

For more than 25 years, Breuckmann GmbH in Meersburg, Germany, has been an innovative pioneer and manufacturer of specialised 3D scanning systems. All our 3D digitisation and measuring systems operate on the basis of a patented miniaturised projection technique. Using this contact-free optical scanning technology, even very complex surface structures are captured at a high-level of speed and accuracy. Our 3D scanners ensure effective and affordable measuring and inspection performance; together with the high-performance measuring and evaluation software OPTOCAT, the system package includes all necessary functions for a complete project execution.

Our high-end scanning systems are equally characterised by:

- High precision
- Short measuring and evaluation times
- High standard of reliability
- Easy handling
- Optimum flexibility

Breuckmann's business field **INDUSTRY & TECHNOLOGY** covers the application of scanning systems in a vast variety of industries, such as the automotive manufacturing and supply industries, aerospace, die cast engineering, plastics processing, mould and tool making, product design, packaging manufacturing, and many more. Regardless of how diverse the industry branches and their respective projects may be, they all have one thing in common: Precise 3D data generated with the help of measuring systems exactly customised to the respective project task!



In the business field of **BODYMETRY & LIFE SCIENCE** Breuckmann can proudly look back on many years of experience in the in-vivo digitisation of the human body. Especially in the dental technology and the cosmetics industry, Breuckmann systems are frequently called for and are accordingly well-known: The range of 3D-precision digitisation applications reaches from dentition models to selected areas of the face and skin all the way up to complete body scans. Furthermore, Breuckmann is a competent and experienced partner for the development of OEM systems.

In addition, there are manifold applications in the diverse field of **ARTS & CULTURE**: Thanks to state-of-the-art 3D scanning technology, the World's magnificent cultural heritage can now be digitally preserved – be it by documentation of valuable cultural findings, the 3D data acquisition of paintings or the digitisation of archaeological, anthropological and paleontological findings for scientific studies. The contact free scanning process preserves fragile and sensitive objects and provides true to detail 3D data replicas which allow to conduct even more meticulous studies than it would be possible using the respective originals.



PRECISION IN 3D

HIGH PRECISION 3D METROLOGY



INDUSTRY & TECHNOLOGY



BODYMETRY & LIFE SCIENCE



ARTS & CULTURE

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Products

Breuckmann's diverse range of products for high-precision scanning and measuring

High precision data, three-dimensional scanning systems perfectly customised to any individual project, reliable operation under challenging conditions and easy handling – these are the pre-eminent qualities of our product range. Using our extensive know-how and expertise, you will certainly be able to find the best suitable system for your application.



smartSCAN^{3D}

The ideal introduction systems into 3D metrology: Thanks to its modular configuration using black-and-white or colour cameras in various resolutions, the **smartSCAN^{3D}** series is perfectly adjustable to precisely meet the specific requirements of your projects. The compact system design and low weight makes this scanner ideally suited for mobile applications on-site. Flexibility is another distinctive key feature: Thanks to various different upgrade options, the scanner grows in line with your digitisation tasks!

stereoSCAN^{3D}

For the handling of very demanding projects, Breuckmann's **stereoSCAN^{3D}** provides supremely accurate 3D data results combined with a highly efficient data evaluation. Three different triangulation angles allow for the precise digitisation of object areas which are very challenging to access. The combination with a robot or a turntable enables fully automated 3D scanning of large-scale objects. Thanks to its robust double-panel structure using carbon fibre reinforced plastic, the system delivers prime accurate scan data even under the rough conditions of an industrial production environment.



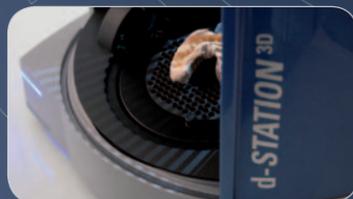
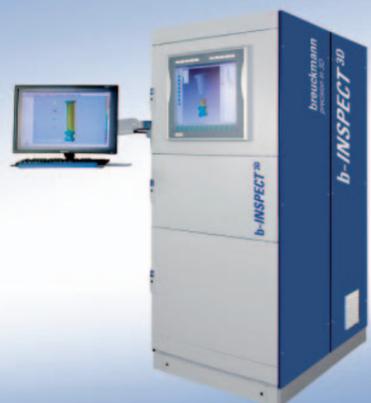
naviSCAN^{3D}

The high-performance 3D scanning system **naviSCAN^{3D}** allows for the seamless contact-free scanning and tactile measuring within the same coordinate system. Even large measuring volumes are digitised at the highest level of accuracy without the time consuming attachment and calibration of reference markers. Each data capture scans an area of up to two square metres; the alignment of the individual captures into a coherent 3D model is accomplished automatically, providing the user with data sets and evaluation results within a matter of minutes.

b-INSPECT^{3D}

The completely self-contained **b-INSPECT^{3D}** captures even very challenging surfaces without the need of preparatory treatment with matting or anti-reflection spray. It therefore is ideally suited for the quality inspection of turbine blades; even smallest radii of less than 1.0 mm are determined minutely to the point. The system operates up to 10 times faster than a tactile coordinate measuring system, while at the same time generating significantly higher data density and data quality. To ensure the precise data acquisition in the production environment, the measuring system is dustproof and insulated against vibrations.

In summary, the **b-INSPECT^{3D}** provides you with the ideal quality assurance support for all your production and inspection processes!

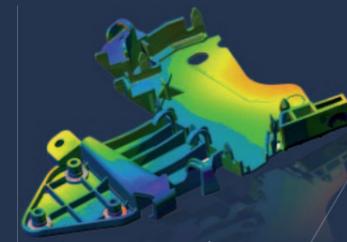


d-STATION^{3D}

As a result of the integrated concept of object positioning and 3D scanning hardware, the **d-STATION^{3D}** is ideally suited not only for applications in the field of dental technology but also for the automated digitisation of any kind of small sized articles. In combination with a multi-position rotation device, the scanning process runs completely automated. The compact, fully closed system housing is resistant against any environmental or thermal disturbances, thus ensuring easy and correct handling of the measuring objects resulting in top quality 3D measurement data.

Applications

Interesting examples of three-dimensional scanning projects



Inspection

The subject matter of quality control covers a very broad spectrum: Be it the comparison against CAD data, the first sample inspection of automotive parts, the quality inspection of turbine blades or plastics parts, the deformation analysis of transmission parts, or the tolerance check of tools – the efficient scanning and evaluation procedure significantly contributes to the overall process optimisation and product improvement.

Reverse Engineering

From the actual object to its exact three-dimensional model is only a short, yet highly precise measuring process: Regardless of easily deformable prototypes, hand crafted samples or already existing product models without respective CAD data – even the data capture of complex free form areas is accomplished within a matter of seconds, enabling you to rectify tooling data, to transfer product developments into mass production in a time and cost saving manner, or to quickly and easily transfer older objects of which 3D data sets are not yet available into the CAD environment.



Individual Digitisation

Digitisation in all dimensions: The contact free three-dimensional scanning process is equally suitable for breakable, deformable or very hot objects. Complex and even shiny surfaces measuring from a few millimetres to several metres are captured down to the minutest detail, even given very large project volumes excellent accuracy levels are achieved.

The systems work fast and reliably at all times – not only in the measurement laboratory but particularly also in harsh production environments.



Medical Technology

In the field of medical technology, Breuckmann looks back on long-standing experience in the development of specialised solutions for contact-free generation of precise three-dimensional data. Particularly in demanding application areas such as dental technology and the cosmetics industry, our systems are used worldwide for the creation of dentures or dermatological long-term studies. Given the profound know-how for customised OEM solutions in medical technology, Breuckmann is your competent development partner, assisting you to achieve successful product placement in your target markets.



Archaeological Documentation & Archiving

Paintings, statues and reliefs, coins or even metre-high building structures: Breuckmann's 3D scanner units have been successfully used for many years for the digital documentation and archiving of the cultural heritage.

Besides assignments in renowned museums all over the world, archaeological, anthropological and paleontological findings are also scanned in minute detail directly on-site.

Even under challenging and adverse climatic conditions, such as in Mongolia, the jungles of Mexico and Cambodia or in Antarctica, Breuckmann scanners consistently meet and exceed their expectations, delivering precise and reliable performance at all times!

