

M10 Pro

DATRON Portal and 5-axis CNC Milling Machines

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Machining of large and small components, in small or large volumes, with speeds up to 60,000 rpm



DATRON

Optimised for Small Tools –

yet solid and precise!

High-speed CNC milling with high quality and short production times

DATRON milling machines provide highest precision and surface quality at an excellent price-performance ratio. From 3-axis to 5-axis simultaneous machining: we offer tailor-made solutions for individual needs. Tools and accessories perfectly matched to our machines guarantee highest efficiency and cost-effectiveness.

Their features at a glance:

- High-speed spindles, up to 60,000 rpm
- Short setup times due to DATRON clamping fixtures
- Flexible module clamping solutions
- Minimum quantity cooling/lubrication system
- Automatic tool changer

Custom tool development is also possible. Our milling machines are complemented with a comprehensive range of services: expert application advice and customer-specific sample machining at our Technology Centre, product training and after-sales service solutions

- Proprietary tool technology for high-speed machining
- Easy and quick programming
- Microsoft Windows-based control
- Optional automation solutions
- Very low energy consumption



Whether micron-precise or cost-effective and versatile – **DATRON has the solution!**

Examples for applications:

- Front panels
- Housings
- 3D-engraving and stamps
- Electrode production
- Prototypes
- Technical components
- 5-axis machining
- and many more

Materials:

- Aluminium
- Nonferrous metals
- Steel (alloys)
- Plastics
- Composite materials (GRP, CRP, etc.)
- Graphit
- and many more

Industries:

- Electronics industry
- Medical technology
- Tool and mould construction
- Automotive industry
- Prototypes
- Aerospace
- Watch and jewellery industry
- Advertising
- and many more





















DATRON Machine Overview

Every application is specific and we provide the perfect solution for your specific needs: Whether 3, 3+2 or 5 axis simultaneous, high-precision or especially cost-effective machining. Our experts will be happy to advise and help you to find the most effective solution for your application.

Powerful and highly accurate

DATRON M10 Pro

Further information on pages 12-13



Productive and versatile

DATRON **M8**Cube

Further information on pages 14-15



Large-sized and efficient

DATRON **ML** DATRON **MV**

Further information on pages 16-17



Productive and cost-effective

DATRON **M8** Datron **M85**

Further information on pages 18

Compact and cost-effective

DATRON **M7** Datron **M75**

Further information on pages 19

5-axis, precise and compact

DATRON **C5** Datron **D5**

Further information on pages 20-21







DATRON Innovative Technology "Made in Germany"

The name DATRON stands for high-quality machines and tools of the latest generation. In order to provide our customers with the best possible solution and to continuously improve our products, our experts are already working today on the production technologies of the future!

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In close cooperation with universities and selected technology partners, DATRON pursues numerous research projects targeting more efficient and innovative manufacturing processes. Our innovation strength is proven by numerous patents; DATRON has been awarded three times the TOP 100 seal as one of the most innovative companies among the German small and mid-sized enterprises. Quality and customer satisfaction are our top priority. "Made in Germany" is a key part of our product strategy. DATRON products are developed exclusively in Germany and made of extremely high-quality components. With our certified total quality management system, we monitor and control the correct functioning of all processes, from product development over sales and delivery to service.

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Reinforce your competitive lead even further with innovative DATRON products. Latest cutting technology, high quality and production efficiency are your key advantages.

In an agement system certified

DATRON Turnkey Solutions

With an extensive range of accessories and the knowledge of our experts, we optimise DATRON machine configuration for your production. Choose among several machine sizes and a range of powerful machining spindles.

The choice is yours: expand a particular machine with the appropriate clamping technology, the optimum cooling spray system, rotary axes, sensors, automation, CAD/CAM software packages and much more.

We provide our customers with:

- Tailor-cut solutions
- Individual application advice
- Integrated clamping technology and automated solutions
- On-site installation and training
- Industry-leading service and support

Complete Process Chain

Profit from the profound knowledge of our experts in many fields of production technology. We will be happy to advise you in optimising all stages of the production chain: from CAD design to CAM data generation, clamping and measuring technology, tool and cooling technology up to the entire material flow. Tuning and optimising the entire process chain often leads to that crucial cost and quality advantage!

DATRON **Efficient and Energy-saving**

Energy-efficient machines and the cost-effective use of resources play an increasingly important role in production processes. Through their innovative lightweight construction and energy-efficient drive technology, DATRON machines are more cost-effective already today. DATRON milling machines require on average less than 2.5 kW/h, even at high cutting capacities. The proprietary minimum quantity cooling lubrication system developed by DATRON also offers a highly cost-efficient and environmentally-friendly solution.





Saves energy:







Work space

Saves resources:

Saves space: Large machining table at





DATRON Highly Dynamic with Optimum Stiffness

DATRON CNC milling machines operate with highspeed milling technology (HSC - High Speed Cutting). Their high spindle speeds of up to 60,000 rpm with a highly dynamic machine control and their high feed rates, allow achieving excellent surface quality and shorter production times. Due to their high spindle speeds, DATRON milling machines reach in many cases, 5 to 10 times higher cutting speeds than conventional milling machines.

Their high-quality steel structure designed for speed and stiffness, combined with a granite or polymer concrete worktable, allows optimum vibration damping leading to optimum milling results.

- Very high cutting performance with the smallest tools by means of high-speed precision spindles with up to 60,000 rpm and 0.6 kW to 3.0 kW output
- Stiff, vibration-free design of DATRON machines due to reinforced polymer concrete or granite worktables allows excellent surface finishes when machining
- High precision due to high-quality linear guides, ball screw spindles, HSK-E 25 tool inserts (optional) and precision-crafted structural elements

Innovations That Make You Even More Successful!



HF Spindels

For milling tools less than 0.1 mm - but also high clamping performances with milling heads up to 20 mm. DATRON's precise and durable high-frequency spindles will convince you.



Cooling/Lubrication System

Ecologically and economically optimised processes with minimum quantity cooling lubrication and longer tool life associated with it.



Suction - CleanCut

Almost chip-free work due to highly effective chip suction. A must for plastics such as GRP and CRP; an advantage for many metal-machining applications.



CNC Milling Tools

High cutting and rotation speeds require special tools. Many years of research and experience have been placed inside DATRON tools: profit by them!



Clamping Technology

Whether pneumatic or vacuum clamping technology: DATRON's systems distinguish themselves by their high flexibility, high ease of use and short changeover times.



Measuring Technology

The XYZ sensor guarantees short setup times and increased accuracy and efficiency by automatically determining the reference edges and measuring the height profile.



CAM Software

With DIN/ISO standard interfaces, DATRON machines are compatible with all popular 3D-CAD/CAM programs, such as Mastercam, SolidCAM or Pro/E.



DATRON Machine Software

The "DATRON CNCv9" machine software offers convenient functionality for quick setup and CNC programming and acquisitions 3D CNC files of any size.

Machines that Fit Your Production Task!

	M10Pro	M8Cube	M8/M85	M7/M75	ML/MV Machines	C5
Traverse path (X x Y)* Z stroke = 240 mm	1,020 mm x 830 mm	1,020 mm x 830 mm Z stroke = 245 mm	1,020 mm x 800 mm	520 mm x 650 mm	ML: from 1,040 mm x 1,150 mm to 1,590 mm x 2,680 mm MV: from 1,040 mm x 1,000 mm to 1,520 mm x 1,000 mm	153 mm x 100 mm x 100 mm
Spindle power	Precision PowerS Syncro 3.0 kW HF spindle, up to 40,000 rpm, HSK-E 25	0.6 kW - 3.0 kW according to type 60,000 rpm, direct shaft or HSK-E 25	0.6 kW - 3.0 kW according to type 60,000 rpm, direct shaft or HSK-E 25	0.6 kW - 3.0 kW jaccording to type 60,000 rpm, direct shaft or HSK-E 25	0.6 kW - 3.0 kW according to type 60,000 rpm, direct shaft or HSK-E 25	1.8 kW up to 48.000 rpm, HSK-E 25
Feed/ Positioning Feed	up to 30 m/min	up to 22 m/min	up to 20 m/min	up to 16 m/min	X: up to 20 m/min Y: up to 16 m/min	up to 30 m/min
Main applica- tions	 High-per- formance machining Precision machining Thicker materials Small serial production Panel production Panel materials 	 High-per- formance machining Small serial production Panel production Panel materials Thicker materials 	 Small serial production Panel production Panel materials 	 Small serial production Panel production Panel materials 	 Large format housings and panels Small serial production Panel production Panel materials 	 5-axis machining Precision engineering Electrode production Watches Jewellery industry Micro machining Medical technology

* Can by limited to between 100 mm and 200 mm by a tool changer in Y direction.

DATRON M10 Pro

Productive - Precise - Powerful

Varying lot sizes, small numbers of high-tech materials: with the DATRON M10 Pro you adjust very quickly to new demands.

Productive and cost-effective starting from the first unit! The integrated linear measuring system with a resolution of 40 nm guarantees precision durability.

Integrated micron-accurate



Solid, temperatur-stable granite table with extremely high levelness.

M10 Pro





5-axis milling with rotary/ swivel table for precise multisided machining of small pieces

Integrated **zero-point clamping** system with $\pm 5 \ \mu m$ repeatability (optional).







The M10 Pro CNC milling machine offers in its basic version:

- Machining table made of solid Granite/Steel with a Steel protective cover
- New, highly dynamic 3D CNC control for three to six axes
- 19" LCD-Monitor 19" with Microsoft® Windows® control computer
- Network and USB interface for data exchange
- Menu-guided CNC programming software DATRON HSCpro

Technical Data	M10 Pro	M10 Pro+ with encapsulated linear position measuring system in all axes	
Machining table	Solid Granite table with extremely rigid portal of sided Y drive with cover	n Steel column, design with double- red guides	
Traverse path (X x Y x Z)	1,020 mm x 830 mm x 2 with tool changer 720 m	240 mm; nm in Y	
Portal passage	200 mm		
Installation dimensions without operating terminal (W x D x H)	1,990 mm x 2,080 mm	x 2,000 mm	
Conical holding fixture integrated into table	Ň	(
Integrated zero-point claming system	opti	onal	
Fast digital servo control with Microsoft® Windows® control computer	Ň	(
Easy-to-use hand-held control unit	\checkmark		
Drive system: Digital servo drives; ball-screw for every axis	v	(
Linear position measuring system in all axes	-	\checkmark	
Chip conveyor	opti	onal	
Minimum quantity lubrication	· · · · · · · · · · · · · · · · · · ·	(
Machining spindle	Precision-PowerS Syncr up to 40,000 rpm	o 3.0 kW HF spindle,	
Tool changer with integrated tool length sensor	11 tools with HSK-E 25 t (optional for 22 tools)	ool holding fixture	
Absolute accuracy	± 20 μm	± 5 μm	
Repeatability	< ± 10 µm	< ± 2,5 µm	
Feed	up to 30 m/min		
Positioning feed	up to 30 m/min		
Weight	approx. 2 t		
Article Number	0A01015A (with cut-out section) 0A01015B	0A01016A (with cut-out section) 0A01016B	



40,000 rpm – High cutting performance with small tools. High dynamic HSC control system.



Precision spindle with a concentricity better 2 µm and HSK-E 25 tool holding fixture.



Optical linear position measuring system with ± 5 µm absolute accuracy and 40 nm accuracy (optional).

DATRON M8Cube

The DATRON M8Cube is the best choice for efficient machining of housings, profiles and panels made of aluminium.

But other nonferrous metals or composite materials can also be machined most efficiently with the M8Cube. Short setup times, very low power consumption and excellent value for money allow high cost-effectiveness, even at low volumes.

Your benefits at a glance:

- You save space!
 Very large machining surface with a small footprint.
- You save money! The M8Cube is accessible to buy and has extremely low acquisition and operating costs.
- You get new opportunities in milling, drilling and engraving! The M8Cube has been developed for machining high-tech materials with small tools (Ø 0.1 mm to 20 mm).
 Innovative Made in Germany, milling technology

Innovative "Made in Germany" milling technology for your success.





2,340 mm





Traverse paths

Technical Data	DATRON M8Cube
Machine table	Solid polymer concrete table with steel column, extremely rigid portal design with double-sided Y drive with covered guides
Traverse path (X x Y x Z)	1,020 mm x 830 mm x 245 mm; with 720 mm tool changer in Y
Portal passage	200 mm
Installation dimensions without operating terminal (W x D x H)	1,740 mm x 1,740 mm x 1,950 mm
Conical holding fixture integrated into the table	\checkmark
Fast digital servo control with Microsoft® Windows® control computer	\checkmark
Easy-to-use hand-held control unit	\checkmark
Drive system: Brushless servo motors with absolute encoders, ball-screw spindle for each axis	\checkmark
Minimal quantity lubrication	\checkmark
Machining spindle	Precision high-frequency spindles from 0.6 kW to 3.0 kW with up to 60,000 rpm
Tool changer with integrated tool length sensor	5-fold tool changer with HSK-E 25 (optional 10-fold), 15-fold tool changer with direct shank (optional 30-fold)
Feed	up to 22 m/min
Positioning feed	up to 22 m/min
Weight	approx. 1,300 kg
Article Number	0A03200A/B







Status display by means of signal LEDs integrated into the operating terminal and the portal to display machine status (optional).

 $\begin{array}{l} \mbox{Precision spindle with a} \\ \mbox{concentricity better 2 } \mu m \\ \mbox{and HSK-E 25 tool holding} \\ \mbox{fixture (optional)}. \end{array}$

XYZ measuring system integrated: Measuring functions and very easyto-use material/tolerance compensation (optional).

Minimum quantity lubrication from 30 ml/hour. Minimal

cleaning costs (optional).

Saves resources:



Up to 60,000 rpm: High cutting performance with small tools. High dynamic HSC control system.







Precision ball-screw spindles and linear guides from leading suppliers. Brushless direct drives in the X/Y-axes.



DATRON ML/MV Machines

Modular, solid and versatile - the ML/MV series is (almost) always the right solution! Among the machines with DATRON vacuum technology, this is an ideal machine for quick and precise sheet-metal machining. The solid and accurate granite table guarantees high table flatness and an exceptionally smooth operation for machining perfect surfaces.

- Modular design with precision guides and ball screws
- Traverse path¹ (X x Y x Z): 1,040 mm x 1,150 mm x 240 mm up to 1,590 mm x 2,680 mm x 240 mm
- Precision high-frequency spindles from
 1.2 kW to 3.0 kW with speeds up to 60,000 rpm
- Seat for optional clamping technique integrated in the machining table
- Available without integrated protective cover with customised cover
- Tool changer depending on the HF spindle up to 45 tools

The MV series machines have a vertical clamping surface for claming expecially high pieces (max. 800 mm).

Traverse paths ML series



Traverse paths and clamping area of MV series







Changing claps in seconds with integrated fixturing system. Ready for new machining tasks in no time!





Precision ball-screws and

Automation, clamping technique, tools, software. DATRON delivers tailor-maide complete solutions.

Brilliant: Machining high components at the table!

	DATRON ML/MV
Traverse path¹ (X x Y); Z stroke = 240 mm Portal passage 200 mm	ML 1000-2:2 1.040 mm x 1.150 mm ML 1500-2:2 1.520 mm x 1.150 mm ML 1500-3:2 1.520 mm x 1.650 mm ML 1500-4:2 1.520 mm x 2.150 mm ML 1600-5:2 1.590 mm x 2.680 mm ML 1000-2c: 1.040 mm x 1.150 mm ML 1500-2c: 1.520 mm x 1.150 mm ML 1500-2c: 1.520 mm x 1.150 mm ML 1500-2c: 1.520 mm x 1.000 mm MV 1000-1c: 1.040 mm x 1.000 mm MV 1500-1c: 1.520 mm x 1.000 mm
Installation dimensions without operating terminal (B x T x H)	ML 1000-2: ² 1.700 mm x 1.600 mm x 1.640 mm ML 1500-2: ² 2.200 mm x 1.600 mm x 1.640 mm ML 1500-3: ² 2.200 mm x 2.060 mm x 1.640 mm ML 1500-4: ² 2.200 mm x 2.700 mm x 1.640 mm ML 1500-4: ² 2.200 mm x 2.700 mm x 1.640 mm ML 1500-4: ² 2.822 mm x 3.100 mm x 1.680 mm ML 1500-2: 1.800 mm x 1.900 mm x 1.950 mm ML 1500-2: 2.550 mm x 1.900 mm x 1.950 mm MV 1000-1: 1.900 mm x 1.900 mm x 1.950 mm MV 1500-1c: 2.550 mm x 1.900 mm x 1.950 mm

The traverse path of the machine series ML is reduced by 130 mm, of the serie M8XL by 100 mm and of the series MV by 200 mm if there is a tool changer.

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without integrated protective cover

DATRON M8/M85

Productive and versatile

Use our M8 milling machine to benefit from our long experience in the particularly cost-effective and highquality machining of aluminium and plastics! With our wide range of clamping options, 3D surface sensors, rotary and swivel axes, integrable VisionSystem and automation units, this milling machine can be perfectly adapted to almost any CNC machining task.

- Traverse path (X x Y x Z): 1,020 mm x 800 mm x 240 mm; (with tool changer useable in Y 700 mm)
- Floor space (W x D): 1,850 mm x 1,400 mm
- Solid concrete poymer table for vibration clamping
- Precision high-frequency spindles from 0.6 kW up to 3.0 kW with speeds up to 60,000 rpm; for M85 series: 1.2 kW HF spindle with speeds up to 30,000 rpm
- Large swing door for easy access
- High flexibility due to modular configurability







Saves money: Low-cost in purchase anc operation.



Saves energy: Very low power consumption by means of highest efficiency of all aggregates.

DATRON M7/M75

Compakt and cost-effective

The DATRON M7/M75 milling machines considerably improve the manufacturing speed and quality when small tools are used. With a very small fllor space this compact machine offers maximum traverse paths. The solid granite construction allows highly dynamic CNC machining and, at the same time, ensures a high surface quality.

- Traverse path (X x Y x Z): 520 mm x 650 mm x 240 mm; (with tool changer useable in Y 520 mm)
- Floor space (W x D): 1,500 mm x 1,300 mm
- High precision due to compact design and granite table
- Precision high-frequency spindles from 0.6 kW up to 3.0 kW with speeds up to 60,000 rpm; for series M75: 1.2 kW HF spindle with speeds up to 30,000 rpm
- Efficient machining of small CNC parts
- 3D rapid prototyping, 3D engraving







Saves resources: Minimum quantity lubrication from 30 ml/hour. Minimal cleaning costs.



Saves space: Large machining table at extremely small footprint



How were precise small components manufactured before the C5 existed?

You will probably ask yourself this question when you see this high-tech machine in action. Ultra-compact, ultra-precise. "Yes, this is a high precision 5-axis milling machine of a new class". The experts are amazed and we are also a little proud of this "miracle" of the art of engineering.





Saves resources: Minimum quantity lubrication from 30 ml/hour. Minimal cleaning costs.



Energy-saving: Very low power consumption protects the environment and your purse



Saves money: Low-cost in purchase an operation.



Ultra compact, solid, precise. No other high-tech 5-axis milling machine of this class takes up so little space.



DATRON **D5**

Dental CAD/CAM milling/grinding machine For the five-axis simultaneous machining of all current materials

Further information: www.dentalcam.com

Examples of workpiece sizes:

Cubic components



Cylindrical components



Working area DATRON C5 Traverse path (X x Y x Z) 153 mm x 100 mm x 100 mm Cylindrical: Diameter 60 mm, height 70 mm Workpiece sizes Diameter 100 mm, height 30 mm (Examples) $\textbf{Cubic} (X \times Y \times Z):$ 96 mm x 75 mm x 20 mm 50 mm x 50 mm x 60 mm Tool length 75 mm (from HSK face contact) Machine dimensions Solid cast steel frame, Machine construction 4th/5th axis made of cast aluminium Installation dimensions (W x D x H) 940 mm x 1190 mm x 1910 mm without control unit Weight ca. 900 kg Supply 3 x 400 VAC/16A Voltage 4,000 VA (max. fuse 3 x 16 A) Power input 7 - 10 bar, Air connection dry, clean, oil-free Ambient temperature 15 - 30 °C Compact cabin with easy access for Machine housing comfortable maintenance **USB** interface Ethernet interface Convenient manual control panel Minimal quantity lubrication Built-in zero-point clamping system Linear positioning measuring system Resolution 5 nm on all axes 22fold with tool length sensor Tool changer 1,8 kW, up to 48,000 rpm Machining spindle with HSK-E 25 tool holder

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The 5-axis milling machine C5 in its basic configuration povides:

- 1.8 kW precision spindle with HSK-E 25 tool holder, up to 48,000 rpm
- High precision 4th/5th axis
- Automatic 22fold tool changer
- Integrated tool length sensor
- Heidenhain linear measuring system on all axes
- Optional zero-point clamping systems:
 - Zero Clamp
 - Polygrip for Erowa ITS 50 and 3R Macro
 - Defo Grip for workpiece direct clamping
- Programme driven minimum quantity cooling lubrication system
- Integrated camera (optional)



Status display by means of signal LEDs integrated into the operating terminal to display machine status.



Integrated clamping system for elektrodes Polygrip for EROWA ITS 50 and 3R Macro (optional)



48,000 rpm High milling performance with small tools. High dynamic HSC control system.



Precision spindle with a concentricity better 2 µm and HSK-E 25 tool holding fixture.





Integrated **zero-point clamping system** with ± 0,5 µm repeatability (optional).



DATRON CNC High Frequency spindles

Precision in the micron-range, speeds up to 60,000 rpm

DATRON offers the right spindle for every need: from ultra-powerful, precision high-speed spindles to robust and cost-effective "workhorses". High quality, precision and durability are common features of all DATRON high-frequency spindles.



Powerful and extremely precise high-frequency spindle with HKS-E tool holder. For highest quality with high cutting performance.

3.0 kW at up to 40,000 rpm.

HighS

This universal spindle for high-speed milling, drilling and engraving is available in three different versions:

HighS L0.6 with 0.6 kW and up to 60,000 rpm, direct shank clamping, air cooling through spindle insert

HighS M1.8 with 1.8 kW at up to 48,000 rpm; HSK-25 tool insert

HighS H2.0 with 2.0 kW at up to 60,000 rpm; direct shank clamping

EcoS

A particularly robust and efficient high-frequency spindle with direct shank clamping and automatic tool changer. Speeds up to 30,000 rpm with 1.2 kW power.

The expert selection of the appropriate spindle for your particular application is a particularly important point when configuring your milling machine.

Our experts will advise you on the spindle that is the most efficient solution for you.



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and a second	Spindle type Spindle performance	Speed range (1/min)	Tool clamping technology	max. shank diameter/max. tool diameter for automatic tool changer (mm)	Internal cooling	Cooling/lubrication system
	HighS L0.6 HF Spindle 0.6 kW	6,000 - 60,000	Direct shank clamping	8/14	Air	DATRON cooling lubrication system
	EcoS P1.2 HF Spindle 1.2 kW	5,000 - 28,800	Direct shank clamping	8/14	Air	DATRON cooling lubrication system
	HighS H2.0 HF Spindle 2.0 kW	6,000 - 60,000	Direct shank clamping	8/14	Liquid cooling	DATRON cooling lubrication system
	HighS M1.8 HF Spindle 1.8 kW	5,000 - 48,000	HSK-E 25	10/20	Liquid cooling	Microjet 5l/9l with filling level sensor
	PowerS Synchro 3.0 HF Spindle 3.0 kW	1,000 - 40,000	HSK-E 25	10/20	Liquid cooling	Microjet 5l/9l with filling level sensor

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DATRON **Cooling/lubrication systems**

DATRON minimum quantity cooling lubrication systems are the result of years of application experience. Depending on the cooling medium, there are minimal residues or none at all. No cleaning, no degreasing: a great advantage for many applications.

DATRON Microjet® EK-M cooling/lubrication system

This minimum quantity cooling/lubrication system can be used with different coolants/lubricants and is designed for reliable and reproducible results in milling and engraving processes with particularly small amounts of fluid.

There are three different spray head variants available for this system:

EK-VM-R

The circular spray head for HSK-E-25-spindles has four nozzles and is used in connection with CleanCut and machines with 11-fold tool changer.

Spray head with four adjustable nozzles and bundled jet. It can be used for both spindles with HSK or



EK-VM-4

direct shank clamping.

EK-VM-2

Two-nozzle unit with flexible hinge tubes: The cooling/ lubricant jet can be optimally adapted to the specific application. Suitable for all spindles with HSK or direct shank clamping system.





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milling is withdrawn by the evaporation process. In addition, ethanol lubricates the flute of the tool, thus increasing its service life. Cleaning the workpieces after machining is eliminated due to the complete evaporation of ethanol.



DATRON Module Clamping Technology

The end of tedious and long screwing and setup times!

Cost-effective production by clamping accomplished in just a few seconds:

DATRON's module clamping technology allows setup times to be drastically reduced. Module clamping plates with conical centring sleeves can either be bolted or vacuum drawn directly on the machine table or on a base plate. The clamping modules can be changed very quickly, and the reproducibility of the clamping position is only a few hundredths of a millimetre. DATRON offers a variety of ready-made module clamping solutions: vacuum module plates, T-slots with a short-stroke clamping element, clamping chuck or vise.

The development of client-specific applications on request is also possible.





Module Clamping Technology

Module clamping plates



T-slot module clamping plates e.g. for short-stroke clamps



Vacuum module clamping plates



DATRON/Schunk Compact centric clamps and



Rotary axis with tailstock



Description

Clamping elements such as vices can be fastened onto the module clamping plates. The modules are fastened to the machine table by screwing. Recurrent clamping stations can be installed on these base plates and set up when required.

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T-slot module clamping plates offer room for application-specific clamping solutions or the combination of short-stroke clamping elements and fixed clamping jaws. The modules are mounted onto the machine table either by screwing or by vacuum suction.

DATRON's vacuum clamping technology is particularly suitable for clamping flat workpieces and sheet materials. It allows clamping several similar or different workpieces at the same time. DATRON's VacuCard[™] special cardboard is used to distribute vacuum under the workpiece and as sacrificial layer. Vacuum module clamping plates are available in different sizes.

Encapsulated DATRON compact centric clamps are 100% protected against soiling. Due to their especially developed slider geometry with a guide length of 150 mm, they are the first fully encapsulated compact centric clamps. Malfunctions due to soiling and jammed chips are something of the past.

The rotary axis is particularly suitable for multisided machining of long workpieces, for circular engravings or for drilling in radial direction. Clamping is done using DATRON's module clamping technique, allowing a variable clamping length. The rotary axis is impact-free and provides high precision and torsional stiffness.

DATRON Vacuum clamping technology

It can't be clamped? - Not any more!

Even the smallest pieces can be clamped using the high clamping forces of DATRON's sandwich vacuum plates. The patented VacuCard++ special cardboard is the perfect sacrificial layer. Extremely simple and easy to use. Just set up the pieces and... you are ready!

All DATRON machines can be equipped with the DATRON vacuum clamping technology. This allows very high supporting forces by means of a specially developed sandwich construction, even for otherwise difficult to clamp forms and the thinnest plate materials. Vacuum module clamping plates are available in various sizes and are divided into segments that can be operated separately with a vacuum manifold. Several equal or different workpieces can be clamped simultaneously.

Time-efficient nesting, in which a great number of individual parts are processed out of a single plate, is possible thanks to vacuum clamping technology. This way, long machine running times are possible. The special DATRON VacuCard[™] cardboard is used to distribute the vacuum below the workpiece and as an sacrificial layer, allowing the workpieces to be completely contoured and isolated.

Due to its adhesive surface the new "VacuCard++" provides good support for even the smallest and most delicate workpieces..

Advantages:

- Extremely short setup times
- Allows time-efficient nesting
- Deformation and vibration-free clamping of thin plates
- Allows complete contouring and separation of workpieces

Applications:

- Clamping of plate materials
- Clamping of shallow housings
- Clamping of materials and forms that are difficult to stretch

Vacuum module clamping plate MS-VP-B

DATRON Short-stroke clamping elements

One-handed fast setup!

Brilliantly simple to use with the light touch of a button, yet they boast clamping forces of up to 750 N! DATRON's short-stroke clamping elements are used whenever high flexibility, ease of use and short changeover times are required.

The clamping elements are designed to operate on a T-slot table, but can also be used in a stationary way.

Survey of short-stroke clamping elements

KSE-AS

Short-stroke clamping element for automatic clamping operation

Advantages:

- Automatic opening and closing
- Fast conversion
- Adjustable clamping pressure
- Compact design

Application:

- Flexible clamping of different workpieces
- Serial production

KSE-PH

Pneumatic-hydraulic short-stroke clamping elements

Advantages:

- One-hand operation
- Fast conversion
- Adjustable clamping pressure
- Compact design

Application:

- Flexible clamping of different workpieces
- Small serial production





DATRON Sensor XYZ

More than just an integrated "measuring machine": the XYZ sensor measures and compensates in "real time".

Awesome in every dimension - Sensor XYZ

The XYZ sensor is a three-dimensional touch sensor. With its help you reduce the set-up times of your milling machine considerably.

You increase the accuracy and reliability of your referencing. The XYZ sensor takes your production to improved efficiency. Long and tedious setting-up belongs to the past. The special feature is the automatic compensation even of material height tolerances, for example for perfect bevels even of large components, precision depth-machining, and much more. It is amazing how easy machining of some components can get with this DATRON measuring sensor.

Functional principle:

Simply swivel into the work area and increase the production quality within seconds, or check the dimensional stability: With the sensor XYZ, you can consistently optimise your method of production.

① - Material surfaces

The surface of the material is measured by point-digitizing. The height profile created this way is corrected by the CNC or engraving program immediately.

Navigate away from all uncertainties, quickly, easily and comfortably.





(2) - Corners and edges

The edge of a material or the height of the workpiece can be precisely calculated with a measurement Three measurements allow determining both the material height and the exact location of a rectangular workpiece edge.

Advantage:

Reference points on workpieces are determined much more accurately with the DATRON sensor, and just in a fraction of the time required by usual methods.

③ - Midpoints

Midpoints of circular or rectangular materials or cut-outs can be determined automatically.

Advantage:

The material can be precisely centred without a long setup, in just a few seconds. For example, measuring, two drilled holes for reference, a non-angular clamping can be compensated by rotating the coordinate system.



DATRON CleanCut

Time-saving and clean working – the CleanCut suction system is highly effective.

The DATRON CleanCut system allows highly effective chip extraction. By means of this suction technology developed especially for plate processing, an almost chip-free work is achieved. Time-consuming machine cleaning is no longer necessary.

Perfect for sensitive surfaces: chips are sucked off without contact. The automatic extension and retraction of the suction head results in further time saving.

Features:

- Program-controlled swinging in and out
- Precise adjustment of surface distances
- Contactless suction
- Compatible with tool changer station and precision sensor
- Automatic swinging in and out with parking function activated
- Available for spindles with direct-shaft and HSK-E 25 mounting
- Possibility of minimal quantity lubrication

DATRON CNC milling tools

Profitable Milling, Drilling and Engraving

DATRON has developed and delivered solid carbide tools of the highest quality level for more than 20 years. As a manufacturer of high-quality CNC milling, drilling and engraving machines, we have always placed special emphasis on cutting technology.

The technological design and the quality of CNC tools largely determine the cost-effectiveness and quality of CNC machining.

This catalogue provides you with an overview of our current product range. As the result of our own development and trials, as well as our customers' experiences, we are able to offer tools especially optimised for highspeed machining.



Precision:

- Drilling from 0.1 mm
- Milling from 0.2 mm
- Thread milling from M1

Quality made in Germany:

- Development
- Testing
- Production



Economy:

- Max. cutting performance
- Max. lifetime
- Max. process safety

Steel and other hard materials



Stable cutting geometry and high-strength coatings guarantee cost-effective durability when machining hard materials.

Micro two-flute end mills enable filigree machining, three- and four-flute end mills are appropriate for face-milling and contour-milling.

Four-flute ball nose end mills are perfect for creating 3D freeform surfaces.



CNC milling tools for Aluminium/Nonferrous Metals



CNC milling tools for **Plastics/Composites**



High Performance

High cutting performance, quiet running and smooth surfaces: mini-tools, such as the patented single flute end mill with specially balanced cut, the DATRON double flute end mill for smoothing and planing or our threading tools aid you in profitable machining of light metals.



Perfect Surfaces

Due to optimal chip removal, extremely fast feed rates without melding and burrs are also possible with plastics.

Long service life, even with highly abrasive materials with micro-teeth coated tools and innovative CVD diamond tools.

The new single-flute end mill generation with polished cutting edge for machining plastics allows a surface finish of the highest quality.





DATRON Customer Service

From installation up to many years of product support: You can count on us!

DATRON guarantees highly effective machine operation, even many years after purchase, worldwide! By means of practical instruction and training, you will benefit from the full potential of our machines, right from the start.

The latest diagnostic tools and in-depth know-how of our staff ensure smooth running of your production. Our proven spare parts service and our customeroptimized maintenance program minimize downtimes significantly.

When you purchase of a DATRON system, you receive much more than just a machine with controls: you get a team of experts that fully supports you!

More information on our customer service and possible training programs can be found at:

www.service.datron.com

Decentralization

We are present everywhere where we are needed. With our representatives abroad, you have their service team at your disposal on site. Closeness saves time and money: for this reason, DATRON offers several service centres in Germany and worldwide at many of our more than 20 representative agencies.

Cost-effectiveness

Tele-service, e-Messenger, remote maintenance: we offer the latest information technologies for the fastest possible diagnoses and cost effective service.



Friendliness and reliability

Our hotline will help you to find solutions and solve problems, even with software and programming issues. A comprehensive stock of spare parts guarantees the shortest delivery times.



Competence

Trained staff and many years of application experience and practice at our own premises guarantee the high quality of the DATRON service worldwide. The result is that you get sound and competent advice and fast troubleshooting in the event of a malfunction.





DATRON Technology Centre

What machine is best for your manufacturing process depends on many individual parameters. Therefore, sound technical advice and the creation of samples are part of our most important services.

The detailed analysis of your production task forms the basis for our expert advice to optimize your entire production process.

We offer:

- Creation of client-customized samples according to drawings (in printed or electronic form)
- Product demonstrations of our CNC milling machines
- Technology consulting for CAD/CAM selection, clamping techniques and high-speed DATRON mini-tools

DATRON About Us

DATRON AG

Dedicated Employees, Innovative Products

"We develop, produce and distribute innovative CNC milling machines for the processing of future-oriented materials such as aluminium and composite materials, dental milling machines for the efficient processing of all common denture materials in dental laboratories and high-performance dosing machines for industrial sealing and bonding applications."

Strong focus on customer value, cost-effectiveness, low power consumption and flexible customization through modular lightweight construction are features in common of our products.

Standard solutions can be configured in a very high degree for individual customer requirements.

Manufacturing and automation processes can be significantly improved due to matching components already designed in the development stages and the resulting technologically superior characteristics of the DATRON products. This does not only lead to higher production quality, but also reduces manufacturing costs!

DATRON's Core Products:

CNC processing machines for high speed milling and 3D engraving

Milling, drilling and engraving of aluminium and plastics. High production speeds and excellent results are achieved with rotation speeds up to 60,000 rpm.

We are market leader in Germany in the field of front panel and housing processing.

Dental CAD/CAM milling/grinding machines

The ultracompact 5-axis milling/grinding machines are suitable for machining all common dental materials. Equipped with 8-fold automation and 12-fold tool changer, DATRON's machines are the best choice for industrial dental mass production with high reliability, speed and precision.

VDispenser® - Dispensing Systems for precise and rapid bonding and sealing

Our precise volume dispensing technology is available and patented worldwide. Strong cost advantages result in mass production due to the high dosing quality and speed of the systems.

Tools for high-speed machining

In high-speed processing, the quality of the tools is essential for processing results.

Our technology and consulting expertise allows our clients to produce more economically than the competition.

Technical Support

Training, service hotline, maintenance, sale of accessories and spare parts: the professional service and expert advice in all fields leads to high customer satisfaction and to the award of the "Deutschlands Kundenchampions 2011" (Germany's Customer Champion 2011) seal.



Notes





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by E-mail: info@datron.de

or online at: www.datron.de

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