



Precision machine tools

PRODUCT OVERVIEW

Highest precision since 1930

fehlmann.com





FEHLMANN Precision “Made in Switzerland” – since 1930

From conception to design, production, training, delivery, commissioning, service and maintenance: FEHLMANN provides all of these services itself. The high quality standard runs through the entire manufacturing process and is reflected in all FEHLMANN products.

As a partner of the Blue Competence sustainability initiative and as an ISO 9001/14001 certified company, FEHLMANN consistently focuses on sustainability in all areas of the company. The focus is on the entire life cycle of the machine, from the initial idea to environmentally friendly disposal. Energy consumption is already taken into account during development, e.g. by using efficient converters for energy recovery. By participating in the EnAW model for energy optimization in medium-sized companies, which is recognized throughout Switzerland, FEHLMANN ensures minimal CO₂ emissions as early as the production stage.

In professional circles, the outstanding FEHLMANN characteristics are considered to be: **highest precision, ergonomics, handiness and reliability.**

With FEHLMANN, you are one step ahead of your competition!

Your Precision Advantage.®



FEHLMANN model ranges



Machining centers in portal design

The FEHLMANN VERSA range stands for precise, dynamic machining of demanding workpieces with highest operating comfort.



Machining centers

Powerful solution for 3 to 5 axis precision machining – versatile, efficient and compact.



Milling / Drilling machines

Flexible, versatile and robust and, of course, with the usual FEHLMANN operating comfort.

State-of-the-art production, infrastructure and competent customer support

innovative

Equipment and production methods are continuously improved and adapted to ever advancing technologies.



quality

Environmentally responsible and resource-saving production processes guarantee excellent Swiss quality.



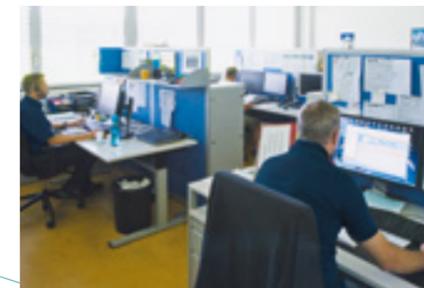
modern

State-of-the-art manufacturing and measuring methods guarantee optimum quality.



personal

We provide our customers with personal, competent service.



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VERSA[®] machining centers in portal design



VERSA 645 / 643 linear

Highly dynamic and precise 5-axis / respectively 3-axis machining



VERSA 745 / 743

Dynamic and precise 5-sided / 5-axis simultaneous machining of parts up to Ø 500 mm. 3-axis version with table for parts up to 800 kg



VERSA 945 / 943

Excellent precision and dynamics, for 5-sided / 5-axis machining of workpieces with a swing circle of up to Ø 650 mm. 3-axis version with table for workpieces up to 1000 kg

PICOMAX[®] milling / drilling machines and machining centers



PICOMAX 56 TOP and 56 mill

TOP version for manual and CNC machining, mill model optimally suited for vocational training



PICOMAX 56L TOP and 56L mill

Even more flexible and versatile in the L version



PICOMAX 21-D / -M

Manual D-version and M-version with integrated motorized table - ultra-rapid, reliable and precise



PICOMAX 95

The all-rounder: 3 to 5 axis precision machining



PICOMAX 75

Powerful solution for 3 to 5 axis precision machining

VERSA® – Machining centers in portal design

The FEHLMANN VERSA range stands for precise, dynamic machining of demanding workpieces with highest operating comfort.

Whether 5-axis machining with positioning, 5-axis simultaneous milling or highly dynamic 3D milling, VERSA machines will convince you with excellent dynamics and the resulting short machining times per workpiece. Weight and stiffness optimized moving parts made of high-strength nodular cast iron guarantee the best dynamic precision.

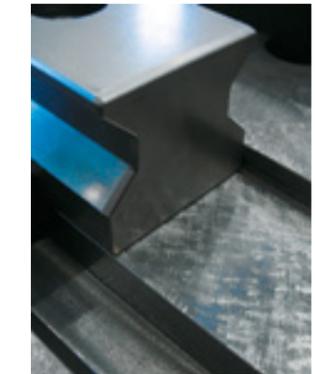
Three sizes are available, each with an integrated rotary swivel table (5-axis version) or fixed, generously sized clamping table (3-axis version).

Depending on customer requirements, VERSA machining centers are available with different motor spindles, well-suited for the most demanding machining tasks.

The VERSA concept is compact, user-friendly, perfectly accessible and can be optimally adapted to a wide range of customer needs. A standard or a customized automation solution can be easily retrofitted at any time, as one side of the machine always remains free for automation.



Precise, stable and highly dynamic



Highly dynamic 5-axis milling

The rotary swivel table is driven directly by cooled torque drives and is integrated horizontally into the X machine axis. This guarantees excellent dynamics, geometric precision and stability for 5-axis simultaneous milling, as well as 5-axis milling with positioning.

Precise machine geometry

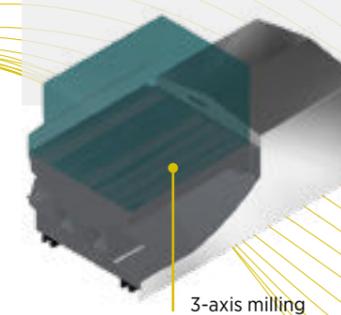
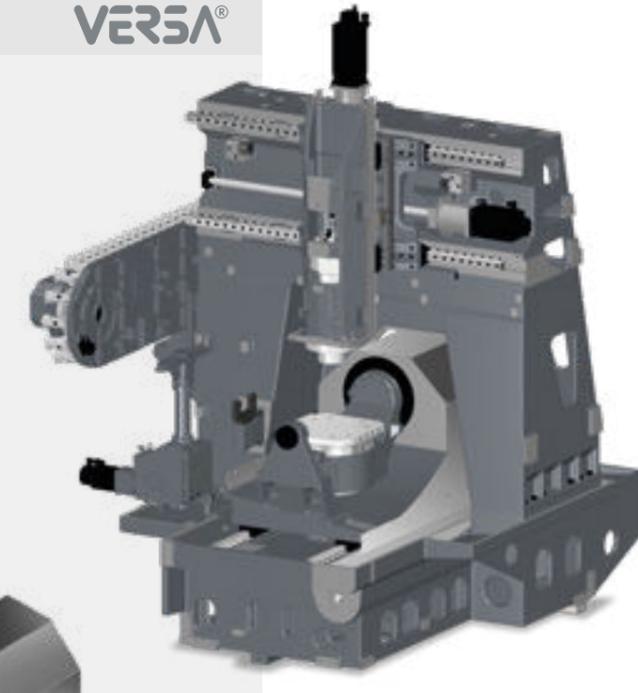
Machine geometry is optimized on the fully assembled machine frame by hand-scraping all guideways and machine geometries.



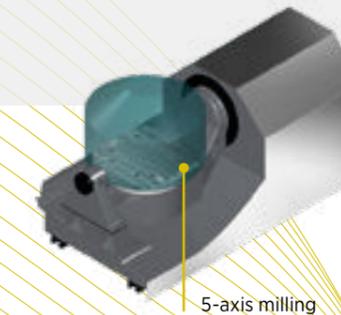
THERMAL STABILITY



- Cast iron machine structure in portal design with 3-point support, for optimum damping properties, homogeneous thermal conductivity and excellent inherent rigidity
- The rotary / swivel table (5-axis version) is supported by 6 carriages on the X axis for higher rigidity and higher dynamic accuracy
- 2 axes on the tool side guarantee maximum rigidity, precision and flawless surfaces
- Active cooling and insulation of all components throughout guarantee best thermal stability
- Direct drives with cooled torque motors for swivel and rotary axis



3-axis milling



5-axis milling

VERSA® – The right machine for every size of workpiece

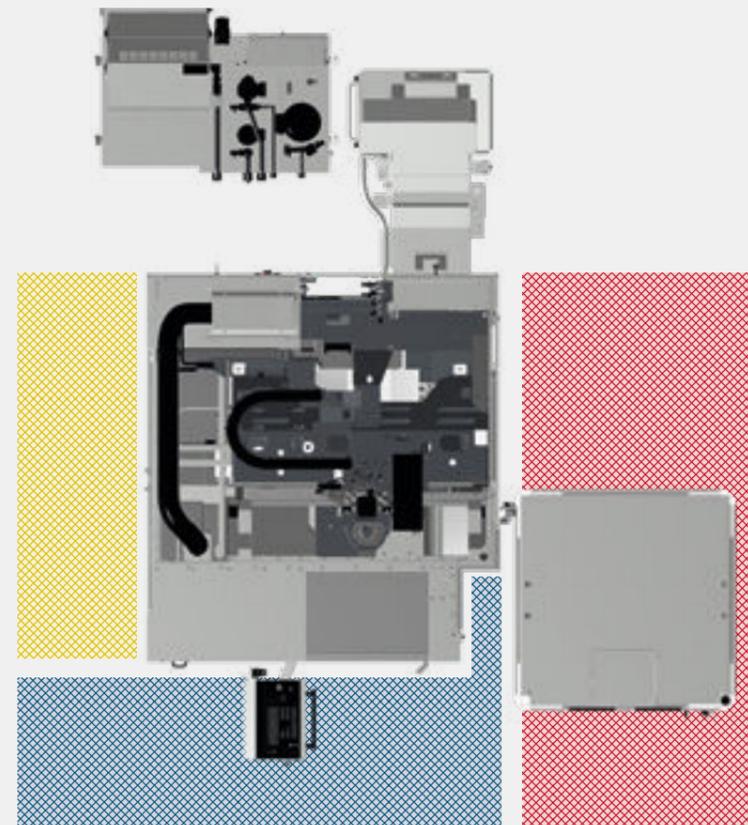


VERSA 645 linear with ERC 80 pallet handling system (right) and rack magazine for up to 250 tools (left). Various sizes of extended magazines available.

VERSA®

	Swing circle 5-axis milling	Clamping area 3-axis milling	Max. workpiece weight	Max. workpiece height
VERSA 945	650 mm		400 kg	450 mm
VERSA 943		870 × 760 mm	1000 kg	500 mm
VERSA 745	500 mm		250 kg	400 mm
VERSA 743		770 × 660 mm	800 kg	420 mm
VERSA 645 linear	400 mm		150 kg	250 mm
VERSA 643 linear		620 × 500 mm	400 kg	310 mm

MACHINE LAYOUT



- ▨ Workspace for machine operator
- ▨ Automation area
- ▨ Area for rack magazine

- Perfect accessibility to and visibility of workspace
- Convenient operation of tool magazine from front during machining
- Control panel can be swiveled
- Manual workpiece loading from front through wide-opening sliding door
- Optimal height for working
- Machine roof opens with door – for top loading by crane
- Easy and fast access for maintenance and cleaning

Option: automatic loading door for automation



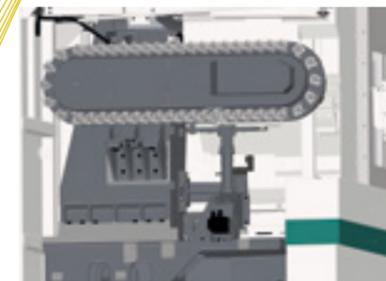
VERSA® 945/943

Excellent rigidity and precision with maximum dynamic accuracy

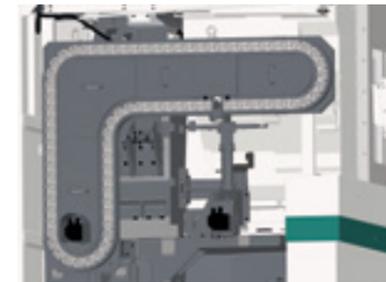
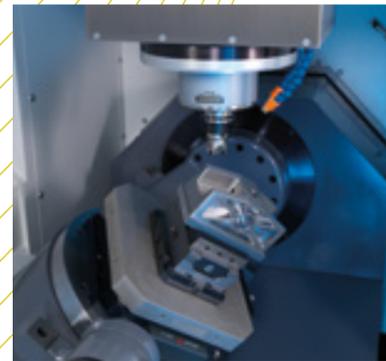


AREAS OF APPLICATION:

- Milling of complex titanium and aluminum components, e.g. in the aerospace industry
- Milling of hardened tool steel in tool and mould building
- Machining of stainless steel in the medical industry
- Challenging workpieces in mechanical engineering and automotive construction industries
- Machining of graphite or ceramics (with protection for abrasive materials)



Standard version – chain magazine with 48 tools



Option – 80 tools



Option – rack magazine, number of tools depends on tool holder / dimensions, scalable from 128 to 384 (HSK-A63)

FACTS

Travel

X travel	650 mm
Y travel	800 (1040) mm
Z travel	500 mm
Swivel axis A	255° (+120° / -135°)
Dividing axis C	0° up to 360°

Table / work area

Clamping surface (length x width)	460 x 460 mm Table plate square
Max. permissible table load	400 kg
Distance between table and spindle nose	150 – 650 mm (HSK-A63) 135 – 635 mm (HSK-E50)

Working spindle

Speed range	14 000 / 18 000 / 24 000 / 30 000 rpm
Spindle power at S6 (40% ED)	26.3 / 26.3 / 25.5 13.7 kW

Tool changer

Magazine pockets	
standard	48
optional	80 / 128 – 384

Feed rates

X / Y / Z	1 – 50 000 mm / min
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Weight

Machine tool (excl. cooling medium)	approx. 12 000 kg / 48 tools
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Controls
Latest HEIDENHAIN TNC control technology with 24" touchscreen (Extended Workspace)

943

Travel

X travel	650 mm
Y travel	800 (1040) mm
Z travel	500 mm

Table/work area

Clamping surface (length x width)	870 x 760 mm
Max. permissible table load	1000 kg
Distance between table and spindle nose	150 – 650 mm (HSK-A63) 135 – 635 mm (HSK-E50)

The VERSA 945 (5-axis) and VERSA 943 (3-axis) high-performance machining centers are designed for maximum precision and dynamics through and through.

Complex components can be machined with high precision on 5 axes up to Ø 650 mm. The directly-driven tilting rotary table is integrated longitudinally into the machine concept and offers a large swiveling range of -135° to +120°.

The 3-axis version is ideally suited for highly dynamic and high-precision machining of workpieces with a load of up to 1000 kg.

A wide range of functions and features enables flexible and economical precision parts production and surfaces of the highest precision, accuracy and quality.

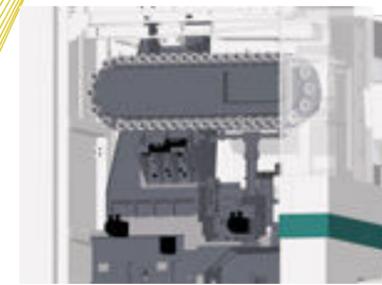
VERSA® 745/743

Excellent rigidity and precision with maximum dynamic accuracy

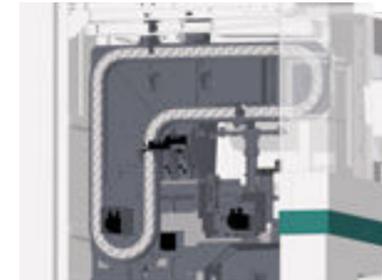


AREAS OF APPLICATION:

- Milling of complex titanium and aluminum components, e.g. in the aerospace industry
- Milling of hardened tool steel in tool and mould building
- Machining of stainless steel in the medical industry
- Challenging workpieces in mechanical engineering and automotive construction industries
- Machining of graphite or ceramics (with protection for abrasive materials)



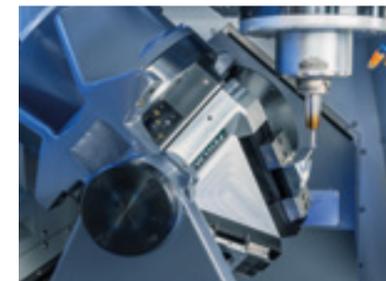
Standard version – chain magazine with 42 tools



Option – 74 tools



Option – rack magazine, number of tools is scalable depending on the tool holder / dimensions. Example RM256: HSK-A63 with 224, 256, or 288 tools or HSK-E50 with 320, 360, or 400 tools



With the VERSA 745, workpieces up to Ø 500 mm can be precisely machined in 5 axes. The rotary tilting table is integrated along the X-axis and has a generous swiveling range of -135° / +120°. The gray cast iron construction, the thermo-symmetrical design and the fact that only two axes on the tool side are used for cutting result in high rigidity and precision, as well as maximum dynamic accuracy.

The VERSA 743 offers a generously-sized clamping area of 770 × 660 mm and is perfect for high-precision and highly dynamic 3-axis machining. Like the swiveling bridge, the table also dips into the portal during machining. Optimum surface quality, high accuracy and long tool life are guaranteed.

FACTS

Travel

X travel	500 mm
Y travel	650 (895) mm
Z travel	420 mm
Swivel axis A	255° (+120° / -135°)
Dividing axis C	0° up to 360°

Table/work area

Clamping surface (length × width)	440 × 440 mm
	Table plate square
Max. permissible table load	250 kg
Distance between table and spindle nose	150 – 650 mm (HSK-A63)
	135 – 635 mm (HSK-E50)

Working spindle

Speed range	14 000 / 18 000 / 24 000 / 30 000 rpm
Spindle power at S6 (40% ED)	26.3 / 26.3 / 25.5 / 13.7 kW

Tool changer

Magazine pockets standard	42
optional	74 / 128 – 384 (HSK-A63)

Feed rates

X / Y / Z	1 – 50 000 mm / min
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Weight

Machine tool (excl. cooling medium)	approx. 10 500 kg / 42 tools
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Controls
Latest HEIDENHAIN TNC control technology with 24" touchscreen (Extended Workspace)

743

Travel

X travel	500 mm
Y travel	650 (895) mm
Z travel	420 mm

Table/work area

Clamping surface (length × width)	770 × 660 mm
Max. permissible table load	800 kg
Distance between table and spindle nose	150 – 650 mm (HSK-A63)
	135 – 635 mm (HSK-E50)

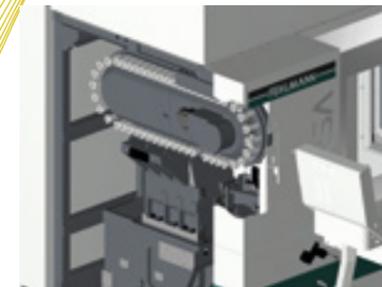
VERSA® 645/643 linear

Highly dynamic 5-axis/
3-axis machining
accurately – reliably – compact

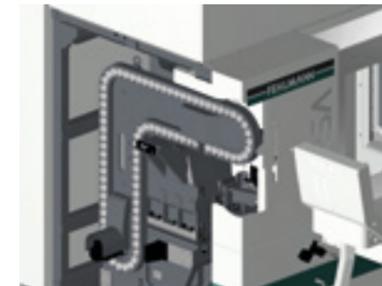


AREAS OF APPLICATION:

- Milling of complex titanium and aluminum components, e.g. in the aerospace industry, as well as milling of hardened tool steel in tool and mould building
- Machining of stainless steel in the medical industry
- Challenging workpieces in mechanical engineering and automotive construction industries
- Machining of graphite or ceramics (with protection for abrasive materials)



Standard version – chain magazine with 50 tools



Option – 86 tools



Option – rack magazine, number of tools depends on tool holder / dimensions, scalable from 160 to 600 (HSK-E50)

FACTS

Travel

X travel	350 mm
Y travel	500 (710) mm
Z travel	320 mm
Swivel axis A	255° (+120°/-135°)
Dividing axis C	360°

Table / work area

Clamping surface (length x width)	320 x 320 mm
Max. permissible table load	150 kg
Distance between table and spindle nose	100 – 420 mm (HSK-E50) 80 – 400 mm (HSK-E40)

Working spindle

Speed range	30 000 / 42 000 rpm
Spindle power at S6 (40% ED)	13.7 / 16.9 kW

Tool changer

Magazine pockets standard	50
optional	86 / 160 – 600 (HSK-E50)

Feed rates

X / Y / Z	1 – 50 000 mm / min
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Weight

Machine tool (excl. cooling medium)	approx. 7500 kg / 50 tools
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Controls
Latest HEIDENHAIN TNC control technology with 24" touchscreen (Extended Workspace)

643

Travel

X travel	350 mm
Y travel	500 (710) mm
Z travel	320 mm

Table/work area

Clamping surface (length x width)	620 x 500 mm
Max. permissible table load	400 kg
Distance between table and spindle nose	80 – 400 mm (HSK-E50) 60 – 380 mm (HSK-E40)

Maximum flexibility: Whether as a 5-axis or a 3-axis machining center, with or without automation – the VERSA 645 / 643 linear offers the ideal solution when optimum precision, well as high dynamic cutting performance, is required.

Specially designed for parts up to 250 mm in cubic volume, the VERSA 645 linear (5-axis) achieves excellent dynamics and, therefore, short machining times, thanks to the linear direct drives. The rotary swiveling table is driven by cooled torque drives and has a large swiveling range of -135° to +120°.

Instead of the integrated rotary swivel table, the VERSA 643 linear (3-axis) has a table with a clamping surface of 620 x 500 mm. Perfect for high-precision and highly dynamic 3-axis machining.

PICOMAX® 95

Milling of 5-axis small cubic parts as well as bulky 3-axis workpieces with hard-to-mill materials



FACTS

Travel

X travel	800 mm
Y travel	500 mm
Z travel	610 mm

Option:

Swivel axis B	-10° up to 120°
Dividing axis C	0° up to 360°

Table/work area

Clamping surface (length x width)	1600 x 550 mm
Max. permissible table load	600 kg
Distance between table and spindle nose	160 - 770 mm

Working spindle

Speed range	14 000 / 18 000 / 24 000 rpm
Spindle power at S6 (40% ED)	26.3 / 26.3 / 25.5 kW

Tool changer

Magazine pockets standard	48
optional	80

Feed rates

X/Y/Z	1 - 30 000 mm/min
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Weight

Machine tool (excl. cooling medium)	approx. 9300 kg / 48 tools
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Controls

Latest HEIDENHAIN TNC control technology with 24" touchscreen (Extended Workspace)

The optimized machine structure and the powerful HSK-A63 motor spindle of the PICOMAX 95 unite precision, torque and dynamics. This concept is especially designed for 5-axis machining with FEHLMANN dividing units. Of course, it can also be applied for pure 3-axis machining. On the generous clamping table a 4th/5th axis, fully integrated into the controls, can be mounted at any time.

Sufficient space still remains for machining large parts or utilizing a tailstock. Freely configurable automation can also be retrofitted at any time in order to expand the spectrum of use, without diminishing machine accessibility. The generous tool changer is equipped with a chain magazine and contains 48 or 80 tools.

The lateral installation of the automation system allows accessibility to the machining area at all times. The PICOMAX 95 can also be retrofitted at any time with a freely configurable automation system. Depending on requirements, pallets of up to 400 x 400 mm can be automatically loaded and unloaded.

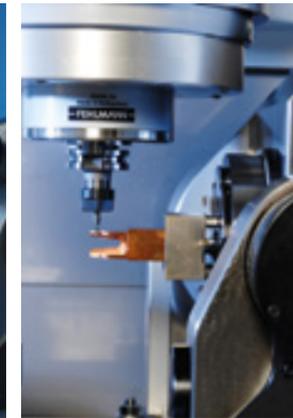


AREAS OF APPLICATION:

- In mould manufacturing for milling of hardened tooling steel
- For production of general machine components with maximum precision
- In medical technology for milling of titanium and stainless steels
- In aerospace for efficient, high-precision machining of complex titanium and aluminum parts
- In tool, jigs & fixtures manufacturing

PICOMAX® 75

3- to 5-axis machining with highest precision and excellent surfaces



FACTS

Travel

X travel	600 mm
Y travel	400 mm
Z travel	610 mm

Option:

Swivel axis B	-10° up to 120°
Dividing axis C	0° up to 360°

Table/work area

Clamping surface (length x width)	1160 x 475 mm
Max. permissible table load	400 kg
Distance between table and spindle nose	125 - 735 mm

Working spindle

Speed range	14 000 / 20 000 / 30 000 / 36 000 rpm
Spindle power at S6 (40% ED)	10.5 / 10.5 / 13.7 / 19.5 kW

Tool changer

Magazine pockets standard	50
optional	80

Feed rates

X/Y/Z	1 - 30 000 mm/min
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Weight

Machine tool (excl. cooling medium)	approx. 5300 kg / 50 tools
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Controls

Latest HEIDENHAIN TNC control technology with 24" touchscreen (Extended Workspace)

The PICOMAX 75 impresses with highest precision and cutting capacity, excellent operator ergonomics and optimum energy efficiency

For perfect accessibility and best operator ergonomics for 3, 4 as well as 5-axis milling. The generously sized tool magazine is loadable from the front during machining, without downtime.

Save energy and operating costs thanks to energy-optimized design and aggregates that switch off automatically when not in use. Full digital-drive technology ensures maximum dynamics and productivity. The mounting surfaces of the machine's structural parts are scraped and, therefore, guarantee best possible geometries.

The user-friendly fully-digital Heidenhain controls offer many impressive advantages for demanding milling processes. Space-saving workpiece handling systems for unattended operation and production of large and small series, as well as single pieces, are available. The machine is freely configurable with different pallet systems.

The precisely scraped machine geometry has been designed to work with FEHLMANN dividing/swiveling units. Due to the large clamping surface, additional clamping devices can be easily mounted next to the dividing/swiveling unit.



AREAS OF APPLICATION:

- Medical technology for efficient production of prototypes, instruments and implants
- Aerospace industry for efficient, high-precision machining of complex titanium and aluminum parts
- Optical and electronic industries for flexible production of small and accurate workpieces
- Tool and mould making for copper and graphite electrodes, as well as for dynamic HSC-milling in hardened steel
- For challenging jig manufacturing
- For production of general precision machine components

PICOMAX® 56 and PICOMAX® 56L

TOP or mill versions – user-oriented from the ground up



AREAS OF APPLICATION:

- For single parts and small batch production in tool manufacturing and mould making, in test and prototype manufacturing, in laboratories, as well as in apprentice shops
- Batch production parts and complex machining tasks, 3D milling with 3- to 4-axes can be completed quickly and fully automated using the Heidenhain CNC controls
- Manual manufacturing of single pieces, finishing by using the TOP-functions (Touch Or Program™) with drilling lever and handwheels
- mill model also for vocational training, with 3 handwheels and basic functions for conventional milling, drilling and threading

With innovative FEHLMANN operating concept: easy to handle, quick and economical

TOP operating concept (Touch Or Program™) which allows the machine to be used both for CNC controlled 3-axis machining, as well as for manual operation. Specifically designed to execute milling, drilling and threading tasks on single parts in a quick, reliable and efficient way without any time-consuming programming. The PICOMAX 56 mill is also perfectly suited for modern vocational training – for both conventional and CNC machining.

Manual

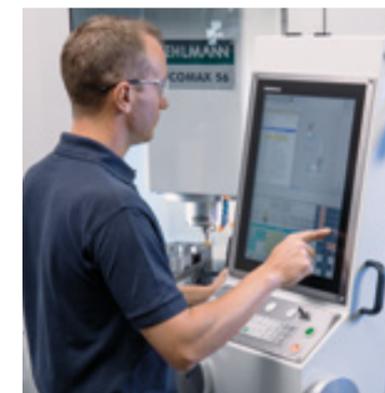
TOP and mill functions: ready to work without time-consuming programming



Removing residual material by milling, adding holes and threads or easy and fast machining of fixtures all based on a CNC program: With its TOP and mill functions, the PICOMAX 56 offers both the advantages of a manual and a CNC machine. Manual operation at the touch of a button.

CNC

The PICOMAX 56 as a complete CNC machine



When machining in CNC mode, all advantages of a 3-/4-axis CNC machine are available. The workshop-oriented digital Heidenhain TNC 620 controls can be programmed in conversational mode (Heidenhain plain text) or via DIN ISO. A large number of graphically supported cycles are available for the most common operations (pocket machining, grooving, zero-point shifting, etc.). Of course, programs created by CAM can also be transmitted directly to the controls.

FACTS

Travel	
X travel	508 mm (800 mm L version)
Y travel	400 mm
Z travel	400 mm

Table / work area	
Clamping surface (length x width)	908 x 480 mm (1400 x 480 mm L-Version)

Max. permissible table load	250 kg (350 kg L version)
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Distance between table and spindle nose	120 – 520 mm
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Working spindle	
Speed range	12 000 rpm
Spindle power at S6 (40% ED)	9.7 kW

Tool changer	
Magazinplätze	20 / 30 (option)

Feed rates	
X / Y / Z	1 – 20 000 mm / min

Weight	
Machine tool with 20 tools (excl. cooling medium)	approx. 3200 kg (approx. 4000 kg L version)

Controls	
Heidenhain CNC-Contouring control TNC 620	



The tool changer is integrated in the machine to save space. Tools are automatically changed by means of a double gripper. Depending on the version, there is space for 20 or 30 tools in the magazine.

PICOMAX® 21-D and PICOMAX® 21-M

Precision drilling / milling machines,
handy and robust, with a wide
range of applications



FACTS

Travel	
X travel	450 mm
Y travel	260 mm
Z travel	quill stroke 110 mm machine head
Travel W	450 mm

Work area	
Clamping surface (length x width)	770 x 320 mm
Max. permissible table load	200 kg
Distance between table and spindle nose	0 - 511 mm

Working spindle	
Speed range	50 - 6300 rpm
Spindle power at S6 (40% ED)	4.3 kW

Weight	
Machine tool (excl. cooling medium)	approx. 1000 kg

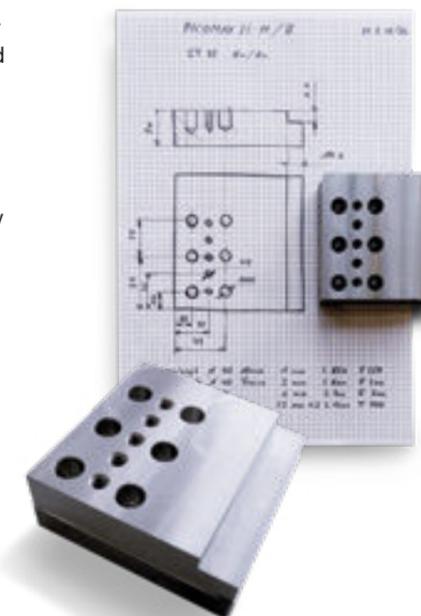
The PICOMAX 21-D and PICOMAX 21-M (with feed table) fulfill even the highest requirements for maximum precision and handiness. These machines offer a wide range of applications.

The proven quick tool change system FEHLMANN SF 32, continuous electronically adjustable speed, as well as the smooth and accurately guided movement of the vertical machine head allow efficient and comfortable machining.

The M-version is equipped with a motorized table. This allows for ultra-rapid and precise positioning, not just manually, but also automatically - for bolt hole circles, dot patterns and rectangular pockets.

Entries are done simply and comfortably via the digital readout's touch screen display.

The closed loop system, ball screw spindle and glass scales directly at the axes guarantee highly precise positioning. This ensures excellent production quality for the entire life of the machine.



From a drawing to the finished part in a few steps, by entering cycles and using the simple programming functions on the display

AREAS OF APPLICATION

- Perfect for drilling, threading, boring and milling operations in tool making, special machinery, assembly and electrical departments, repair, apprentice / training and test workshops, as well as for vocational schools
- Especially suited for precise single parts and small lots
- With a clear concept and simple operation - should be included in the basic equipment of every workshop!

The extensive range of FEHLMANN accessories and options



The FEHLMANN accessories program leaves almost nothing to be desired – a well-thought-out, versatile range of spindle inserts, chuck devices, dividing units and coordinate tables round out our offer.

All products offered are perfectly matched to FEHLMANN machines according to their size and precision. The development, production and quality controls of these products are done in-house by Fehlmann AG Switzerland.

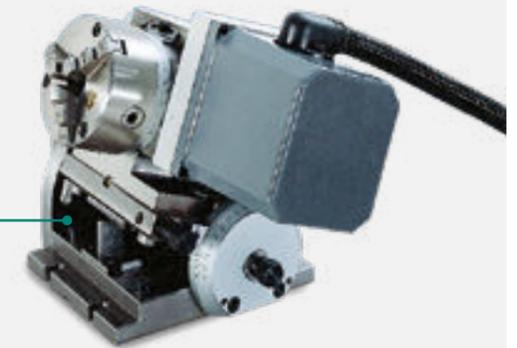
FEHLMANN CNC dividing and swiveling attachments

For fully automatic dividing, circular and helical milling processes, etc. – very compact and highly precise. Automatic CNC dividing units FEHLMANN AT 100 and AT 125 DD, as well as the dividing and swiveling unit FEHLMANN ATS 200 DD with hydro-pneumatic clamping of both axes – can be controlled simultaneously or simply used as positioning axes.

AT 100



AT 100 with swiveling device



AT 125 DD

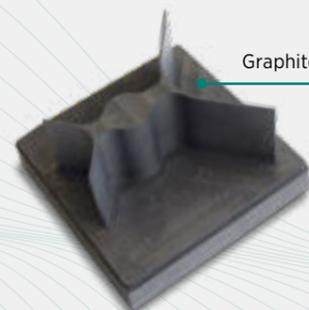
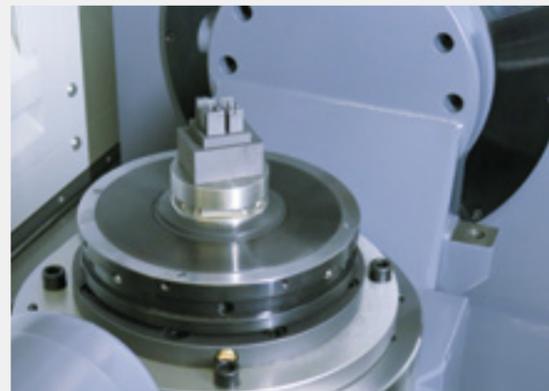


ATS 200 DD



Machining of graphite, ceramics, carbide and hardened steels

Process copper, graphite and carbide on the same machine, wet or dry. Depending on the requirements, we offer a complete system to fit your needs.



Graphite electrode



Carbide machining

Milling, hard milling and coordinate grinding combined on one machine



The VERSA high-performance machining centers continue to prove themselves in the areas of milling and hard milling, as well as in coordinate/contour grinding.

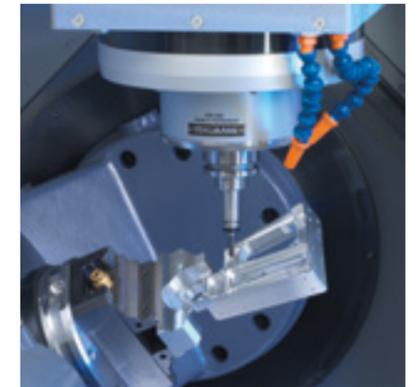
The versatile VERSA machining centers in portal design are ideally suited for integrating a coordinate grinding function, thanks to their outstanding features such as solid construction, impressive basic mechanical accuracy and thermal stability.



Milling, hard milling and coordinate/contour grinding processes are perfectly combined on one machine. It is possible to decide on the optimum machining strategy on a case-by-case basis and in a highly flexible manner, based on the specific requirements of a workpiece. As a result of complete machining in a single setup, an enormous reduction in throughput times, high-precision finishing and, at the same time, greater process reliability can be achieved.

Precision used multiple times: invest once in high accuracy and benefit twice by combining milling and coordinate grinding.

FEHLMANN motor spindles, the heart of our precision milling machines



FEHLMANN's motor spindles, developed in-house, meet the most demanding requirements. Whether it be milling with the highest cutting capacities, trochoidal milling of difficult-to-machine materials, superfinishing or machining with conventional tools – with these spindles you are up to any task.

Depending on the required specifications and the customer, FEHLMANN machines are available with a variety of motor spindles – with tool holding fixtures ISO/SK 30, HSK-E40, HSK-E50 or HSK-A63, as well as with various torque and rotational speeds. For short power-up times, all spindles are equipped with high spindle acceleration. Due to direct drive, these spindles ensure low vibration and precise concentricity, thus assuring best surfaces and tool life.

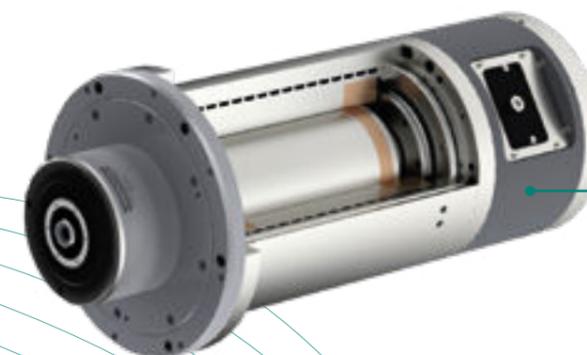


Active spindle cooling

For excellent thermal stability – active spindle cooling is standard equipment on all motor spindles.

Precise position correction in Z

Depending on the spindle type, position correction of the main spindle via direct measurement system is included as standard or is optional.



In-house motor spindle production

Due to direct drive, FEHLMANN motor spindles ensure low vibration and high torque operation, thus assuring best surfaces and tool life



FEHLMANN Automation Solutions – everything from one source



The workpiece feeding system with pallet handling is perfectly suited for medium-sized batches and single parts. Various clamping devices may be mounted on the pallets without having to program a robot.



Robotic parts handling with compact and modular 6-axis robot system for all-around processing of round as well as angular blanks.

To further increase productivity, we offer various modular, flexibly deployable automation solutions for economical production of serial and individual parts.

Whether you are planning a new automated system 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 Erowa, Soflex or Promot, or tool identification via QR code – 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 via a pallet management file that is integrated into the controls or with the flexible 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.



Modular 6-axis robot system for blank parts handling



Erowa Robot Easy pallet handling system



Erowa Robot Compact workpiece loading system for pallets



Erowa Robot Leonardo pallet handling system

Here are just a few examples of the many individual automation projects which we have had the pleasure of realizing together with our customers. Feel free to contact us any time for additional information.



Articulated arm robot system for blank parts and pallet handling on VERSA 825 with rack magazine for 346 tools



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



Linear automation solution consisting of two VERSA 825 with rack magazines for up to 346 tools each



EROWA Robot Dynamic 150 L and VERSA 825



FEHLMANN MCM™ Milling Center Manager

The FEHLMANN Milling Center Manager (MCM™) enables unattended operation of machine tools and loading robots. During this time, the MCM has complete control of and monitors the automated system.

System events are logged and, in the event of a malfunction, the MCM takes pertinent measures to ensure uninterrupted operation, such as the notification of the operator via SMS/e-mail, or the selection of other workpieces. In addition, FEHLMANN also offers synchronized maintenance requests on the CNC screen.

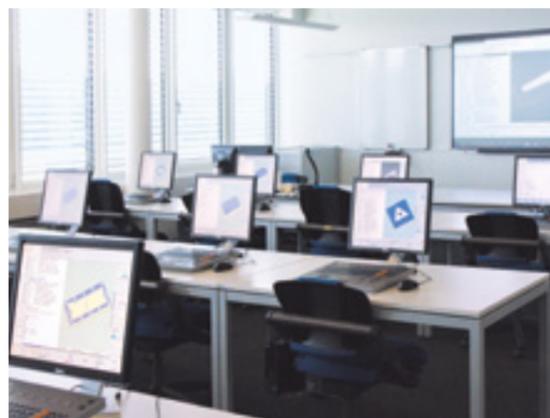
FEHLMANN MCM™

Start-up and training, Support and service



“Everything from a single source”, the key to success of FEHLMANN’s philosophy

- Development of top machines in line with market trends and with high customer advantage
- Production under optimal conditions and with modern infrastructure
- Professional and on time delivery and assembly
- Competent start-up and training, precisely matched to the purchased machine
- Rapid availability of spare parts and reliable, fast customer support in case of problems
- Customized maintenance services



After delivery and a practice-oriented start-up, the customer will not be left to his own devices.

5-axis CNC technology, high-performance machining and automation are increasingly becoming the norm. The investment’s productivity should be maximized in a short amount of time, allowing for quick amortization of the machine. We can meet these challenges by offering practice-oriented start-up, a modular training concept and our reliable service.

Your advantages

Modern machine tools play a key role in the production process. High machine availability is, therefore, of great importance. This makes it all the more important to find quick and economi-

cally optimal solutions in the event of malfunctions. FEHLMANN combines development, production, assembly and service under one roof and assists you with competent support at all times.

competent

Short response times, well-trained technical support staff, modern communication channels and a ticketing solution via our free technical support team ensure competent advice and keep problem resolution time to a minimum.

solution-oriented

Comprehensive maintenance, service and spare parts solutions ensure efficient and effective repairs on site. This allows components such as CNC controls, drives, etc. to be delivered pre-programmed and ready for operation, whenever possible. Customers in the EU can conveniently return defective parts through our branch in Germany without customs formalities.

efficient

Due to our high degree of in-house production, we have spare parts in stock and can deliver them to our customers within the shortest possible time – with express delivery service available upon request. Our in-house repair service allows us to offer like-new refurbished original replacement units or loan units during the overhaul period at attractive conditions.

personal

Our specialists advise and support our customers personally. Thanks to the high degree of our company’s in-house production, the quality, as well as the rapid and longterm availability of spare parts is guaranteed. Continuous investment in the further development of machines and processes, decades of experience and our dedicated, expert team of employees stand for quality, reliability and safety – characteristics that set FEHLMANN precision milling machines apart.

IT'S OUR PLEASURE TO BE HERE FOR YOU

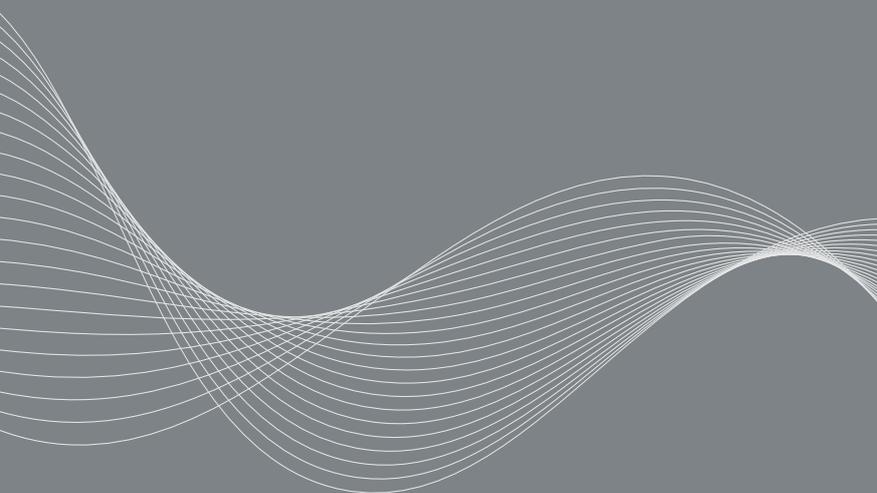
We provide our customers with personal, competent advice. You can reach us through the channels below:

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Machining centers in portal design



Machining centers



Milling/Drilling machines



Service/Accessories



Automation

Fehlmann AG, cutting-edge technology "Made in Switzerland"

From conception to design, production and assembly, to training and service.

With FEHLMANN, you are one step ahead of your competition.



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