

DATRON

Smart Manufacturing Solutions

DATRON D5



reddot design award
winner 2010



Designpreis
Deutschland
2011

NOMINEE

Made in Germany 



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We Understand Dental

Because of Our Dental Technical Know-How

Besides being experts in machine construction, we are also experts in the dental field: An in-house team of dental technicians and dental engineers exclusively cares for the needs of our customers in the dental technology sector.

With many years of CAD/CAM expertise and dental technical know-how, we have designed our DATRON D5 to cater to the particular needs of dental laboratories. We anticipate technological trends and implement their aspects into a validated CAD/CAM process at our company's Technology Centre. This way, our customers today can apply the technologies of the future!

We are at our customers's full disposal regarding the operation and implementation of new dental applications, offering expert guidance via our hotline.



Decades of Expertise in Building Milling Machines

Since 1988, DATRON has been dedicating itself to the development and production of high-speed milling machines. All products are manufactured exclusively in Germany and represent highest quality “Made in Germany”.

In order to continuously develop and enhance our machines and to provide customers with the latest machining technology, 25% of our staff work in R&D. DATRON is committed to numerous research projects concerning efficiency improvements and production technologies of the future, working in close cooperation with universities and selected technology partners.

More than 2,800 DATRON machine systems are in operation worldwide, and our customers in the dental field benefit from this extensive and long-standing expertise. The D5 reflects this encompassing know-how, being a mature and proven system that can also fulfill future technical requirements.



Models



Directly Screwed-Retained Indications



Individual Abutments



Telescopic and Conical Crowns and Attachments



Crowns and Bridges



Inlays, Onlays, Veneers and Partial Crowns



Temporary Dentures

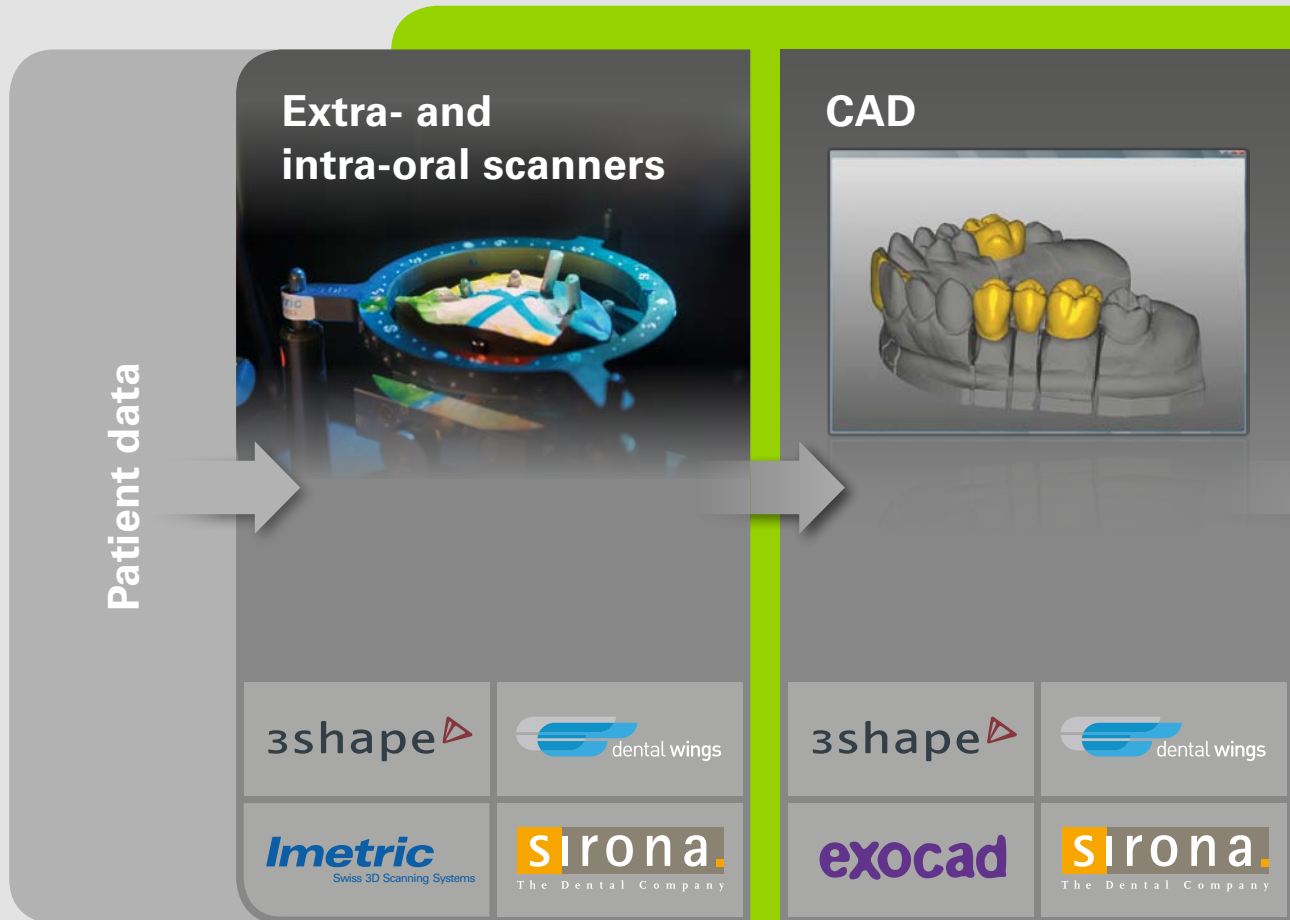


Occlusal Splints

We Take Responsibility – The Validated DATRON Workflow

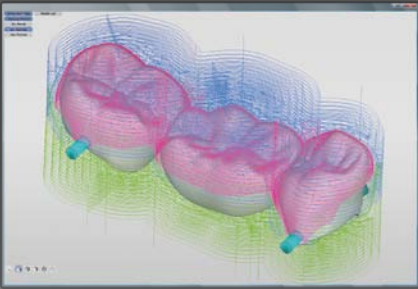
In cooperation with technology partners leading in the industry, DATRON offers the entire CAD/CAM process from a single source. A full range of scanners, CAD and CAM software solutions meeting individual custo-

mer requirements are available and allow us to offer high flexibility and utmost process reliability at the same time! We take responsibility for fully matched components, configurations and templates approved by DATRON.



We are your central point of contact if you need further help along the way.

CAM



Dental Softworks

DentMILL
Dental CAD/CAM Suite



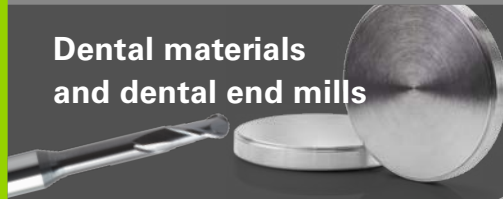
hyperDENT

WorkNC
DENTAL

5-axis simultaneous machining



Dental materials
and dental end mills



Postprocessing

Perfectly Coordinated and Open to Innovations!

Scanner

3shape

dental wings

Imetric
Swiss 3D Scanning Systems

sirona
The Dental Company

Whether intra- or extra- oral scanners, with light strip technology or laser-cutting techniques:
Determining the best scanner for you depends on your individual requirements.
This is why we collaborate with renowned scanner manufacturers to always offer our customers the best solutions to their needs.



CAD

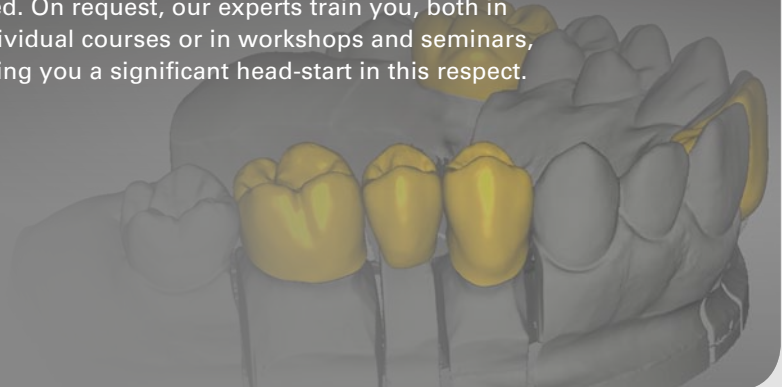
3shape

dental wings

exocad

sirona
The Dental Company

Whatever you require to mill:
First, it needs to be designed in 3D with a CAD software.
Depending on the scanner in use and the customer's requirements, we provide a perfect solution for every need. On request, our experts train you, both in individual courses or in workshops and seminars, giving you a significant head-start in this respect.



CAM software is used to calculate the milling paths for the DATRON D5, to determine the milling tools needed and to nest the restorations within the virtual blank. This information is then passed on to the machine, resulting in high-precision machining. We offer an extensive assortment of software tools from renowned manufacturers, from the most cost-effective variant to the high-end software solution in the field of implant-supported indications.

CAM

Dental Softworks
DENTAL SOFTWARE

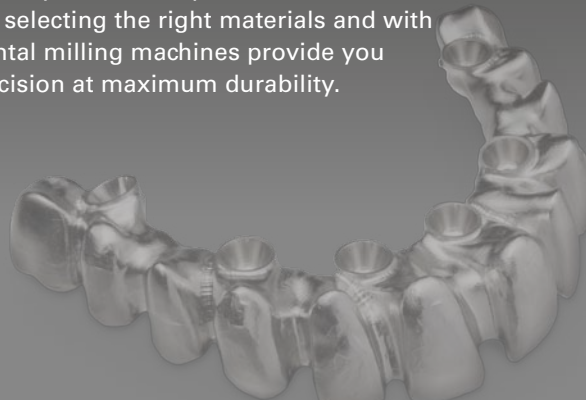
DentMILL
Dental CAD/CAM Suite

hyperDENT



WorkNC
DENTAL

The DATRON D5 is always the best choice for milling all common restorations made of most denture materials! The milling tools and materials also have a major impact on the quality of the final products. We assist you in selecting the right materials and with our DATRON dental milling machines provide you with highest precision at maximum durability.



5-axis simultaneous machining



DATRON D5 – The Right Choice for Everybody

DATRON D5 Entry

To machine soft materials, such as zirconium, composite, PMMA, polyurethane and wax.



D5 Metal

To machine NPM
...and soft materials.



D5 Universal

To grind glass ceramics
...and mill NPM and
soft materials.



With linear Scales

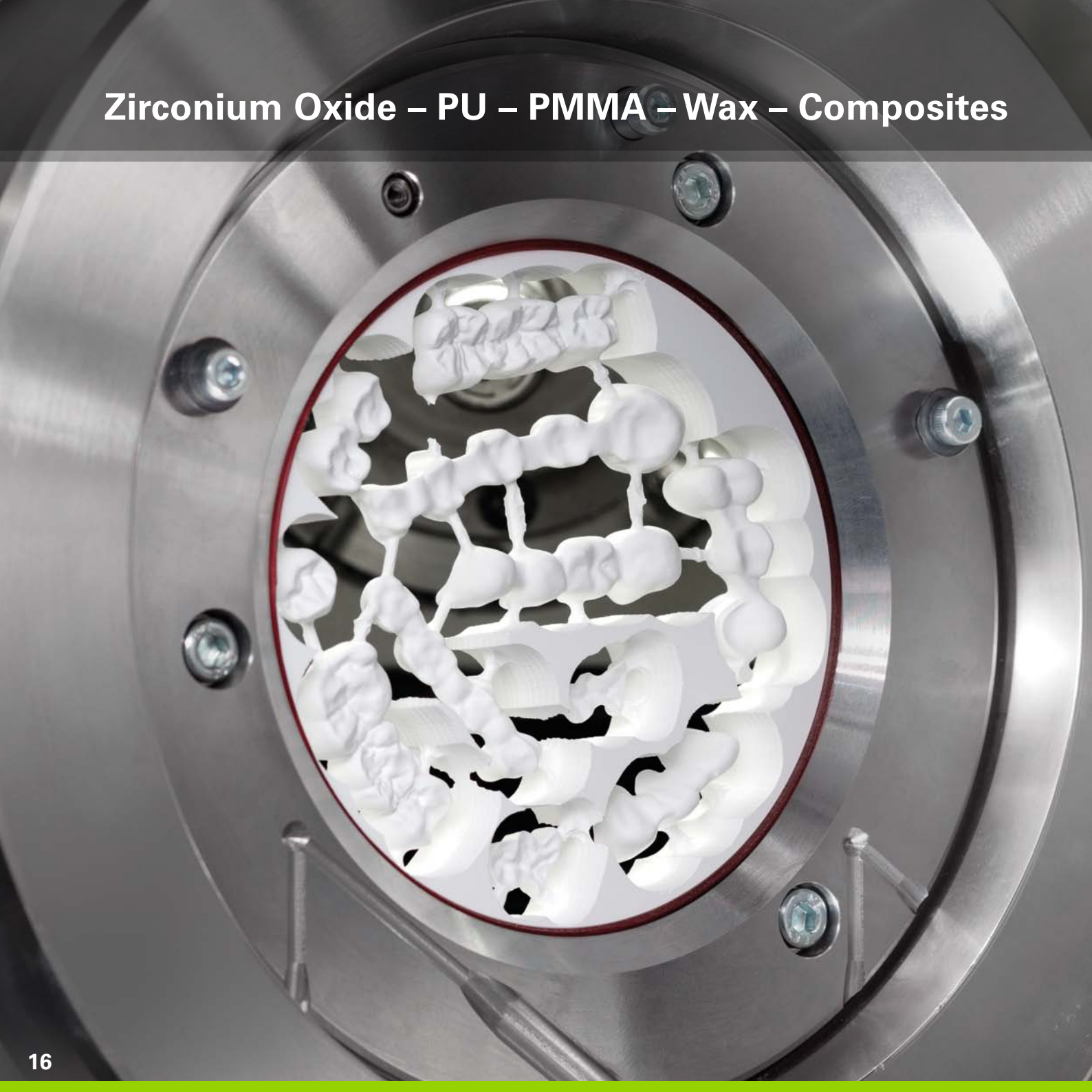
DATRON D5 Linear Scales

To machine implant-supported work
in grade 5 titanium



Equipped with linear scales, the D5 Linear Scales offers maximum process reliability and meets the highest demands concerning precision, e.g. for large-span work. With an accuracy of $\pm 5 \mu\text{m}$, this machine is ideal for milling centres with highly discerning customers.

Zirconium Oxide – PU – PMMA – Wax – Composites



DATRON D5 Entry – For Soft Materials



Soft materials such as zirconium oxide, PMMA or PU can be machined with all dental milling machines.

If you also want to manufacture complex geometries accurately, the DATRON D5 is the one and only solution! Undercuts and complex shapes, such as a full jaw model, require 5-axis simultaneous milling combined with high degrees of freedom in the 4th and 5th axis.

The D5 Entry is an affordable solution for those who specifically machine soft materials without the need for further capabilities. You pay only for the machine you need. Do you also intend to machine metals in the future?

No problem! The D5 Entry can be easily expanded and evolves with your needs and your success. This way, you have a future-proof system right from the start.

Cobalt-Chrome – Titanium



DATRON D5 Metal – For Hard Metals

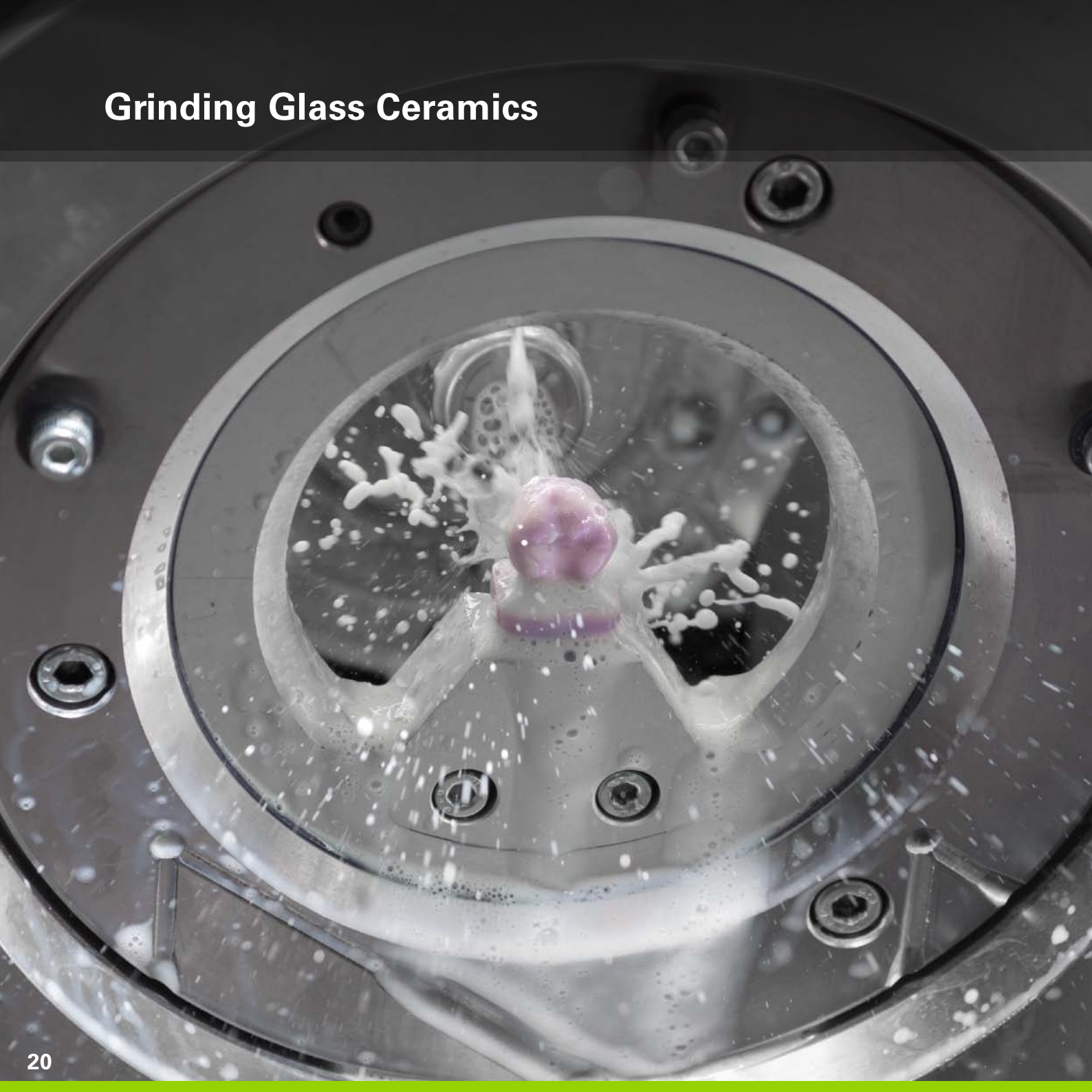


To machine metals cost-effectively and accurately, a rigid, low-vibration machine design is essential, as well as a high-precision tool holder, as the HSK clamping system used by DATRON.

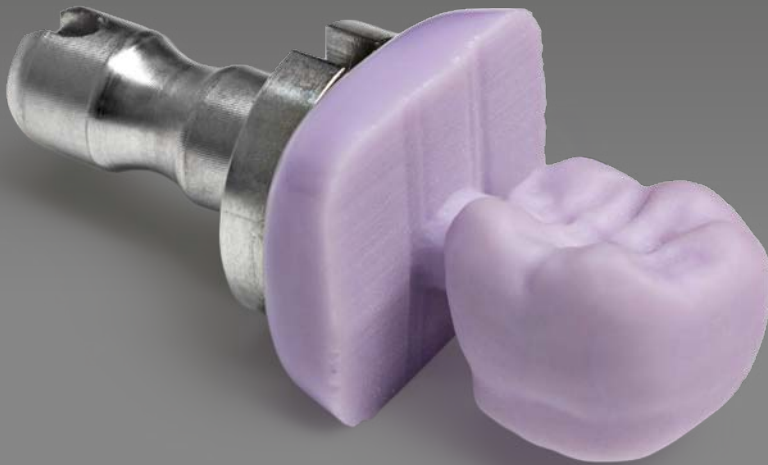
Equipped with a minimum quantity cooling lubrication system and a 13-station tool changer, your D5 Metal will enable you to machine the largest possible range of indications made of cobalt-chrome and titanium.

Integrated automation (up to 8x) enables unmanned overnight or weekend operation², providing you and your customers with a significant cost advantage.

Grinding Glass Ceramics



DATRON D5 Universal – The All-Rounder With the Perfect Finish



The D5 Universal offers best quality machining of all current materials due to its comprehensive range of functionalities.

Equipped with a wet-cutting option, the D5 Universal can also machine glass ceramics, to many the material of the future.

The D5 Universal is the only machine capable of handling the widest possible range of materials and indications.

High Accuracy Guaranteed



DATRON D5 Linear Scales – More than Accurate



The D5 Linear Scales is equipped with high-precision linear scales and was especially designed for applications with highest demands on accuracy.

Due to its increased thermal stability it provides consistent and highest quality machining, even in case of temperature fluctuations.

Repeatability is $< 2 \mu\text{m}$ and absolute accuracy $\pm 5 \mu\text{m}$.

Full Control with Just One "Touch"



The DATRON D5 was the first industrial machine worldwide to be controlled via an Apple iPad. This was, simple and intuitive operation is possible and to our experience can be learned in just two days without any prior knowledge. No matter whether you wish to load or activate new milling jobs, manage material blanks or define different types of tools, all is managed using simple touch functions.


The iPad is removable, and allows you to monitor all major machine functions and manage jobs also remotely. Using the "Live View" function, the operation inside the machine is transmitted to the iPad. No need to look in the machine to see what is being milled, but rather do so i.e. from your office.

The D5 control software includes, among other features, the following functionalities:

- Sister tool management
- End mill, blank and job management
- Machining path supervision
- Machine status display
- SMS status notification (optional)

and much more.



A close-up photograph of a large, industrial-grade metal component, likely a rotary swivel axis, mounted on a machine. The component is circular with a central opening and is surrounded by various mechanical parts, including yellow plastic clamps and metal brackets. The lighting is dramatic, highlighting the metallic textures and the precision engineering of the part.

Technology – Aesthetics Meets Power!

Massive Double-Side Mounted Rotary Swivel Axis

In order to be able to machine complex shapes accurately in dental technology, 5-axis simultaneous machining capabilities are a prerequisite. The DATRON D5 provides extremely high rigidity and consequently very high precision, achieved by the rotation centre point of the axis situated at the centre of the material blank.

The DATRON D5 was developed specifically for the field of dental technology. The entire machine geometry, its rigidity, and all traverse paths are designed precisely to machine dental material blanks. When machining, the blank is at the centre of the machine, ensuring an optimal power flow. Powerful servo motors and torque motors ensure high machining dynamics and speed.

High-Precision Machining Spindle

With speeds up to 50,000 rpm and a concentricity better than 2 μm , the machining process results in a very high-quality surface finish. Due to the high cutting speed, only low cutting forces are required, allowing accurate machining of very thin-walled indications and thin, delicate crown edges

Precision Ball Screws and Guides

Highest quality components from renowned manufacturers offer high accuracy and are the prerequisite for high machine availability and low maintenance costs.

Rigid and Low-Vibration Construction

A cast steel machine bed, cast aluminium structural parts, brushless servo and torque motors, optimised leverage ratios and traverse paths provide a rigid, vibration-free construction and high dynamics. This allows for high machining forces and accelerations necessary for the cost-effective machining of metals.



Productive Right From the Start – Using Intelligent Accessories



1 Integrated Tool Changer

The integrated automatic tool changer (6 and 13 stations depending on the configuration) with tool length measurement, tool breakage monitoring and sister tool management ensures high process reliability.

2 Automation

Integrated automation (optional) ensures high production capacity and enables unmanned overnight and weekend operation². You can start with the 2-fold version and expand it at any time to an 8-fold automation.

3 Minimum Quantity Cooling Lubrication System (MMKS)

The MMKS system used for metal machining ensures optimum milling result, long tool durability and minimum consumption of only 10 ml/hour approximately. The filling capacity is monitored on the Apple iPad, refilling is quick and easy. In contrast to flood cooling, neither a water circuit nor special filters are necessary; the cooling lubricant is removed by the chips, and collected in a chip drawer.

HSK Tool Clamping System

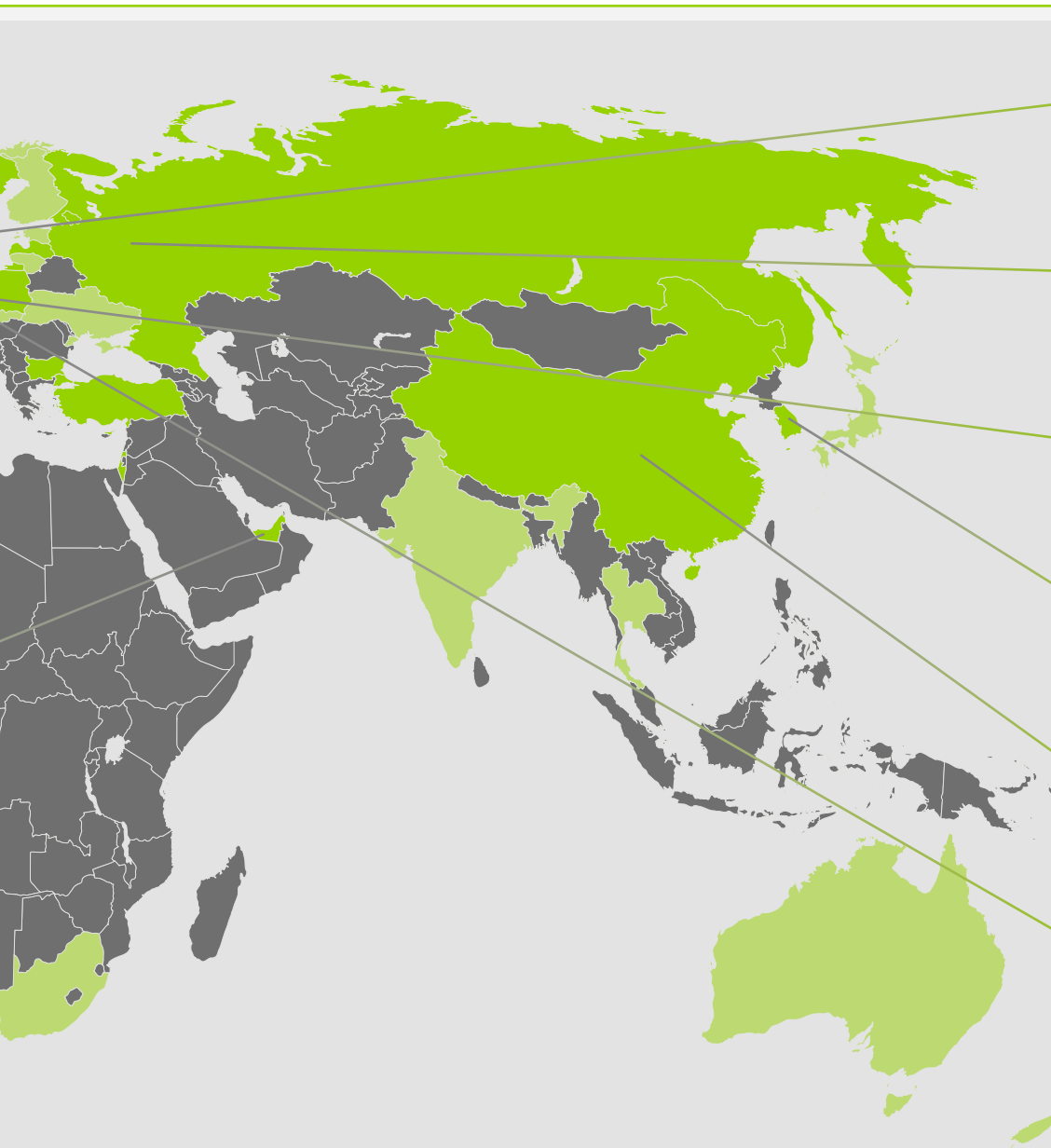
The HSK clamping system offers highest concentricity of the end mill tip and maintains full clamping force even at high speeds. This leads to high accuracy and high durability. By means of the HSK clamping system, 6mm-shank tools can also be used, resulting in much higher durability with better milling results at the same time.



Worldwide references – The World Mills with DATRON

Dental laboratories and milling centres in 20 countries
rely to date on the high quality and precision
of DATRON's dental CAD/CAM systems:





● **EXPONENT**

● 
OPTOC

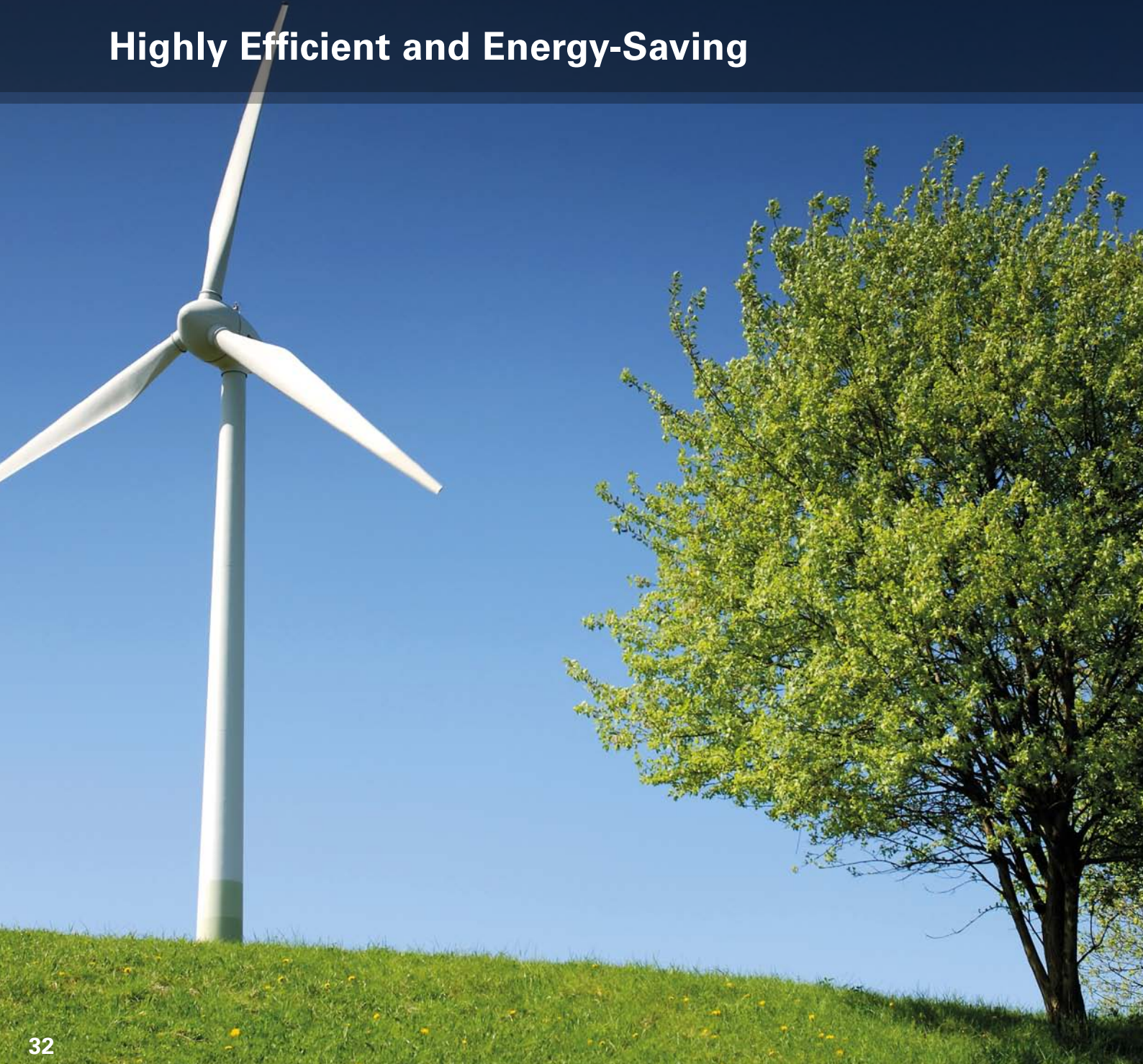
●  **GLIDWELL EUROPE**

● 
WE DENTAL

● 
WWW.SHADIE.CN

● 
microdent

Highly Efficient and Energy-Saving



Low energy consumption and a careful use of resources are taking an increasingly important role, also in view of rising energy prices.

Through their innovative design and their very economical drive technology, DATRON's milling machines use significantly less energy than comparable products.

If DATRON machines are not used over a certain period of time, they automatically switch off their power, thus reducing their already low power consumption still further.

The minimum quantity cooling lubrication technology used in metal machining is an extremely reliable and cost-effective solution. Without any hazardous waste, it is also extremely environmentally friendly compared to flood cooling.



DATRON Dental End Mills – Meeting the Highest Demands



Improve Quality and Reduce Costs – DATRON Tool Technology

DATRON has been developing milling tools of the highest quality “Made in Germany” for over 20 years. Because high-quality products can only be manufactured with high-quality tools.

Through the use of premium carbides in ultra-fine grain quality and state-of-the-art coatings, our customers can be sure of getting extraordinary high durability. And this while keeping a very good price-performance ratio. For this reason, more than 10,000 tool customers worldwide rely on DATRON quality!

Even if you do not yet own a DATRON milling machine, you can still benefit from our tool technology. We also offer milling tools for all major CAD/CAM systems such as 3M Espe, DMG, imes-icore, Roland, Rödgers, Wissner, Wieland and many more.

Or do you need a special tool?
We custom-make special and individual tools starting from batch size 1 in a very short time.

Made in Germany 



DATRON Service – The Team for Your Success



Just In Case Something Does Not Work According to Plan: Fast Help From DATRON Service

The most advanced diagnostic tools, a competent and experienced staff, fast response times worldwide and a comprehensive spare parts inventory guarantee the fastest possible troubleshooting in the event of a failure.

Individually tailored maintenance contracts significantly minimise downtimes and guarantee high machine availability. This way, you can achieve your production targets timely and reliably!

With the purchase of a DATRON D5 you purchase more than just a machine: you get a team of experts to support you comprehensively!

Custom Application Advice



Just for you: Our Dental Experts and Our Know-How

In close cooperation with universities and technology partners in the field of dental manufacturing technology, our team of dental technicians, software, machine and application experts continually enhances the digital process chain. We invest in this know-how so as to make our customers even more successful.

Are you already an expert in dealing with the CAD/CAM process of the D5, and do you wish to optimise your entire current manufacturing process? Or do you intend to integrate new techniques in order to be already today fit for the future?

Our dental experts will be happy to visit you and advise you on how to optimise your individual processes or how to expand your product portfolio.

We share our knowledge required to use our dental systems efficiently and economically. Additionally, we also offer product training for scanners, CAD and CAM software.



DATRON D5 – Facts and Figures

The D5 was developed specifically for the needs of dental laboratories. As small as possible - as heavy as necessary: With a width of only 79 cm, the D5 fits through any standard doorway. Its weight of only 880 kg usually requires no building alterations concerning the floor load capacity. For this reason, the D5 can be installed in virtually every dental laboratory*.

Technical Specifications

The machine includes, among other features:

- Apple iPad for complete machine control
- Rotary swivel axis for 5-axis simultaneous machining
- Cooling device for spindle and drive
- 6 or 13 station tool changer with tool length sensor and tool breakage detection
- Chip container and connection nozzle for suction
- Integrated automation with 8x blank changer (optional)
- Minimum Quantity Cooling Lubrication System for metal machining (optional)
- Flood cooling for glass ceramics grinding (optional)

Dimensions (W x H x D)	79 cm x 191 cm x 119 cm
Weight	Approx. 900 kg
Precision spindle	1.8 kW, 50,000 rpm, HSK-E 25 tool insert
Tool changer	Up to 13 tools with tool length sensor and tool breakage recognition
Automation	Up to 8 blanks
Angle ranges Rotary swivel axis	A: ± 25°; B: ± 45° (both sides)
Workpieces	Standard dental blanks with shoulder; ø 98,5 mm
Pneumatic connection	7 bar
Supply voltage	3 x 400 VAC/16 A
Power rating	4,000 VA (max. fuses 3 x 16A)

*Please refer to the instructions in the Installation Guide

www.dental.datron.com

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¹with "wet processing" option

²Concerning this topic, please take into account our "Safety requirements when operating the machine". They can be requested from DATRON or viewed online at www.safety.datron.de.

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