



DATRON C5 **5-axis Simultaneous Milling Machine**

For Machining of Small Parts
Highly Dynamic – Precise – Powerful

DATRON C5

For cost-effective, high-precision
5-axis simultaneous machining of small parts.

DATRON C5 is especially convenient for precise and simultaneous 5 axis milling of small parts in a single clamping operation. All machinable materials up to a diameter of 60 mm are admissible, as well as milling of highly complex geometries.

The automatic tool changer has 22 slots and a built-in tool length sensor. Short setup times, low energy consumption with a power input of less than 2.5 kWh on average and the excellent value for money relation allow having high profitability even at low volumes. And all this with a footprint of only 1 m².

Your advantages at a glance:

- **excellent surface quality** through rigid, vibration-free construction
- **perfect reproducibility with high process reliability** by using a rotary swivel axis with dynamic torque motor drive
- **very high machining performance with the smallest tools** through the use of a 1.8 kW high-speed precision spindle with up to 48,000 rpm
- **very high precision** with high-quality linear guide, ball screws and linear scales

Materials:

- Aluminium
- Composites
- Stainless steel
- Steel alloys
- Plastics
- Brass
- Cobalt chromium
- Zircon



DATRON CNC milling solutions for the 5-axis machining

Applications such as:

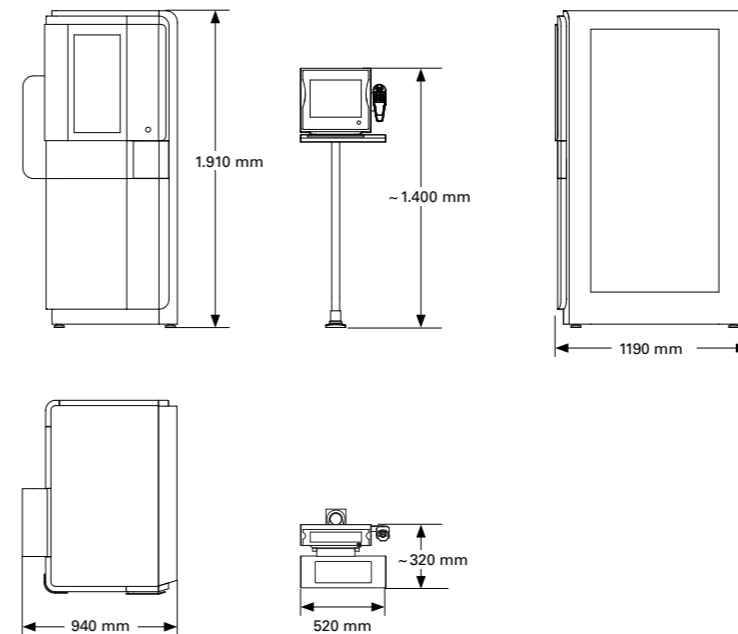
- Micromechanics
- Medical technology
- Tool and mould construction
- Watch and jewellery industry
- Prototype construction
- Dental technology
- Rapid prototyping
- Micro-system technology for analysis and diagnosis
- Aerospace
- Automotive providers
- Eyewear industry



DATRON C5

Highly Dynamic – Precise – Powerful

Complex geometries, small-volumes, high-tech materials: Fast adjustment to new requirements with DATRON C5. Productive and cost-effective starting at a lot size of only 1 piece!



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

- 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
- Zero-point clamping system
- Programme driven minimum quantity cooling lubrication system

Working area	DATRON C5
Traverse path (X x Y x Z)	153 mm x 100 mm x 100 mm
Workpiece sizes (Examples)	Cylindrical: Diameter 60 mm, height 60 mm Diameter 100 mm, height 30 mm Cubic (X x Y x Z): 96 mm x 75 mm x 20 mm 50 mm x 50 mm x 50 mm
Tool length	75 mm (from HSK face contact)
Machine dimensions	
Machine construction	Solid cast steel frame, 4th/5th axis made of cast aluminium
Installation dimensions (W x D x H) without control unit	940 mm x 1190 mm x 1910 mm
Weight	ca. 900 kg
Supply	
Voltage	3 x 400 VAC/16A
Power input	4,000 VA (max. fuse 3 x 16 A)
Air connection	7 - 10 bar, dry, clean, oil-free
Ambient temperature	15 - 30 °C
Machine housing	Compact cabin with easy access for comfortable maintenance
USB interface	✓
Ethernet interface	✓
Convenient manual control panel	✓
Minimal quantity lubrication	✓
Built-in zero-point clamping system	✓
Linear positioning measuring system on all axes	✓ Resolution 40 nm
Tool changer	22fold with tool length sensor
Machining spindle	1,8 kW, up to 48,000 rpm with HSK-E 25 tool holder
Repeatability	< ± 2,5 µm
Absolute accuracy	± 5 µm
Item	0A03010



Saves resources:

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



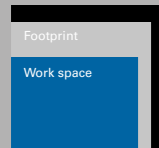
Saves energy:

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



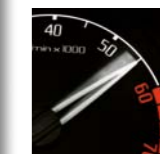
Saves money:

Low-cost in purchase and operation.



Saves space:

Large machining table at extremely small footprint.



48,000 rpm

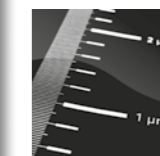
High milling performance with small tools. High dynamic HSC control system.



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



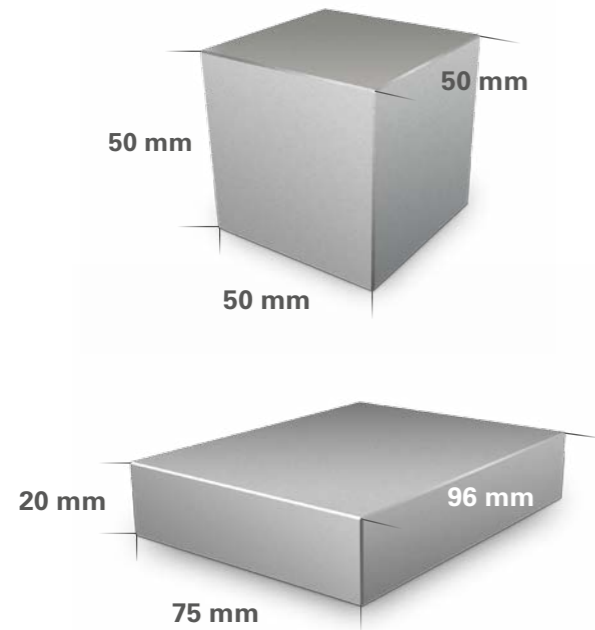
Integrated **zero-point clamping system** with ± 0,5 µm repeatability (optional).



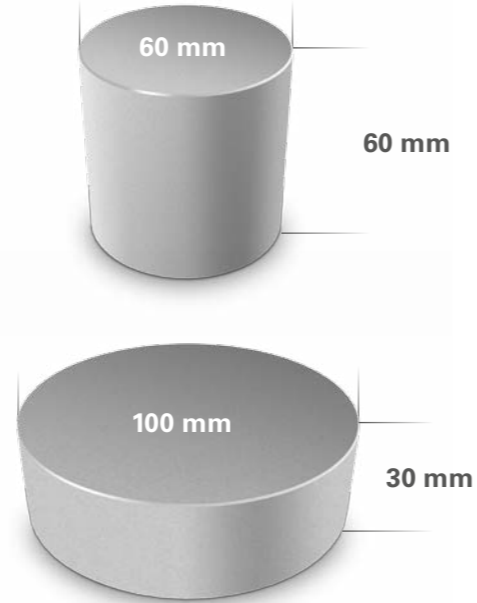
Linear position measuring system with ± 5 µm absolute accuracy and 40 nm positioning accuracy optional).

Examples of workpiece sizes

Cubic components



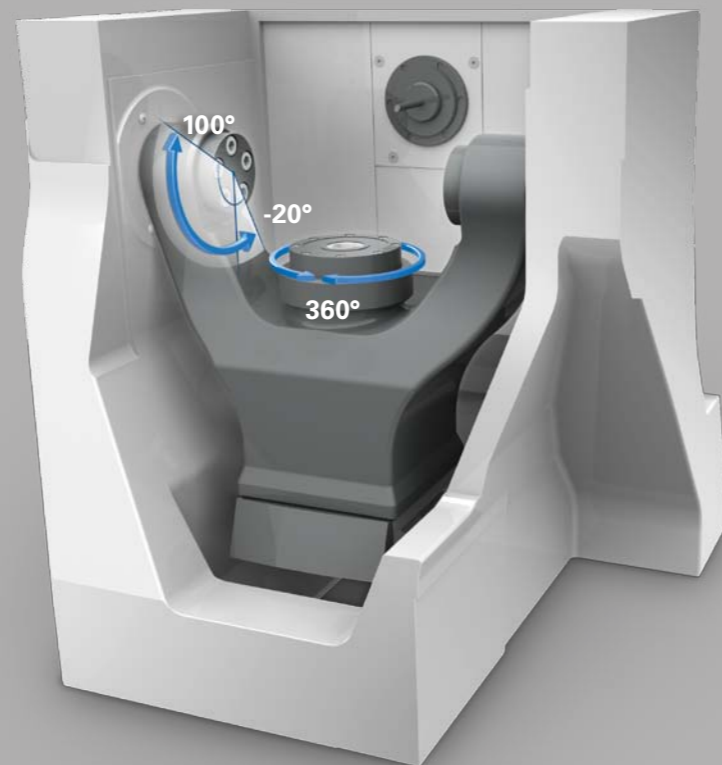
Cylindrical components



Angular variance 4th/5th axis

Highly dynamic - precise - powerful

Complex geometries, small volumes, high-tech materials: DATRON C5



The Technology for Your Success!

4th/5h axis with torque motor
High performance, dynamic, torque, stiffness and precision for all speeds due to water-cooled, low-maintenance torque motors.

1.8 kW HF Spindle
High-frequency spindles with speeds from 5,000 up to 48,000 rpm, and spindle runout better than 2 µm and HSK-E 25 clamping system. For high cutting performance and perfect machining results when using small tools.

22fold tool changer
Easy inserting of up to four tools at once. Automatic tool length measurement up to 35 mm. Tool change possible during processing; no additional traverse path necessary for changing process.

Zero-point clamping element
Short set-up times, high repeatability and precision. Different clamping techniques available for individual requirements.

Position measuring systems
Increased thermal stability and absolute accuracy due to high-precision position measuring systems from Heidenhain in all five axes. Resolution 40 nm.

Minimum quantity cooling/lubrication system
Guaranteed optimum milling results, maximum tool life and minimum consumption. Filling level sensor and easy refill. Patent Pending.

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.

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 CNC milling tools

Profitable Milling, Drilling and Engraving

DATRON offers innovative HSC-milling and engraving tools for even greater success in your production.



Steel and other hard materials



High Performance

DATRON offers specially optimized milling tools for efficient processing of steel and other hard materials.

Double-flute end mills with coating are the first choice for micro-processing due to efficient chip removal.

DATRON offers Cutters with diameters from 0.9 to 2.5 mm with short and very short cutting lengths; drills with diameters from 0.15 mm to 6.5 mm.

Four flute end mills with toric cut, corner radius and coating – with a diameter from 2 mm to 10 mm - also milling deep cavities reliably and fast. Coated double flute ball nose end mills, available from 0.6 mm to 3 mm are ideal for 3D processing.

Nonferrous metals and plastics



High wear resistance

Their unsurpassed chip removal performance turns single flute end mills into a high-performance tool for non-ferrous metals and plastics.

These are easily cut by DATRON in their standard versions, polished edge, toric cut, balanced with ball nose end or left-spiralled, available with diameters from 0.3 mm to 10 mm and various cutting lengths.

Highest quality surface results are obtained with double-flute end mills with different helix angles available with diameters from 0.3 mm to 10 mm. Threads starting with M1 can be machined in an extremely fast and reliable manner with DATRON's thread mill, milling thread mill and multi-thread mill.

"Made in Germany" quality:

- Development
- Testing
- Production

Precision:

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

Economy:

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





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 customer-optimized 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

www.service.datron.de

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.



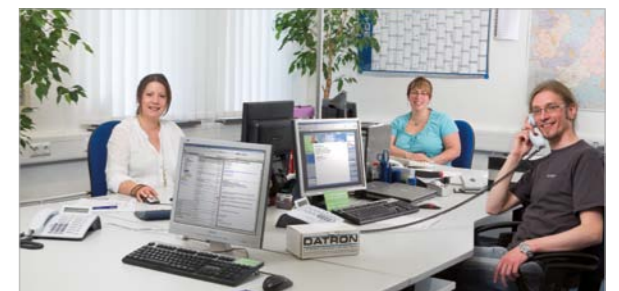
Friendliness and reliability

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,

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.



DATRON Machine Overview

DATRON CNC milling machines and DATRON quality tools are perfectly matched. The combination of machine and tool ensures the highest level of quality, precision and process reliability for your production.

Powerful

DATRON **M10 Pro**



Large-format

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



Precise

DATRON **M8**
DATRON **M7**



5-axis

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



Economical

DATRON **M85**
DATRON **M75**



DATRON offers products and services for manufacturing and automation. The common feature for our products is the high level of innovation and the strong orientation toward customer benefit.

DATRON products are „problem solvers“. Due to the practical layout of the overall systems and the technologically excellent characteristics, our products can radically improve your production or automation processes. Thanks to consistent modularisation, DATRON offers standard solutions which can be configured to a great extent to meet individual customer requirements. In addition, we support our customers with a wide range of services.



**We will be happy to provide you with detailed information at:
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