

Copy milling with the **5** motions system

Unrestricted flexibility in all dimensions



Economic efficiency paired with added value and a holistic concept!

This milling unit is impressive with the simplicity of its user guidance and how quickly it can be mastered. With high precision it ensures the implementation of the finest details as well as dimensional flexibility during the milling process. The 5 axis are the success factor in pioneering independence and thus the decisive aspect for an excellent fit. Zirconium dioxide ceramic (zircon), as a material of the future, is processed with exceptional efficiency, so that the costs of crowns and implants are minimised. By virtue of its aesthetic advantages, such as high translucence, natural colour rendering and excellent flexural strength, it is the basis for bio-compatible dentures. Furthermore, its biaxial pressing ensures constant quality.

Manually milled bridge structure in anatomical design – reduces the amount of chipping.



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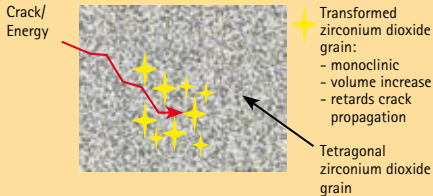
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5-motions-zircon

The raw material

Among other requirements, the purity of the raw material is of supreme importance for dental medical applications. The preparation of pure zirconium dioxide is a very complicated process which is decisive for the quality of potential ceramic products made of this raw material. Zirconium dioxide is stabilised with yttrium oxide. Utilisation of this special material has long been proven. Its particular suitability as framework ceramic in high performance dental applications has been verified by various studies. Monoclinic crystal symmetry of zirconium dioxide is obtained below 1000° C. By using yttrium oxide, the tetragonal phase is also, for the most part, present at room temperature (Tetragonal Zirconia Polycrystals). An applied force or a crack can, however, damage the microstructure of the ceramic locally, whereupon a transition to a monoclinic lattice would take place as a result of the compressive stress. The monoclinic regions occupy a greater volume than the tetragonal ones. Crack propagation is retarded or stopped by this clogging effect. This welcome self-healing mechanism contributes additionally to the permanent strength of this ceramic material.

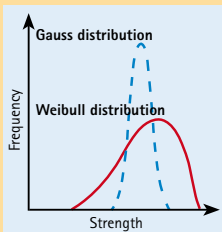


Certification

For the marketing of high quality medical products and the ability to mutually distinguish them from industrial products made of zirconium dioxide, certification and accreditation are mandatory; this also includes compliance with complete traceability of the blanks back to the raw material supplier. Some zirconium dioxide grades are unsuitable for medical applications, for example because the standardised requirements with regard to purity or radioactivity cannot be adhered to.

Material properties

A standardised requirement according to DIN EN 6872 for dental ceramic is its mechanical strength, e.g. the flexural strength determined by various methods. Fracture stress values are thereby determined according to stipulated procedures, so that the results can be compared. The statistical evaluation of the determined fracture stress values is usually carried out in terms of the so called Weibull statistics. Values for the strength and security of the ceramic expressed in terms of the Weibull modulus can be calculated with this formalism. The greater the initial strength is, and the greater the Weibull value is, the better. The standard also stipulates limit values for the radioactivity, haemic solubility and other parameters.



Specific material parameters of 5-motions-zircon

Strength	1400 MPa
Vickers hardness	1250
Density	6,05 g/cm ³
Weibull modulus	>12

5-motions-mill

The milling unit – synoptical – compact – user friendly!



5-motions-system

The system – complex – self-sufficient – matched!

5-motions-mill

Rail guided copy milling unit for exact transfer of the modelling.
REF 360 1000 0

5-motions-furnance

Digitally controlled high performance furnace for exact fit sintering of the zircon. Can be heated up to 1600° C.
REF 360 1000 5

5-motions-cleaner

Special filters prevent dust production. The suction performance promotes healthy working environment.
REF 360 1001 0

5-motions-starter kit

All required products for a quick start milling.
REF 360 1001 2

5-motions-glue

Quick curing liquid glue facilitates positioning of the modelling and zircon blank.
REF 360 1002 6

5-motions-active

The activating spray accelerates the curing process of the 5-motions-glue and ensures secure bonding of different materials.
REF 360 1002 7

5-motions-lightcuring disc

Quick positioning of the modelling and high stability during milling ensures precision.
REF 360 1002 9

5-motions-zircon positioning

The exact positioning of the zircon reduces flaws and permits quick working.
REF 360 1003 0

5-motions-model positioning

Parallel to the 5-motions-zircon positioning, the modelling, too, is securely fixed with correct positioning – corresponding to the zircon blank height – in the 5-motions-lightcuring disc.
REF 360 1003 2

5-motions-template

The various zircon blank sizes are depicted to scale for correct positioning of the modelling on the 5-motions-lightcuring disc.
REF 360 1003 1

5-motions-tool set

Milling tools and feelers in the set – the right tool for all milling situations – also available separately.
REF 360 1004 0

5-motions-zircon

Biaxially pressed highest quality zircon. Available in 3 sizes and 2 heights for making all constructions – from a single crown to large implants.

5-motions-colors

The colours A1, A3, B1, B3 and C3 permit individual colour design of the framework – the perfect basis for aesthetic dentures.

5-motions-drying lamp

Drying lamp for coloured zircon framework. Quick drying permits early work continuation.
REF 360 1000 4