



# DATRON **M8Cube**

Milling, drilling and engraving  
**Speed – precision – efficiency**

# DATRON M8Cube

## Efficient machining of aluminum and other high-tech materials

The DATRON M8Cube is the best choice for efficient milling of enclosures, front panels and profiles of aluminum.

But other non-ferrous metals or composite materials can be processed very efficiently with the M8Cube as well. Short set-up times, very low power consumption and excellent value for your money, the M8 delivers extremely high R.O.I.

### Benefits at a glance:

- You will save space!  
Very large working area while at the same time having a small footprint.
- Save money!  
The M8Cube is affordably priced and has extremely low operating costs.
- You have new opportunities in milling, drilling and engraving! The M8Cube is designed for processing High-tech materials with small tools ( $\varnothing$  0.1 mm to 20 mm) and has been developed Innovative milling technology "Made in Germany" for your success.







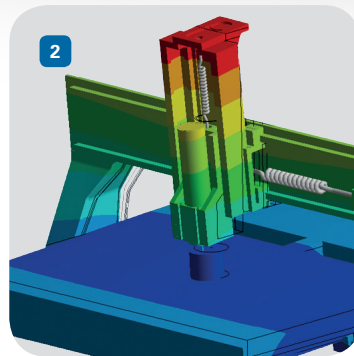
# Highlights of the **M8Cube**

You have a special project –  
we have the solution.

- **Precision** through optimized controls with a focus on acceleration and rigid mechanical design.
- **High speed** precision spindles with up to 60,000 rpm  
0.6 kW to 3.0 kW.
- **Rigid, low-vibration design** of the machine for excellent surface quality when machining.
- **High accuracy** by high value linear guidance, ball screws, HSK-E 25 tool holder (optional)







#### 1 Terminal with Portrait monitor (optional)

- A A chip density safe "IP68 keyboard" with fatigue-free, low profile keys and integrated touchpad
- B Easily accessible control elements with quick-start buttons for Open door, Spindle On / Off and Run Macro and a USB2.0 jack.
- C High-resolution portrait display that is protected from chips
- D Ergonomic hand control
- E Integrated signal lights in the gantry and the side of the operator terminal to display the Machine status (optional).

#### 2 Optimized for dynamic machining

The precision and quality is the result of a ground up redesign of the M8 Machine Structure. This new design was developed in such a way that an optimum ratio was achieved weight and improving rigidity and accuracy within the machine. Through intensive FEM Calculations, Datron was able to further improve the mechanics for high-speed machining. An reinforced polymer concrete table allows optimum vibration damping, that results in perfect milling results.

#### 3 Improved door concept

The innovative new door concept improves upon the previous DATRON M8 door. The new design aids ergonomics and provides more comfortable operation.

##### Large chip cart

The spacious chip cart is optimized for high volume production. Through its lightweight, well lubricated wheels, the cart can be easily moved around work shop floor even when loaded to capacity.

# DATRON M8Cube



## Energy saving:

Very low power consumption at high metal removal rates by using energy-efficient units.



## Money saving:

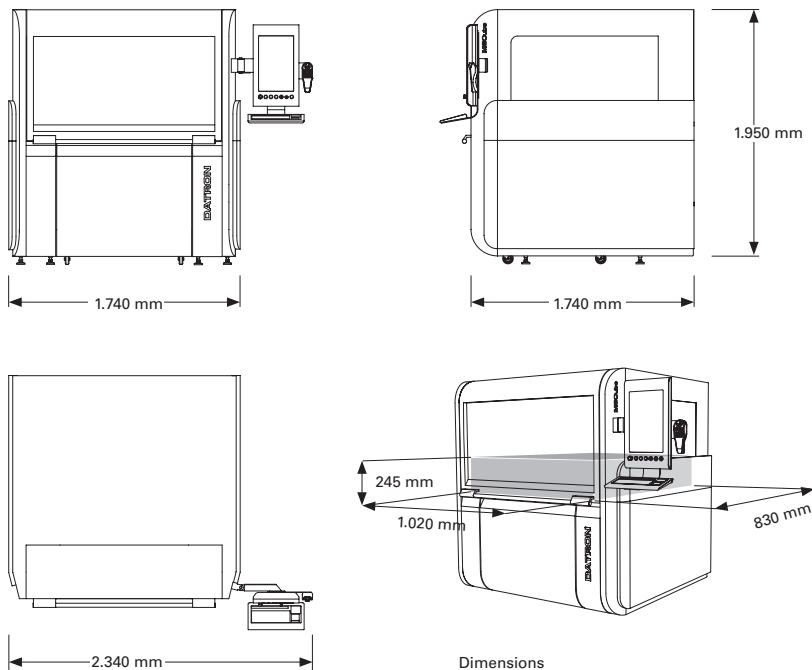
Economical to purchase and in operation.



## Space-saving:

Large X,Y travel with a small footprint.





**Status display** with integrated signal lights on handheld unit as well as the portal display of the machine status (optional).



**Precision spindle** with a rotational accuracy better than 2 microns and HSK-E 25 tool holder (optional).



**XYZ-measuring system** integrated: measurement functions with a simple material tolerance compensation (optional).



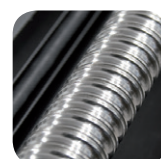
**Resource saving:** minimum lubrication system At 30 ml/h. Reduced proceed on cleaning your parts after.



**Up to 60,000 1/min**  
High speed milling with small tools. Highly customizable HSC-Dynamic control.



**5-axis milling with a rotary tilting table** for precise multi-sided machining of small pieces (optional).

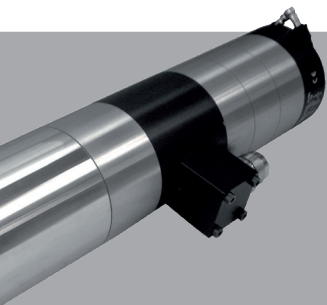


**Precision ball-nut screw** and linear guides from leading vendors. Brush-less direct drives in all axes.

Specifications	DATRON M8Cube
Machine table	Solid concrete polymer table with steel frame and an extremely rigid gantry structure with double-sided Y-drives
Travel (X x Y x Z)	40" x 32" x 9"; 28" in Y with tool changer
Portal Height	8"
Size without Monitor (W x D x H)	69" x 69" x 77"
Conical receivers integrated in table	✓
Fast digital servo control with Microsoft® Windows® control software and PC	✓
Convenient hand-held control unit	✓
Drive system: Brushless servo drives with Absolute encoders; Ball screw for each axis	✓
Spray-mist Coolant	✓
Machining spindle	Precision high frequency spindles from 0.6 kW to 3.0 kW up to 60,000 rpm
Tool changer with integrated tool length sensor	5-tool with HSK-E25 toolholder (10-tool optional) 15-tool with direct shaft tool holder (optional 30-tool)
Feed	up to 870" / min
Rapid traverse	up to 870" / min
Weight	approx. 2,866 lbs.
Article Number	0A03200A/B



# The technology for your success!



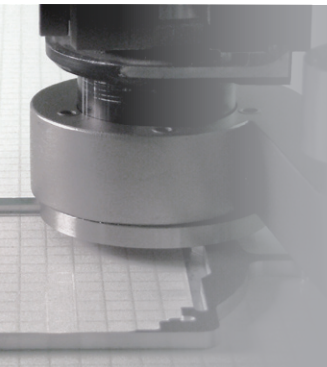
## HF spindles

High frequency spindles up to 60,000 rpm guaranteed for precision concentricity and perfect machining results when using small tools.



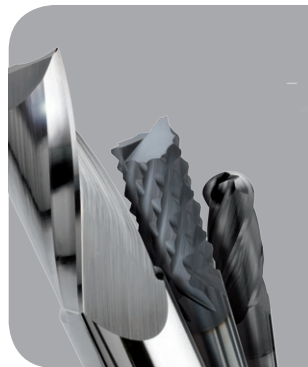
## Coolant and Lubrication

Environmentally and economically optimized spray-mist coolant system that yields longer tool life and improved surface and edge finishes.



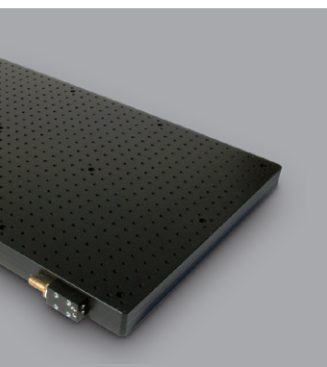
## CleanCut Chip Removal

Nearly chip-free machining with this highly efficient chip-extraction system. The time-consuming task of cleaning chips off the machine is eliminated with this optional set up.



## CNC Milling

Through years of experience and intensive communication with our customers, we developed tools designed specifically for high-speed machining.



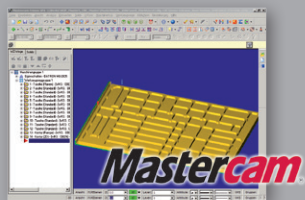
## Workholding

Whether pneumatic or vacuum clamping technology: DATRON can integrate workholding that allows quick set up and flexibility for job change over.



## Measurements

The XYZ sensor guarantees short setup times, increased precision and efficiency by automatic measurement, edge finding and part recognition.



## CAM Software

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



## DATRON Machine software

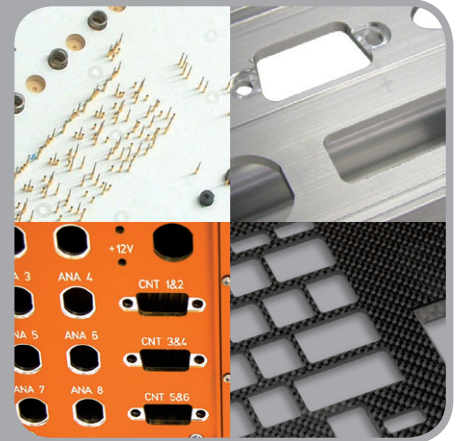
The machine software "DATRON CNC v9" offers convenient functions for the rapid CNC programming and acquisition of any size 3D CNC files.

# M8Cube Applications

The high-speed milling of DATRON M8Cube offers excellent results in the following industries and applications:

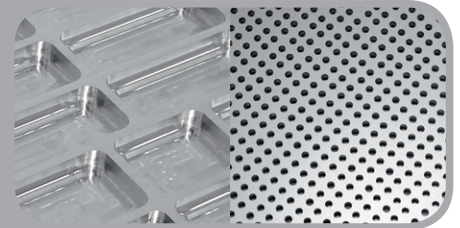
## Electronics Industry

- Panels, housings and enclosures
- Keypads, membrane switches
- Connectors and adapters
- 3D rapid prototyping
- Test beds and sockets
- Wave solder pallets
- PCB routing and trace cutting



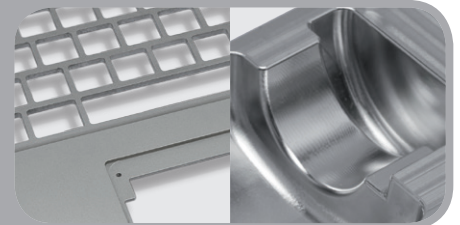
## Aerospace

- Instrument panels, control panels
- Profiles and extrusions
- Precision micro hole drilling



## 3D Parts and Forms

- 3D aluminum molds
- 3D rapid prototyping
- Graphite electrodes
- Small steel shapes



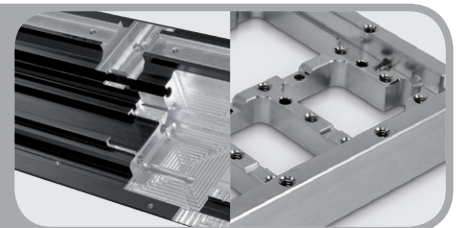
## Engraving

- Firearm engraving
- 3D stamps and dies
- Counter plates
- Embossing dies



## Automotive industry

- Aluminum profiles
- Small molds
- Instrument panels and rocker panels



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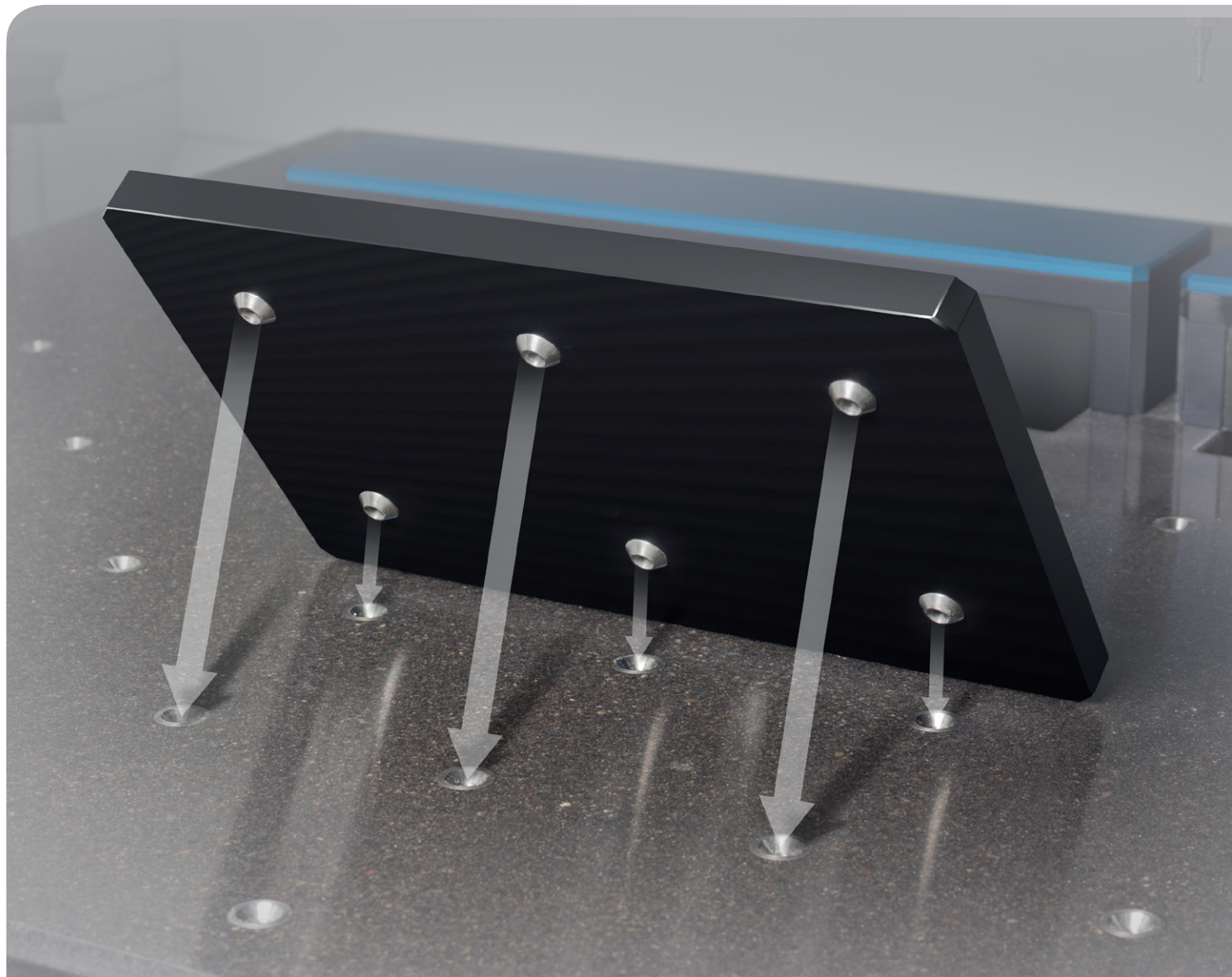
## Module clamping technology

The end of a long development and set-up time!

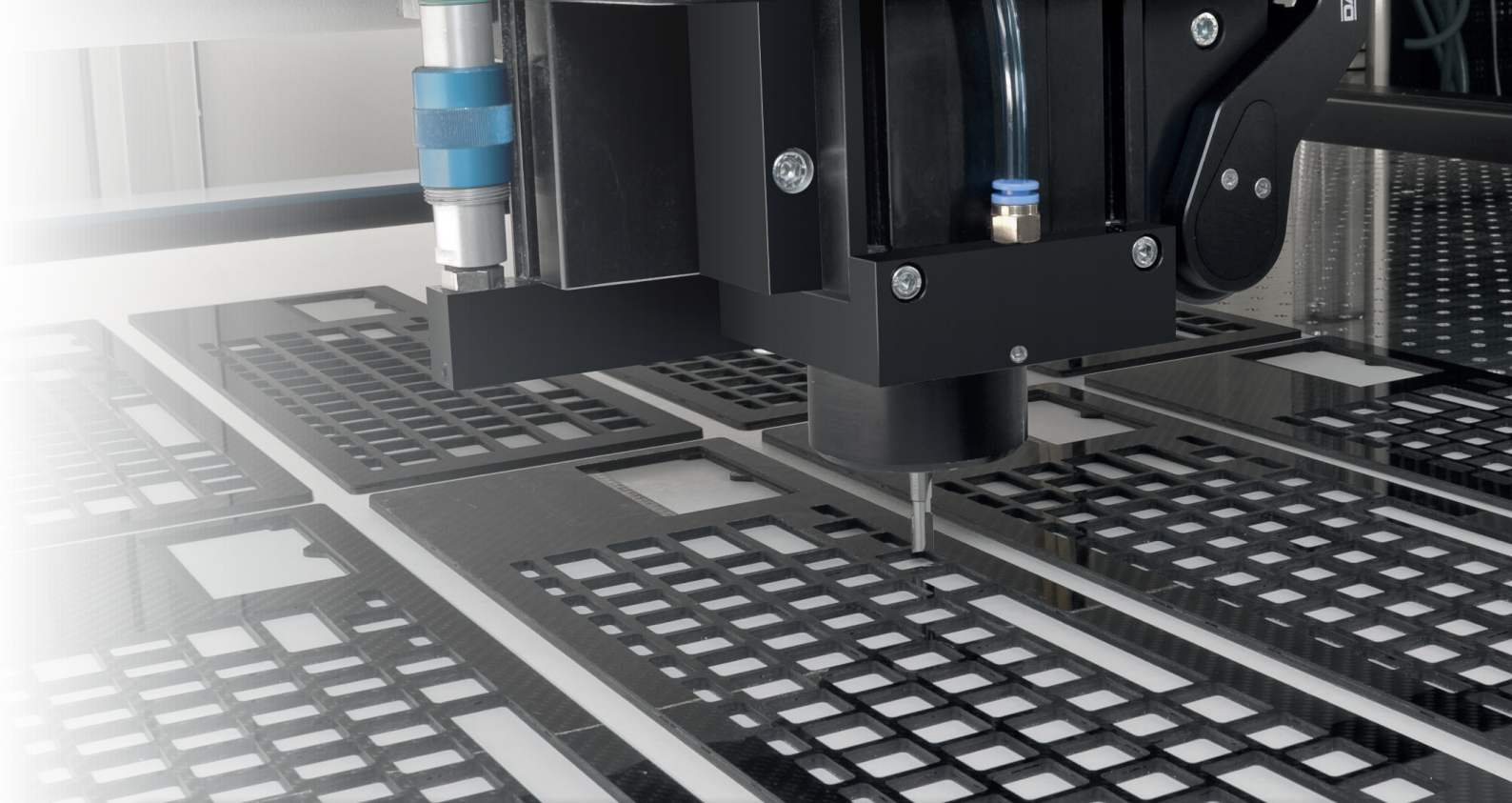
### **Customizable within seconds though economic tension system:**

The modular clamping technology DATRON make ready can often be reduced considerably. By conical centering, the module plates can be clamped directly to the machine table. This applies to all machines with integrated cone clamping system. Thus, the clamping modules can be changed very quickly. The reproducibility of the clamping position is only a few hundredths of a millimeter off, during a planned module change.

DATRON offers a variety of finished module clamping solutions: module clamping plates with vacuum, T-slots with and pneumatic work holding clamps, chucks or vises. We gladly will also design custom work holding solutions for you. Use our experience of hundreds of machine installations.







Module clamping technology	Description
<p>Modular Clamping Plates</p> 	<p>On these module clamping plates clamping devices such as vises can be attached. They are installed by mounting them directly into the chronicles of Machine table. On these bases, recurrent Clamping stations can be setup and then converted quickly when needed.</p>
<p>T-Slot Table</p> 	<p>The T-slot module clamping plate has room for application specific Mounting solutions, or a combination of short stroke clamping elements and or fixed clamping jaws. The modules are mounted on the machine table either via screw or via the vacuum suction.</p>
<p>Vacuum Table</p> 	<p>The DATRON vacuum clamping technology is particularly suitable for clamping flat work pieces and sheet materials. Here, a plurality of similar or different work pieces are clamped. The DATRON special cardboard VacuCard™ is used to distribute the vacuum under the work piece and as a sacrificial layer. The vacuum module clamping plates are available in different sizes and are up to your specification.</p>
<p>DATRON/Schunk Multi -Clamp Systems</p> 	<p>The encapsulated DATRON Compact Vise is 100% protected against contamination. Through its specially developed guide vane geometry with length of 150 mm, this system is the first fully enclosed vise ever produced. Mal-functions due to soiling and clamped chips are a thing of the past.</p>
<p>Rotary Axis</p> 	<p>The use of rotation axis is particularly suitable for multi-sided machining of long work pieces, for circular engravings or for drilling in the radial direction. Mounting through a DATRON module clamping system is completely customizable based on the length of the work piece that needs to be rotated. The rotation axis is non-impact and provides high precision and stiffness.</p>

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## Vacuum clamping technology

Moving work piece on the table - a thing of the past.

**With the high holding forces of DATRON sandwich vacuum plates even the smallest parts can be held on the table. The patented special cardboard VacuCard + + is the perfect sacrificial layer. Extremely simple and easy in the application; replace finished parts with new one - finished!** All DATRON machines can be equipped with the DATRON vacuum clamping technology. This is made possible by specially developed sandwich vacuum plates that generate very high holding forces, even in otherwise difficult to hold shapes and the thinnest plate materials. Available in different sizes vacuum module clamping plates are divided into segments, which are separated with a vacuum manifold and can be operated separately from one another.

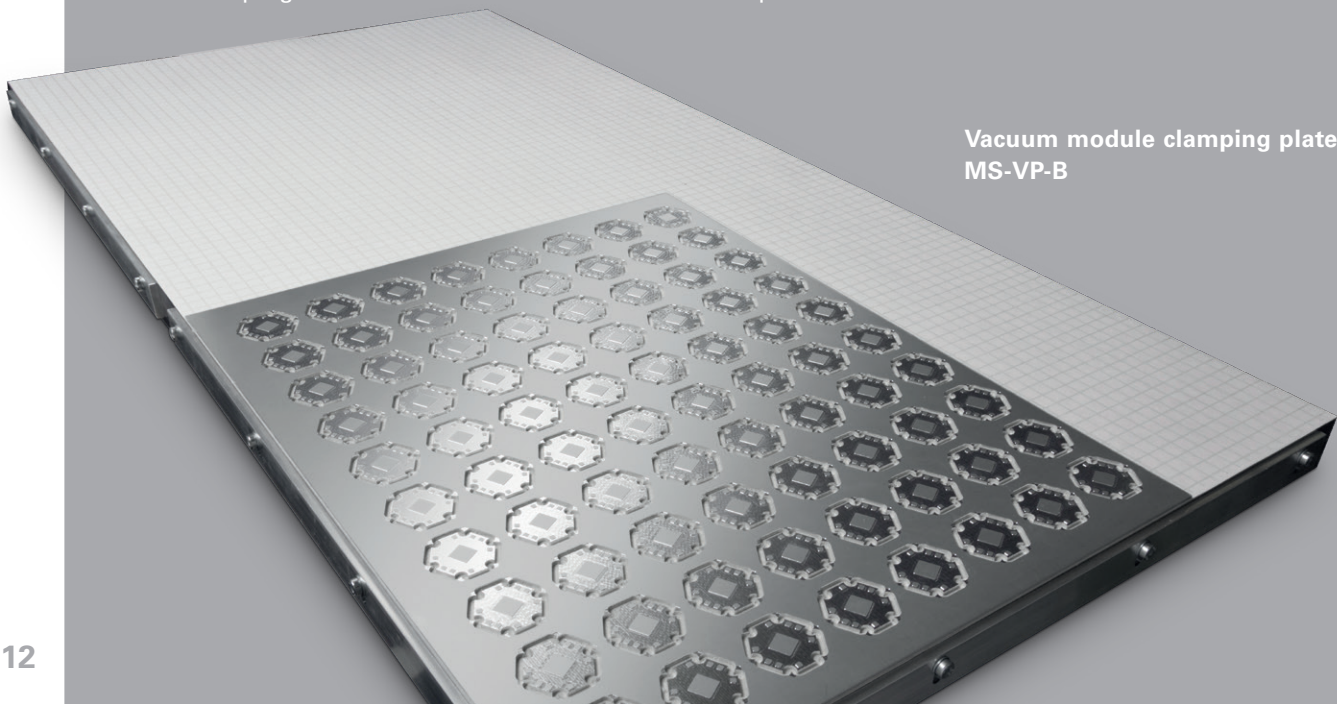
It is also possible to simultaneously clamp several different work pieces at one point in time. The efficient use of processing time, where you get multiple finished products from a single plate of raw material is now possible thanks to the vacuum work holding. This enables high machine utilization without much of a down time. The DATRON special cardboard VacuCard is used to distribute the vacuum under the work piece and is also a sacrificial layer. The novelty item "VacuCard + +" is also offered with a self-adhering surface so that you can place even small delicate work pieces on your machine and still have great support to hold those pieces in place.

### Advantages:

- Very short set-up times
- Time-efficient benefits during processing
- Deformation and vibration-free clamping of thin plates
- Complete milling around a work piece and possible work on separate work pieces

### Application:

- Clamping of sheet materials
- Clamping of flat housings
- Clamping difficult tension-able materials and shapes



Vacuum module clamping plate  
MS-VP-B

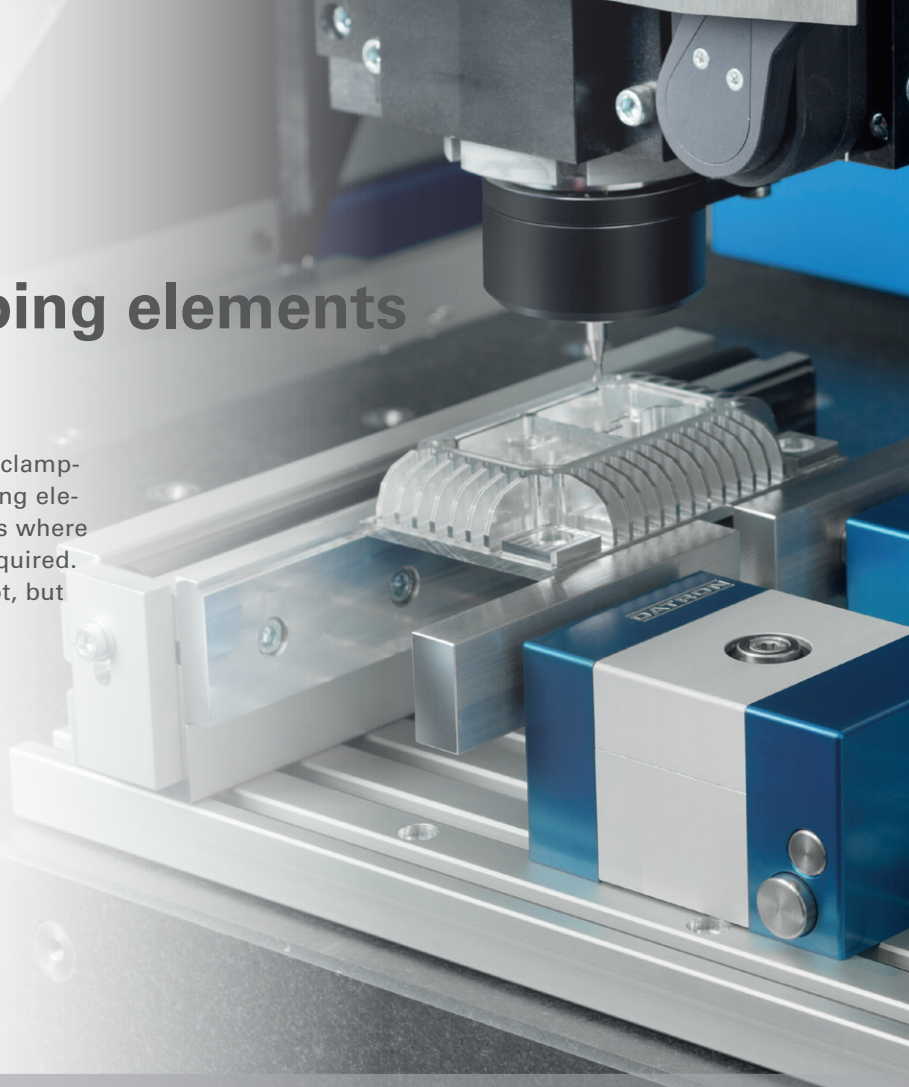


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# Short-stroke clamping elements

Quick, single handed setup!

Brilliantly simple to use with a light touch, yet a clamping force of up to 750 N. The short-stroke clamping elements from DATRON are effective in applications where high flexibility, ease of use and short setup is required. The clamps are designed for operation on a T-slot, but can also be used as stationary units.



## Short-stroke clamping elements Overview

### KSE-AS

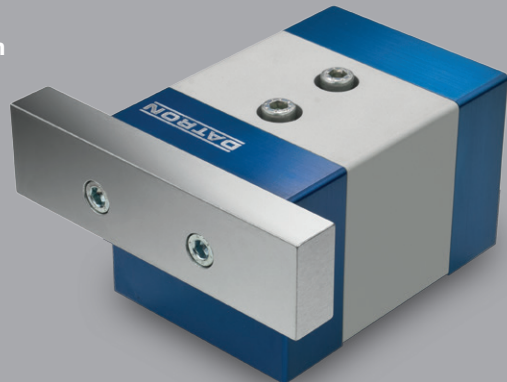
Short-stroke clamping elements for automatic tensioning operation

#### Advantages:

- Automatic opening and closing
- Rapid changeover between work pieces
- Adjustable clamping pressure
- Compact and practical Design

#### Application:

- Flexible clamping of different work pieces
- Repetitive Manufacturing



### KSE-PH

Pneumatic hydraulic clamping elements Short

#### Advantages:

- One handed operation
- Rapid changeover in materials and work pieces
- Adjustable clamping pressure
- Compact Design

#### Application:

- Flexible clamping of different work pieces
- Small batch production





# DATRON XYZ Sensor

More than an integrated „Measuring Machine“:  
the XYZ sensor measures and compensates in „real time“

## Amazing in every dimension - XYZ sensor

The XYZ sensor is a three-dimensional touch sensor. Its use will reduce the set-up of your milling machine considerably. It increases the accuracy and reliability of the referencing components to its maximum. Through the use of the XYZ sensor your production can reach its peak ROI level and be the most economic machine on your floor. Time consuming setup times are a thing of the past. One of the most remarkable features is the automatic compensation in material height tolerances that will result perfect bevels even on the largest parts, resulting in a more precise machining process and more. Amazing how easy this DATRON Probes can be in some of your operation procedures.

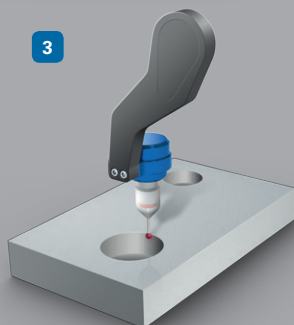
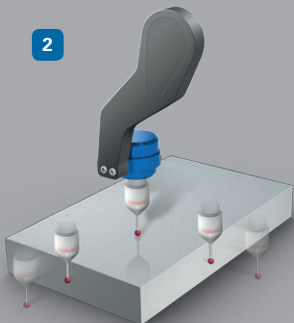
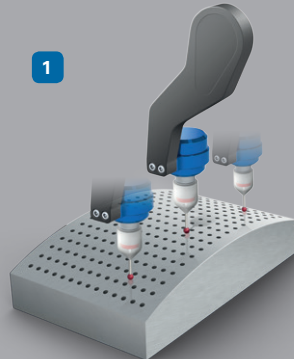


## How it works:

Simply swing the probe into the work space and increase the production quality within seconds or check the dimensional accuracy: The XYZ sensor is guaranteed to optimize your production immediately and consistently.

### 1 - Material surfaces

Surface of the material is measured by grid-shaped scanning. The thus created Altitude profile is corrected by the CNC or engraving program immediately. Navigate quickly, easily and comfortably across all uncertainties.



### 2 - Corners and edges

With a single measurement maneuver the material edge or the work piece height can be determined accurately. With three measurements of both the material level and the exact position of a rectangular edge of the work piece is determined.

#### Advantage:

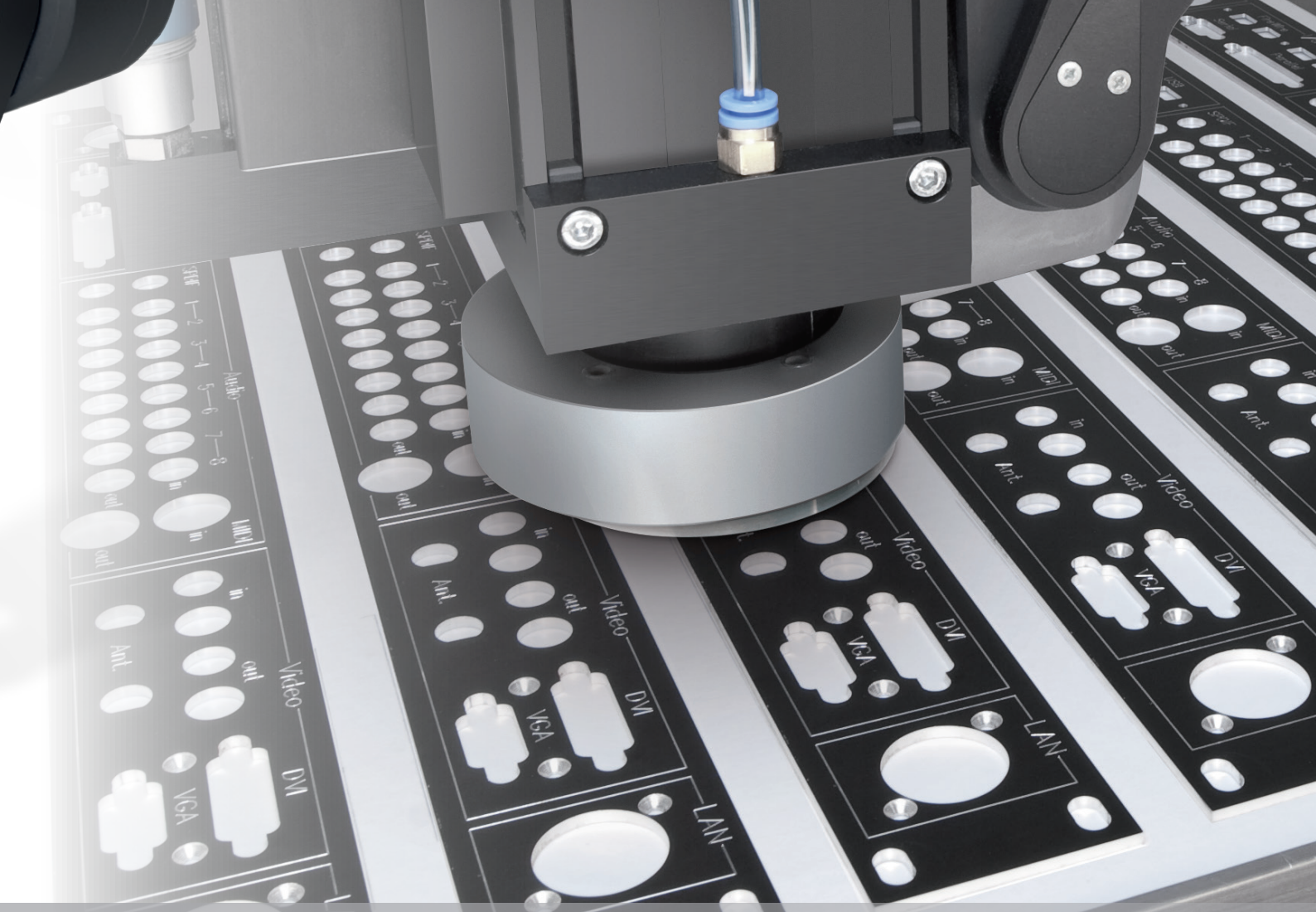
The determination of reference points on work pieces is achieved much more accurately with a XYZ sensor and it can do that within a fraction of the time of conventional methods.

### 3 - Finding the Center of your work piece

Midpoints of circular or rectangular islands and outbreaks can be determined automatically.

#### Advantage:

Without a long setup time, within a few seconds the work piece can be precisely centered. Just by measuring two reference holes for example, an uneven work piece can be compensated for and the rotation of the machine coordinate system will compensate for such issues.



## DATRON CleanCut

Time saving and clean work area –  
the CleanCut system is highly effective.

The DATRON CleanCut system (as an option for the M8 Cube available starting 2013) provides a highly effective dust extraction. Through this specially designed chip suction technology for panel processing an almost perfectly clean work holding area can be achieved. The time-consuming cleaning of the machine is not necessary.

Perfect for sensitive surfaces: the chips are extracted without contact. The automatic extension and retraction of the suction head is another time saving feature that can come with the M8Cube.

### Properties:

- Programmable in and out movement
- Surface distance adjustable precision
- Non-contact extraction of excess material
- Compatible with tool changer stations and XYZ Sensors
- Automatic in and out movement during the Park feature
- Available for spindles with direct shaft and HSK-E 25 holding
- Minimum quantity lubrication still possible

# DATRON CNC Milling

Profitable drilling, milling and engraving

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



## Quality „Made in Germany“:

- Development
- Testing
- Production

## Precision:

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

## Economical:

- Maximum Cutting performance
- Maximum Life
- Maximum Process safety

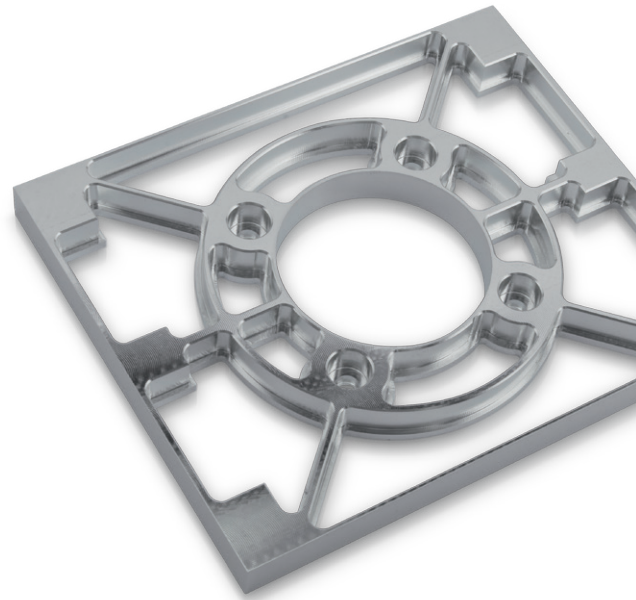


## Cutters for aluminum / non-ferrous metals



## High Performance

High cutting performance, silent operation and smooth surfaces: cutting tools such as the patented balanced single flute cutters, twin cutter for contour milling or face milling or our threading milling tools will assist you in profitable machining of light alloy materials.



## Cutters for Plastics / Composites

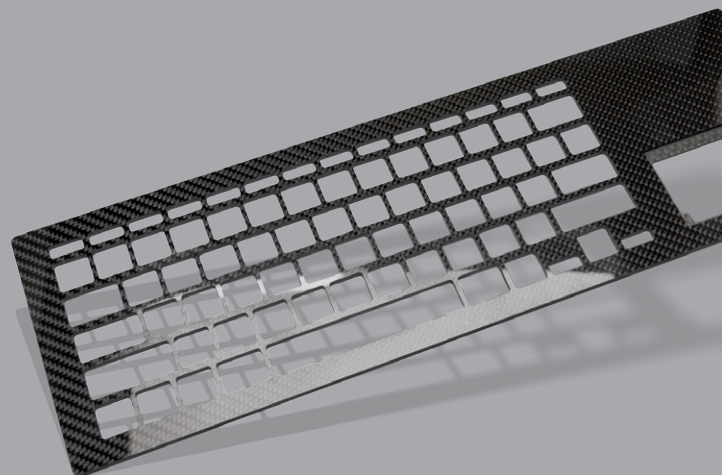


## Wear-resistant

DATRON CVD Tools are perfect for milling plastics and other highly abrasive materials while keeping optimum chip removal at rapid feed rates without tool deflection and or burrs.

An increased tool life can be guaranteed with these coated micro tooth and CVD diamond tools even in highly abrasive materials.

Polished single flute tools can be used for cutting plastic surfaces that will result in a perfect end result of your raw material that will need no further processing.





## DATRON Customer Service

**Trust us with installation and continued support for years to come: You can count on us!**

DATRON guarantees maximum efficiency in machine operation — even many years after your purchase! Through hands-on instruction and training, your use of this DATRON machine will be at full potential right from the start. With the latest diagnostic tools and in-depth know-how of our staff, we ensure the smooth running of your production. Our proven spare parts service and the optimized maintenance program minimizes downtime for our customers. By purchasing a DATRON system, you purchase more than one machine, you get a team of experts that supports you in all your endeavors!

For more information about our service visit:

**[www.datron.com](http://www.datron.com)**

## Decentralized

DATRON has representation wherever we are needed. At our partner locations, their service teams are available for your on site needs. Short travel ways to save time and money: This is why DATRON offers several service centers in Germany and worldwide through more than 20 agencies worldwide.



## Economical

Phone Service, e-Messenger, Remote maintenance: We offer the latest information technologies for the fastest possible diagnoses and cost effective service.



## Friendly and reliable

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



## Competence

Well trained staff, years of application experience and continuous in-house training guarantee the high quality of DATRON service worldwide. As a result, you get sound and competent advice, and your errors get correct quickly in the event of a fault.







## DATRON Technology Center

Which machine is best for your production needs depends on many different parameters. Therefore sound technical advice and the benchmark samples of your parts on our machine are all part of our key services to help you decide which machine is best suited for your needs.

Accurate analysis of your production task forms the basis for our professional advice to optimize your entire manufacturing process from the ground up.

### We offer:

- Creating customized sampling by drawing information (Printed or electronic form)
- Product demonstrations of CNC milling machines
- Technology Consulting for CAD / CAM selection of clamping techniques and high-speed milling on DATRON Systems

# DATRON

## About us

### DATRON AG

**Dedicated employees and innovative products**

We develop, produce and distribute innovative CNC milling machines for the processing of future oriented materials such as aluminum and composite materials, dental milling machines for the efficient processing of all standard dental materials in dental laboratories and high quality dispensing for industrial sealing applications.

A common characteristic of the products are the strong focus on customer value, and a very good price value / performance ratio. Other benefits are low power consumption and flexible adaptation of modular lightweight construction. Standard solutions can be adapted to a large extent for individual customers and their specific requirements.

Even during the R&D steps of manufacturing a new machine we match components to the machines based on the characteristics that we know will result in a technologically superior DATRON product. This not only leads to a higher production quality, but also to lower manufacturing costs!

### The core products of DATRON are:

#### **CNC milling machines for high speed milling and 3D Engraving**

Milling, drilling, engraving aluminum, stainless steel, Plastics and composites. With speeds up to 60,000 1/min high production cycles and perfect results are achieved.

In the area of the front panel and case processing industry we are the market leader in Germany.

#### **Dental CAD / CAM milling / grinding machine**

The ultra compact 5-axis-milling and grinding machines is suitable for processing of all standard dental materials. Equipped with 8-row material pugs and an automation of a 12 multi tool changer, DATRON machines are the best choice for the industrial scale production of dental materials resulting in high reliability, speed and precision.

#### **VDispenser® - Dispensing Machines for precise and rapid dispensing and sealing**

Global leaders and protected by patents, Datron Machines are the only precise volume dosing systems currently available. The high quality of dispensing while maintaining a high speed of the equipment, result in a strong benefit and Cost advantages in high series production.

#### **Tools for high-speed machining**

In high-speed machining, the quality of the tools is crucial for the processing results. Our technology and consulting expertise enables our customers to manufacture more efficiently than their competition.

#### **Technischer Kundendienst**

Training, service-hotline, maintenance, accessories and spare parts for sale: The professional care and expert advice DATRON offers in all areas result in high customer satisfaction and gives us the award of „Germany Customer Champions 2011.“



# DATRON

## Machine Overview

The DATRON CNC milling machines and DATRON quality tools are perfectly matched to each other. The combination of machine tools and accessories ensures the highest quality, precision and process reliability for your production needs.

### Powerful and very precise

DATRON **M10 Pro**



### High production and versatile

DATRON **M8Cube**

DATRON **M8**

DATRON **M85**



### Precise and economical

DATRON **M7**

DATRON **M75**





**Large format  
and efficient**

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



**5 axis and compact**

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





**Contact us by phone at:**  
**888.262.2833**



**or online at:**  
**www.datron.com**

The information in this brochure includes current descriptions and/or performance features that may change due to ongoing development of our products. Some of the depicted machines include optional components. Descriptions and performance features are only binding if expressly agreed on in writing upon conclusion of the contract.

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