

REPORT

FEHLMANN



PICOMAX[®] 75

A Revolutionary Break-through in Precision Milling



The Best of Both Worlds: A Global Company that's Always there for Its Customers

Direct exchanges with our customers are important to us and we always find them of great interest, both at home and abroad. This is why we show at trade fairs around the world.

In 2012 and 2013, as a Swiss family-owned business, we exhibited at leading trade shows in Switzerland, Europe and overseas. As in past years, we had the opportunity to meet lots of interesting new people and to conduct highly rewarding conversations with them. One of the key milestones for us was undoubtedly the unveiling of the FEHLMANN PICOMAX 75 at Prodex 2012.

We always find direct and personal contact with our customers to be both exciting and inspiring. And so we're very much looking forward to seeing you, our customers, at a forthcoming trade show or at our headquarters in Seon, Switzerland.



The FEHLMANN trade show team



INTEC—Leipzig, Germany



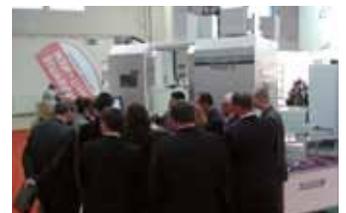
MACH-TOOL—Poznan, Poland



BI-MU Rho—Milan, Italy



Die & Mould—Shanghai, China



Metalloobrabotka—Moscow, Russia

For updated information on trade shows and events visit www.fehlmann.com



Prodex—Basel, Switzerland



Standing still is tantamount to moving backwards

Dear Customers, Employees, Suppliers, and Friends of the FEHLMANN company

The double whammy of currency market upheavals and companies moving their operations offshore poses a major challenge that

both supply companies and end-product manufacturers need to face. What's needed are quicker and more reliable response times for smaller production batches, more precise tools and lower costs for all these elements. In order to remain viable market players, we need to steadily increase our productivity.

Advances in the manufacturing technologies continue apace, while new cutting materials, coatings, and cutting geometries require improved spindle performance and machine dynamics.

5-axis machining, which has become a staple of today's production processes, allows for ever greater precision and shorter machining times. Workpiece automation for lightly manned operations during weekend or night shifts or the like has become standard at many high-tech plants. Materials that were once regarded as too exotic or difficult to work with are now machined on an everyday basis. In order for companies like ourselves to remain viable market players, we need to systematically equate standing still with moving backward, lest our competitors overtake us. We need practical and proven solutions that don't turn into experimental projects.

At FEHLMANN, we've been successfully addressing these challenges for quite some time. For example, in this issue of Report you'll find information about matters such as the proven and optimized solutions offered by our new FEHLMANN PICOMAX 75, based on our extensive experience with 5-axis machining, motor spindle engineering, and automation. In 2014 we'll be celebrating the 20th anniversary of successful marketing of FEHLMANN's proprietary 5-axis CNC solutions with and without automation. So we encourage you to benefit from our experience for your own manufacturing needs.

I'm particularly proud of the fact that we, an independent family-owned business that makes its products right here in Switzerland, have successfully and without any outside help weathered the unprecedented economic crisis of 2009, as well as the turbulence in the currency markets. This achievement is largely ascribable to the exceptional motivation and capacity for innovation on the part of our staff. I would like to take this opportunity to express my heartfelt gratitude to them.

Here at FEHLMANN, we always welcome the opportunity to discuss with you, our valued customers, our solutions for your production needs. I'd like to thank all of you for your confidence in us and look forward to future opportunities to conduct a dialogue with you.

Yours sincerely,

Frank Fehlmann
Managing Director

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Certified reliability

Ready for the challenges of today and tomorrow

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Modern Production Facilities Are the Best Guarantee of Quality

We invest in our machine fleet on an on-going basis so as to ensure that our entire production chain meets our exacting quality and precision standards.

When you work with Fehlmann AG, you can count on your orders being fulfilled by an expert and experienced in-house team, whose skills and abilities enable us to achieve a high degree of vertical integration that offers substantial and quantifiable advantages in the medium to long term. Thus for example, all of our quality and precision related operations are carried out by our own staff. Our lean processes make us more efficient, enable us to deliver more quickly and ensure that our customer service staff is always available to meet our customers' needs. And perhaps most important of all, the high degree of vertical integration that we have achieved enables us to conserve resources.

Capital investments that pay off

Companies with a high degree of vertical integration need to keep a close watch on their machine fleet and continuously update it—which is why at FEHLMANN we continuously incorporate the latest technologies into our production machinery and other equipment. The machines that our operators use are ergonomic and allow for systematized lean production processes. And needless to say, the many advantages of this approach work to the benefit of our customers as well.



Our technologically cutting edge machine fleet enables us to precisely machine large and complex parts.

FEHLMANN PICOMAX® 56 TOP (Touch Or Program™)

The TOP machine for manual and CNC applications features our innovative operating concept, which allows for user friendly, rapid and economical operation.

PRODUCT FEATURES AND ADVANTAGES

- Supports both manual and CNC applications for economical milling of small production batches and individual parts.
- Our innovative operating concept combines 3-axis CNC with manual operation using drilling levers and hand wheels.
- Rapid and efficient, also for operators without programming expertise.
- The Heidenhain TNC 620 and graphically supported cycles allow for simple and economic milling of complex parts.
- High performance, versatile.
- Space saving thanks to its ergonomic and compact design.





New FEHLMANN Demonstration Centre in China

In economically dynamic China, the FEHLMANN sales and service affiliate opened its doors in 2011. Fehlmann China Ltd. is located around 100 kilometres from Shanghai in the town of Suzhou in Jiangsu province.

The FEHLMANN team in this pure sales and service affiliate mainly works with existing customers from Europe, as well as with new customers from China. Our staff knows Chinese culture and the local customs inside and out, and has been able to successfully provide our customers and marketing partners with all the support they need.

The resounding success of our Chinese affiliate to date has prompted us to expand our activities in China. To this end, Fehlmann China Ltd. will be relocating from its current space in Suzhou Industrial Park to a building in the Free Trade Zone. The new building is optimally suited for our planned spare parts warehouse, from which we will be supplying customers throughout Asia.

Fehlmann China Ltd.'s activities mainly include:

- Customer service and training
- Winning new Chinese and international customers
- Strengthening the presence of the FEHLMANN brand in China
- Providing support for our local marketing partners

Fehlmann China Ltd. has just moved into the new space. The 800 square meter space comprises a repair facility, a showroom, office space and seminar/meeting rooms and will empower the company to further enhance its activities on the Chinese market.



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R&D

New! FEHLMANN PICOMAX 75



FEHLMANN PICOMAX® 75

A Revolutionary Breakthrough in Precision Milling

Customers are exceedingly pleased the vast number of advantages offered by the new FEHLMANN 3 to 5 axis CNC milling machine.



Rapid and versatile: Rapid retooling and efficient series production of any size down to just a single item—thanks to simultaneous loading and an automatic tool changer that can handle up to 80 tools.



Future proof: Modules can be retrofitted and automated. Plus a latest generation Heidenhain iTNC 530 CNC controller with optimally harmonized dynamics.



Precise: Finished tools exhibit immaculate surfaces and perfect dimensional accuracy, thanks to outstanding precision, thermal stability and a new stability-optimized design for outstanding rigidity.



Saves space: Compact and intelligent design for impeccable accessibility and top notch ergonomics. Palettes measuring up to 320 x 320 mm or a FEHLMANN ATS 200 dividing attachment can be placed on the table.

EXCITING NEW ARRIVALS IN TRUSTED SWISS QUALITY!

The outstanding ergonomics for which FEHLMANN products are renowned make for extremely comfortable work sessions. Thanks to the generous proportions, workpieces are readily accessible on the work table. So why not come by and see for yourself: We would be glad to open our doors for pre-registered interested people and show them the FEHLMANN PICOMAX 75 with all its advantages.



New Generation of Controllers

At FEHLMANN, we've been successfully using Heidenhain controllers in our products for more than three decades and are continuing to do so thanks to the new generation of Heidenhain serial controller interfaces. These solutions offer a whole host of advantages such as user friendly operation and extended tool management.

Heidenhain's fully digital control solutions integrate an optimized movement control system, rapid block processing times, and specific control strategies. FEHLMANN uses the Heidenhain 5-axis machining and rapid HSC machining functions, as well as the electronic hand wheel and various proprietary FEHLMANN cycles.

FEHLMANN has optimized the tool management system and made it more user friendly, making it easier to load tools during machining. Currently loaded tools can be marked and are measured automatically when called for the first time. PDF documents and graphics can be readily displayed on the 19 inch screen.

Integrated machining cycles, graphic support, ample storage capacity and rapid block processing help to make this control solution suitable for all factory requirements.

Marking the 20th Anniversary of: FEHLMANN Automation and 5-Axis Technology

Nearly two decades ago, the FEHLMANN PICOMAX 82 ushered in the era of high speed cutting (HSC) and 5-axis milling technology.

Initial automation solutions such as robotized loading of the milling cell using Erowa robots were implemented. This pioneering innovation has been continuously optimized over the years, and today our VERSA and PICOMAX machine family offers latest generation automation technology thanks to the FEHLMANN MCM 7 (MCM: Milling Centre Manager). The MCM 7 allows for multi-machine solutions for just about any imaginable application.



Short-Bar Feeder for the ATS 200 CNC

An automatic short-bar feeder accessory is now available for the FEHLMANN ATS 200 CNC dividing attachment.

This innovative solution allows for the milling of short bars measuring up to 20 mm in diameter and is notable for its easy handling and rapid setup and dismantling.



An Intelligent Zero-Point Clamping System

A parts manufacturer makes optimal use of the FEHLMANN PICOMAX 56's clamping surface.

To this end, the zero-point clamping system enables the machine to be set up and retooled in the blink of an eye. The machine's configuration allows workpieces to be machined while being held in a vice, and also supports 4-axis machining on the AT 125 CNC dividing attachment.

The customer-designed swivel bridge is mounted on the tail centre of the FEHLMANN machine using a guide sleeve.



A Cause for Celebration: The 1000th FEHLMANN PICOMAX[®] 20

Managing Director Frank Fehlmann appreciated the production of the 1000th FEHLMANN PICOMAX 20 by looking back in history and organizing a small celebration.



FEHLMANN
Type P18



FEHLMANN
PICOMAX 20

The production team for the
1000th FEHLMANN PICOMAX 20



Energy Efficiency and Sustainable Resource Use

As a family-owned business that's steeped in tradition and is also ready to face future challenges, quality has always been our top priority—one that, in our view, goes hand in hand with stewardship of our planet's limited store of resources.

When designing our machines, we pay particularly close attention to power consumption under peak loads, as well as during set up and retooling operations. We make it a point to select the optimal available technologies and drives for all operating modes.

Green manufacturing—a long tradition at FEHLMANN

Our company is proud of its long tradition of environmental awareness. For example, our company's building integrates

optimal insulation, as well as windows whose orientation was carefully planned so as to promote the best possible temperature control and natural light. We also opted for a multi-story building so as to make optimal use of our plot of land.

Moreover, the fact that we make a high proportion of our components right here at our own plant greatly helps to lighten our carbon footprint—as does the fact that we try to minimize our transportation routes as much as possible.

Testimonials

Our precision milling machine, the FEHLMANN PICOMAX 56 TOP, was unveiled to the trade in 2011. Thanks to its patented operating concept, this newly developed machine combines manual and CNC operation—a fast, easy to handle and cost effective solution. The versatility and precision of this machine have been winning over customers ever since its launch.

Today several hundred PICOMAX 56 TOP machines are being used in a host of industries by customers who are exceedingly satisfied with their purchase, as the testimonials below show.



Fijnmechanische Industrie De Berk B.V., Echt, Holland

John Hendriks, proprietor

Fijnmechanische Industrie De Berk B.V., which has four employees, specializes in customized individual parts and extremely small production runs. The company works with STEP files and CAD/CAM. "We already had a PICOMAX 54 in our machine fleet. We needed an extremely precise, top drawer machine to make highly sophisticated one of a kind products. Based on our experience, it was clear we were going to buy the PICOMAX 56 TOP."



PAGET Frères, Morez, France

Gérard und Alain Paget, proprietors

Located in France's Jura region, the centre of the eyewear industry, Paget Frères makes products for the optics industry and precision parts for custom-

ers from sectors such as the watch industry. "For our application domain, the PICOMAX 56 TOP is the optimal combination of classic part machining and CNC production. What also makes it a terrific solution is its readily accessible and robust fourth axis, the highly versatile retooling, and the fact that cleaning the machine is simple and comfortable. FEHLMANN's reputation and our excellent relationships with our points of contact at the company sealed the deal for us. We're looking forward to receiving our second new machine, which will be arriving soon."



Ausbildungszentrum Swissmechanic St.Gallen-Appenzell, St.Gallen, Switzerland

Hanspeter Scheu, President of Swissmechanic
St.Gallen-Appenzell

In its capacity as a training centre, Swissmechanic runs off-site courses for polytechnicians, production technicians and mechanics. "The PICOMAX 56 TOP is the most advanced solution in its class by virtue of its design and construction. Its additional functions are perfect when it comes to training our young learners. Plus the machine has a very compact design. The Heidenhain controller is very widely used in the companies of our trainees. As a family owned Swiss company with a high level of vertical integration, FEHLMANN offers excellent after-sales service, even years after the purchase."



Forsvarets Forskningsinstitutt FFI, Kjeller, Norway

Trond Askeland, workshop manager

Forsvarets has since 1946 been Norway's leading R&D organization for defence technology. The company employs more than 700 people. The company's prototype department supports R&D projects by making highly complex parts that need to be extremely precise. "It's like the PICOMAX 56 TOP was made exactly to our specs. Its extreme precision and outstanding versatility are the main reasons why we opted for it. The combination of manual and CNC machining is also very beneficial for us."



Feinmechanik Jacquemai AG, Alchenflüh, Switzerland

Kurt Jacquemai, proprietor and
Samuel Scheuermeier, operator

As an SMB, the Feinmechanik Jacquemai AG, which has six employees and two trainees, specializes in the manufacturing of injection moulds for small parts that must meet extremely exacting standards. Jacquemai's special tools used in the manufacturing process of screws and gears are particularly in demand from the automotive and watch industry and medical device industry customers. "Hard milling of inserts using the PICOMAX 56 TOP has become routine for us, as has machining delicate copper electrodes. The dividing attachment makes it super easy for us to make cooling channels on round parts. We've been able to reduce our overall production times while still increasing our precision. Thanks to the versatile design of the PICOMAX 56 TOP, we can now come up with completely new types of tool making solutions. We were particularly impressed with how well FEHLMANN was able to give advice on how the machine could be useful for us."



O. A. G. Officina Artigiana Giannini, Genova, Italy

Paolo Giannini, proprietor

O.A.G. makes polymer and thermoset injection-moulded parts, using tools that it makes itself. O.A.G. uses the PICOMAX 56 to make electrodes and gudgeons, mainly out of 50-52 HRC 2343 ESU hot-working steel. "Thanks to the outstanding precision and impeccable repeatability offered by the PICOMAX 56 TOP, our parts need no manual post-processing. This saves us time and money. We opted for the PICOMAX 56 TOP on account of its versatility and high precision."



A TOP Combination of Manual and CNC Applications

Report: The hand wheel and drill handle sealed the deal. A statement like that makes you feel as though you've been magically transported back to the tool machine industry of decades ago.

Thomas Weissfloch, mould making manager at STAEDTLER Mars GmbH & Co. KG in Nuremberg: Strange though it may sound, it's precisely these FEHLMANN PICOMAX 56 TOP attributes that make it such a cost effective solution for Staedtler Mars.

Report: Why is manual operation so important to you?

Thomas Weissfloch: Making simple parts in production runs of up to ten pieces is super quick with the FEHLMANN PICOMAX 56 TOP—and faster than we would be able to program a machining centre.

Report: So does that mean you could use a totally conventional machine?

Thomas Weissfloch: The quantities produced using this manual method wouldn't enable us to use the machine to its full capacity. Thanks to the fully digital Heidenhain TNC620 CNC controller, we can also optimally do larger runs and more complex parts in the time remaining.

Report: Didn't you have a machine in your fleet that you could have simply retrofitted with a controller?

Thomas Weissfloch: This was in fact our first choice at the outset. But we soon realized that the geometry costs plus the cost of a new controller would run us almost as much as buying a new machine. The FEHLMANN PICOMAX 56 TOP also gives us some unique advantages. Whereas our current machine is only a 4,000 RPM model, the FEHLMANN PICOMAX 56 TOP offers an up to 12,000 RPM oil cooled motorized spindle and far greater precision. Plus operation of the controller is intuitive and allows for data transfer without a post-processor via a flash drive.

Report: Thank you very much for your time, Mr. Weissfloch.

FEHLMANN PICOMAX 56 TOP (Touch Or Program™)

The TOP machine for manual and CNC application features our innovative operating concept: user friendly, rapid and efficient operation.



Professionalism, Efficiency and the Personal Touch Are Hallmarks of the FEHLMANN Customer Service

In view of the pivotal role played by machining centers in today's manufacturing processes, it's crucial that our customers be able to count on these machines being fully operational at all times. And thus it's all the more important that malfunctions be eliminated expeditiously and cost effectively. Following is an interview with our customer service manager, Roman Weber, about this critical topic.

Report: In your view, what's the main reason for the exceptionally high level of satisfaction on the part of FEHLMANN customers?

Roman Weber: I think the main reason is the outstanding quality of FEHLMANN milling machines. However, should the customer indeed face any problem, we will find a quick, competent and unbureaucratic solution.

Report: Could you say a bit more about this?

Roman Weber: The service technicians in our key markets—namely Germany, Switzerland and the rest of Europe—work out of decentralized locations. And when it comes to technical training, we work closely with our marketing partners



in Eastern Europe, Asia and elsewhere. This enables us to service our customers with lightning-fast response times and extremely low travel costs. What's more, thanks to our high degree of vertical integration, we always have the required spare parts on hand and can get them to our customers within the shortest possible time, including the use of a courier service, if desired.

Our service technicians, most of whom have many years of experience and all of whom are extremely competent, receive their initial training and professional development training at our own plant. And because FEHLMANN makes all of our products' key parts and assemblies in-house, we have an enormous store of expertise that we can draw upon for both training and product servicing purposes. This greatly reduces labour time.

Report: What's the most notable feature of FEHLMANN's customer service?

Roman Weber: For years now we've been using a highly efficient trouble-ticketing solution in our ERP that keeps problem solving times at our in-house call centre to a minimum. It's vitally important to me that our customers receive personalized and expert after-sales advice, and that their questions and problems aren't relegated to an impersonal off-shore call centre. Thus, our customers never have

to explain their problem over and over again, and this in turn builds trust, saves our customers a huge amount of time and keeps them from getting upset.

Report: What other services do you offer?

Roman Weber: FEHLMANN provides comprehensive maintenance, repair and spare parts services. For example, customers can expect us to, whenever possible, provide pre-configured electronic assemblies for CNC controllers, drives and the like. This in turn greatly reduces the time spent on repairs at the customer's factory. Customers in the European Union can return defective spare parts to our affiliate in Mönshheim, Germany, without customs formalities.



Our in-house repair department offers reconditioned like-new OEM replacement units, and this in turn helps to keep costs down. What's more, while machines are being reconditioned at our plant we loan our customers temporary replacements for elements such as dividers and swivel devices so that the customers can continue using their own machine.

And finally I'd like to mention our in-house call centre, whose staff helps customers resolve problems over the phone—a service that is free of charge. I also feel that, when it comes to efficient troubleshooting and problem solving, personal contact is a decisive factor even in the age of the internet and remote problem solving.

Report: Mr. Weber, thank you for your comments.

Contact information for our customer service departments

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Complex Challenges—Simple Solutions

We sometimes encounter challenging situations in connection with the shipping or delivery of our machines. Thanks to our extensive experience, plus our ability to think out of the box, we're able to arrive at satisfactory solutions even in the face of complex problems. The photos below depict scenarios involving the provisioning, shipping and delivery of various machines.





Certification—Striving to Be the Best that We Can

ISO 9001 re-certification

Fehlmann AG, which is a family-owned business, develops and manufactures precision machine tools for milling and drilling. Since our founding in 1930, we have delivered more than 12,000 machine tools to customers around the globe. All development, production and assembly operations are carried out by the more than 180-strong workforce at our flagship plant in Seon, Switzerland. At FEHLMANN, we do a lot more than just assemble machines. At our high tech production facility, we manufacture precision parts and assemblies with a high degree of vertical integration. Our plant's production processes are ISO 9001 compliant. On 14 March 2013, following an exhaustive external audit, we received re-certification for EN ISO 9001 : 2008. These certifications are our customers' guarantee that the machines they purchase from us will exhibit a high level of availability.

For further information visit www.iso.org



D&B Rating Certificate

Fehlmann AG attaches great importance to reliability. This also applies to the financial sector. In recognition of the healthy state of our finances, in 2011 we received the D&B award for financial stability and outstanding creditworthiness. The D&B Rating Certificate is the seal of quality for Swiss businesses and is their customers' guarantee of reliability and stability. A mere 2 percent of Swiss companies meet the requirements for this certificate.

For further information visit www.bisnode.ch



Job Training at FEHLMANN— A Key Investment in the Future

The youth of today are the skilled workers of tomorrow. We welcome the opportunity to be a socially responsible company by offering quality job training programs.

FEHLMANN invests in on-the-job and professional development training on an on-going basis. For example, we recently installed one of our new FEHLMANN PICOMAX 56 TOP (TOP: Touch or Program™) milling machines in our training area.

FEHLMANN is currently training multi-skilled mechanics, automation specialists and business managers. All of our trainees receive extensive support from us throughout their training.

2012 and 2013 Staufberglauf Running

Our staff members are both physically and mentally fit—which they prove every year by running in the Staufberglauf running. The FEHLMANN team won first place in this challenging event in 2012, and in 2013 our teams were among the frontrunners. Congratulations!



Startnr.	Name	Zeit
1.	Fehlmann AG Technologie	10:58,8
916	Drazan Milekic	10:58,1
915	Marcel Holliger	10:58,6
917	Philipp Siegrist	10:58,8
2.	Hasler AG rot	11:45,2
369	Florian Brüning	11:45,1
368	Helmut Vock	11:45,1
370	Costa Henrione	11:45,2
3.	Malergeschäft Bryner AG I	11:58,1
904	Stevan Marinkovic	11:57,7
905	Lisa Schimmer	11:57,8
903	Robert Schimmer	11:58,1

Rankings for the 2012 event

Rang	Startnr.	Team	Zeit
1.	1210	d'Robischwiler	08:27,5
2.	1212	Team Nutrilite	09:03,3
3.	1209	LG Homberg 1	09:15,8
4.	1207	Fehlmann Lernende 2	09:49,6
5.	1202	Team LG Staufberg	09:53,9
6.	1203	Fehlmann Verkauf	09:54,5
7.	1206	Fehlmann Lernende	10:15,9
8.	1211	Hasler AG	10:46,0
9.	1205	Fehlmann Inbetriebnahme	10:58,9
10.	1204	Fehlmann Einkauf	11:42,8
11.	1208	Fehlmann mixed	11:48,2

Relay rankings for the 2013 event



Gantry machining centres



Machining centres



Milling /drilling machines



Customer service/spare parts

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Your Precision Advantage.®

