannot afford to produce a single defective part."

Offers not comparable

According to Wim Peters, low-cost alternatives are a tricky business anyway, as it has become almost impossible to compare the offers of the machine tool manufacturers with each other. Whereas FEHLMANN machines come equipped with

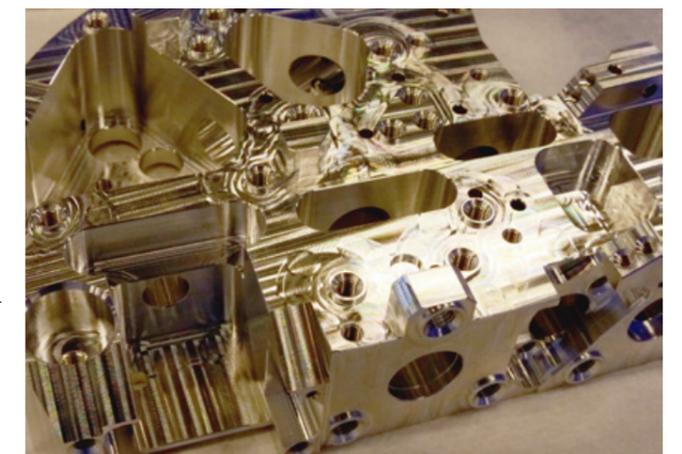
all necessary features, including the required high precision, with other brands many options that allow precise manufacturing must often be added to the base price. Furthermore, the Venlo-based company regards production reliability as another big advantage of the FEHLMANN machine. The older machines by FEHLMANN impressively demonstrate what reliability actually means. The original range of workpieces, with tolerances of a few hundredths of a millimeter, has been manufactured on these machines since 2000.

Blind understanding supports high turnover

And the current VERSA 825 is in no way inferior to them in this respect. Meanwhile, 5000 operating hours have been achieved in two shifts, including unmanned production — effortlessly cutting cast iron, steel and aluminium. Tools do not have to be changed anymore, thanks to the high-capacity rack magazine for up to 218 tools. This also reduces sources of malfunctions. According to Wim Peters, there is a simple reason for people at Nedinsco again tending to decide in favour of a FEHLMANN machine: "As long as our range of workpieces does not change in terms of tolerances, size and complexity, one has to come up with really good reasons to convince us not to invest in FEHLMANN. Plus, where automation is concerned: When thinking about purchasing a new system, you really would like to avoid spending even more money on new clamping systems fixtures or pallets. In other words: for us, the combination of FEHLMANN and Erowa is a made-to-measure solution." Furthermore, the decision makers in Venlo are also planning a new workpiece range which is to run for three years. Again, this project is subject to the closest of tolerances. However, the focus is placed on quantities and unit costs, instead of flexibility.



Read the full version of the article on www.fehlmann.com/en/media



At Nedinsco, mainly cost-intensive parts in small lots are being manufactured. Rejects are, therefore, out of the question, which is why Nedinsco exclusively invests in premium machines.

Regular maintenance ensures high productivity of your machine

In order to continuously keep the life span, reliability and effectiveness of your FEHLMANN machine at the highest possible level, we offer preventive maintenance service. At regular intervals, different maintenance tasks are carried out by qualified FEHLMANN service technicians. The maintenance flat rate includes the following services:

- Functional check as well as mechanical and electrical adjustments on defined main units
- Defined wear parts
- Working hours
- Travel costs and expenses for our service technician within Europe; costs for other countries are charged based on actual expenditures

Once all tasks for the regular maintenance package are completed, other repairs can be carried out on a time and material basis.

We will gladly inform you about our machine-specific service packages and provide you with a corresponding offer. Feel free to contact us.

FEHLMANN service packages — your advantages:

- Maintenance in fixed intervals (of 3000 or 6000 operating hours)
- Cost control thanks to attractive package prices
- Minimized downtime and increased efficiency
- Increased life time of the entire system
- Increased productivity
- Increased machine uptime
- Reduced operating costs
- Consistently high product quality
- Consistently high accuracy



FEHLMANN PICOMAX® machining centers — a success story that has already lasted for more than two decades continues with the next generation

Today the proven FEHLMANN PICOMAX 3 and 5 axis machining centers are proud to present the newest generation — with the models PICOMAX 75 and PICOMAX 95. These new machines combine state-of-the-art technology with excellent ergonomics, optimal energy efficiency and maximum productivity.

Around 20 years ago, the two FEHLMANN machining centers PICOMAX 60 and PICOMAX 90 laid the foundation for modern HSC milling with 3, 4 or even 5 axes. Today, more than one thousand of these machines are being used every day around the globe.

Based on experience and due to increasing requirements, this series has now been optimized and technically improved. The result is the new duo consisting of the PICOMAX 75 and PICOMAX 95.

The high spindle speeds and powerful torque, generous clamping table, excellent accessibility and high precision of the retrofittable 4th/5th ATS 200 DD axis, as well as the versatile modular design and the possibility of automation are only some of the features which FEHLMANN customers appreciate and experience firsthand during practical use.



The FEHLMANN assembly and commissioning team in front of the last PICOMAX 60.

Today, FEHLMANN offers a well-rounded and modern product portfolio: from the simple manual drilling/milling machine to CNC milling machines and high-performance machining centers, as well as HSC milling machines with or without automation.

Learn more on our website www.fehlmann.com or visit us and enjoy a live presentation.



PICOMAX 75 und PICOMAX 95, the state-of-the-art FEHLMANN duo for 3 to 5 axis precision machining — shown here as two-machine production line with Robot Compact 80 pallet management system.



**Machining centers
in portal design**



Machining centers



Milling / drilling machines



Service / accessories



Automation

Your Precision Advantage.®



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