



ATOS Compact Scan

Mobile 3D scanner for a wide range of applications



Seeing beyond



Content

Optical 3D Measuring Technology

In industrial quality control

Optical 3D coordinate measuring systems are replacing traditional measuring systems and gages in many areas of industry. They capture more detailed and easier to interpret quality information about an object with significantly shorter measuring times.

Optical measuring systems provide full-field data about deviations between the actual 3D coordinates and the CAD data. As this measuring data contains all the object information, in addition to the surface deviations from the CAD, the software also automatically derives detailed information such as GD&T, trimming or hole positions.



The accuracy of optical measuring systems is not due to expensive and high-maintenance precision mechanics, but is rather based on state-of-the-art optoelectronics, precise image processing and mathematical algorithms. A few precision standards and calibration that can be performed by the customer ensure the accuracy of the system. This also means no loss of accuracy due to usage under harsh conditions. As with the tactile machines, measuring uncertainty is certified with the help of ball bars or step gages.

The ZEISS measuring systems ensure the dimensional quality of automotive, sheet-metal, cast and injection molded products as well as turbine blades and wheels. In most cases, the detailed analyses are not used for a simple "OK" / "not OK" evaluation, but form the basis for the optimization of production and machine parameters as part of a value-added measuring procedure.

ATOS Compact Scan

The compact class

With the ATOS Compact Scan, ZEISS presents a portable 3D scanner for full-field measurement and inspection. This lightweight and compact overall solution opens up complete new application areas and offers the user various possibilities for 3D digitizing and analyses parts, tools and systems. Even in cramped spaces or interiors, the compact solution of the ATOS series allows fast and precise measuring of surface geometries.

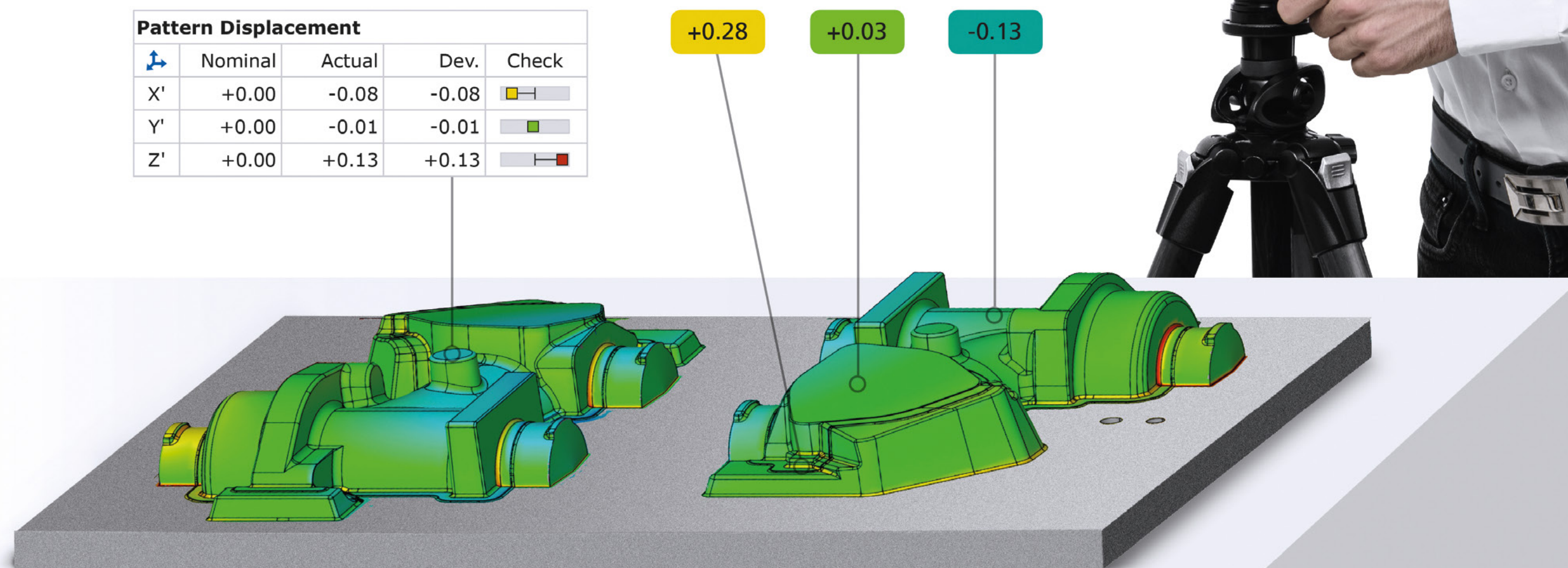
In addition to innovative hardware, the complete package includes integrated, high-performance software for all scan and inspection tasks. Furthermore, users benefit from practice-oriented hardware and software training as well as unrestricted access to the reliable and worldwide support network.

The ATOS Compact Scan comes with the proven technologies of the ATOS series. Thanks to a stereo camera setup, the system is self-monitoring and generates accurate and reliable measuring data. Furthermore, Blue Light Technology allows measurements to be made independent of ambient light conditions.

The ATOS Compact Scan offers

- The proven high-end technology of ZEISS
- A portable system of low weight
- Optical and tactile measurement in one system
- Easy handling in every environment
- High-resolution measurement for small and large components
- A solution for complex measurement and inspection tasks

Pattern Displacement				
	Nominal	Actual	Dev.	Check
X'	+0.00	-0.08	-0.08	
Y'	+0.00	-0.01	-0.01	
Z'	+0.00	+0.13	+0.13	



Variable use on site

Companies must inspect tools, systems and components even during ongoing production, so as to introduce corrections as quickly as possible. Therefore, with the ATOS Compact Scan, ZEISS provides a portable measuring system, which can be used immediately during the manufacturing process.

ATOS sensors have proven in practice to be successful due to their flexibility and precision. Instead of removing the component from the running process and transporting it to the measuring room, the compact solution of the ATOS series is used directly on the production line or on the measuring object. This way, errors which would otherwise only show up in the final product can be identified directly at the site where they occur. This also avoids a lengthy search for the source of the error.

The portable scan kit widens the flexible possibilities of the ATOS Compact Scan. The complete system including sensor head, stand, calibration body, cable and rotation table fits into one standard suitcase.

- System, stand, measuring volume and manual rotation table in one suitcase
- Complete system in travel size
- Portable, high-performance computer
- Industrial, portable and easy to transport



ATOS technology

The ATOS sensor technology has been continuously developed and refined since its introduction. Due to their proven measuring technology, the ATOS systems from ZEISS have established themselves as the preferred measuring system in virtually all industries. In addition to the innovative hardware, all ATOS systems include integrated, high-performance software for all scan and inspection tasks.

Blue Light Technology

The ZEISS projection technology works with narrow-band blue light, which means that interfering ambient light during image acquisition can be filtered out. The light sources are so powerful that short measuring times can be achieved even on uncooperative surfaces.

Live tracking

The real-time measurement is used for the selective alignment and positioning of components to the CAD. For example, components can be aligned in their nominal position in such a way that online positioning is possible within the assembly.

Adapter

The adapter provides expanded possibilities for real-time measurement such as component alignment or the measurement of regular geometries and edges.

Self-monitoring system

The ATOS Compact Scan is a self-monitoring system. The sensor recognizes changing ambient conditions during operation and is able to compensate these changes.

Photogrammetry

For high global accuracy and process reliability, regardless of the object size and complexity, the ATOS Compact Scan can be extended with photogrammetry.



Mobile 3D Scanner

For Tools – Systems – Components

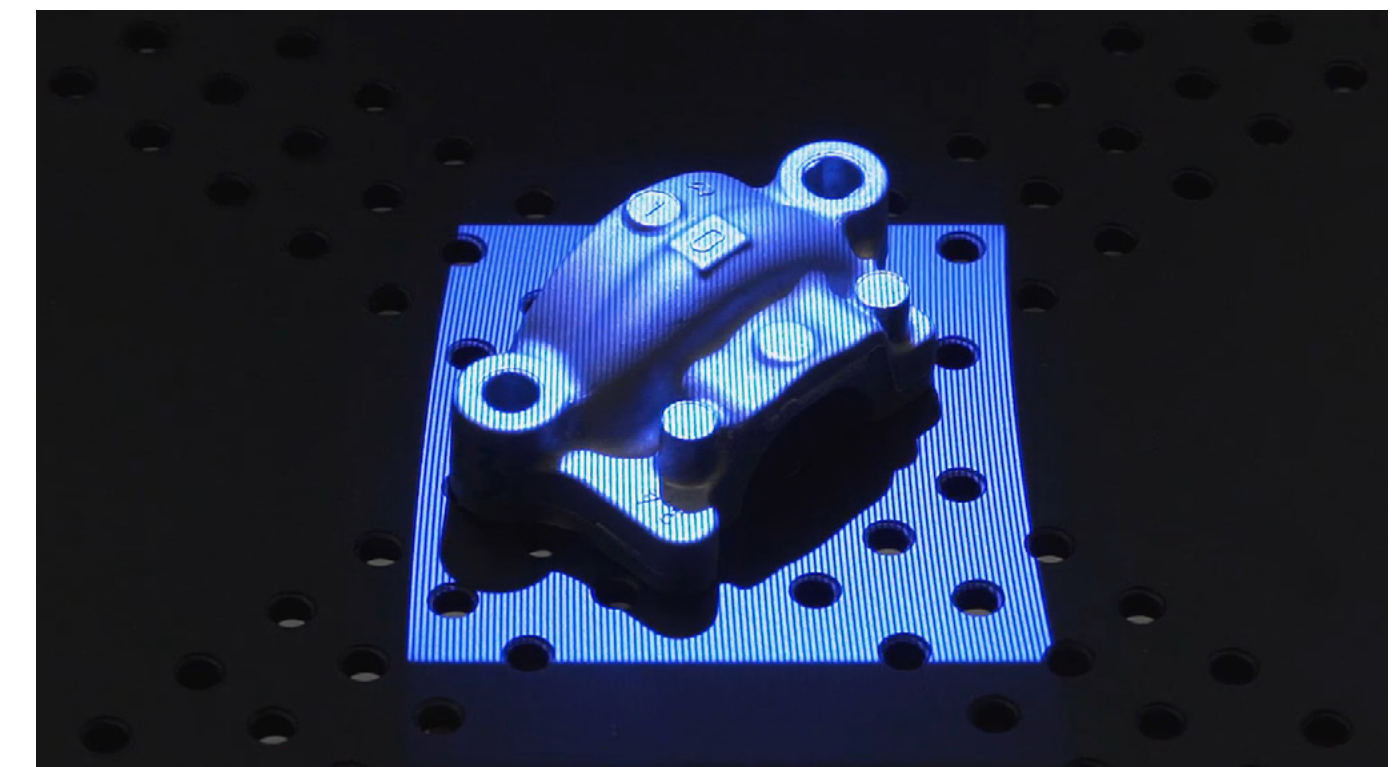
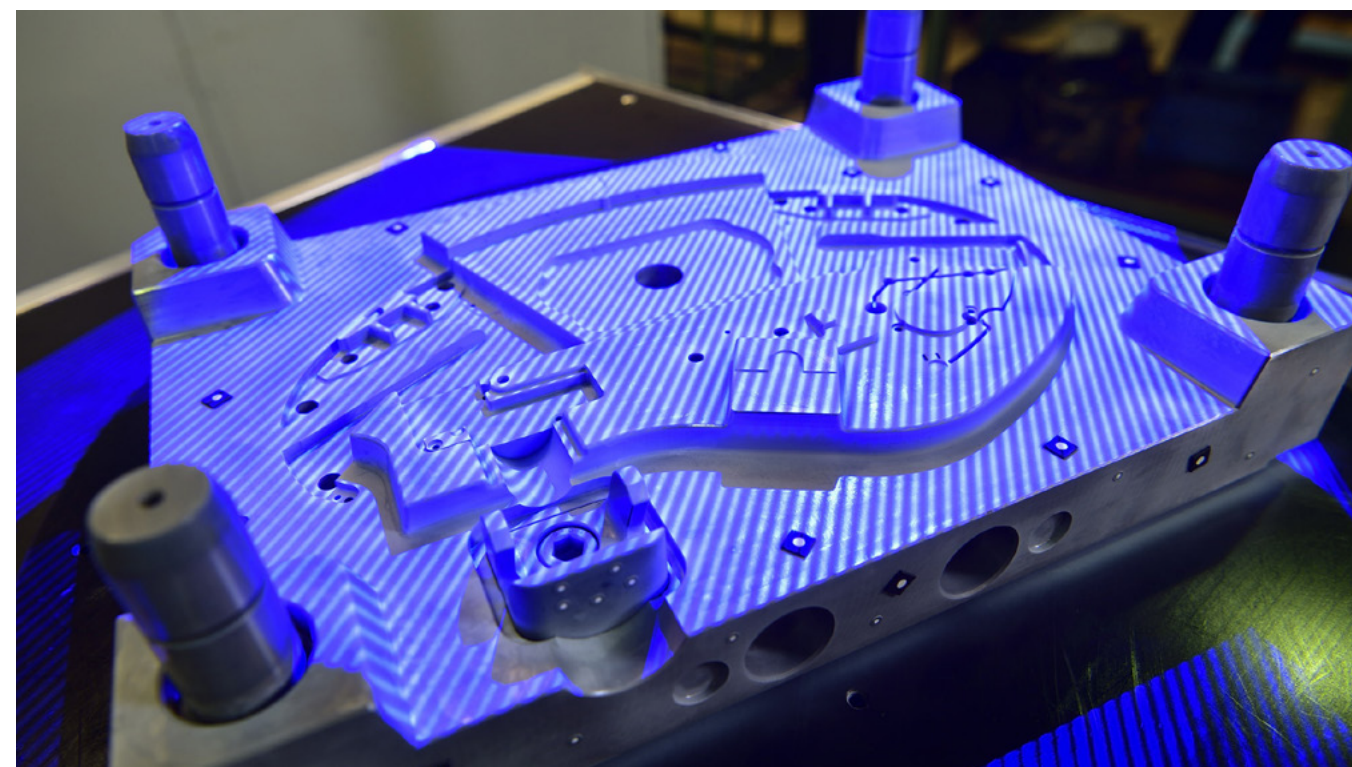
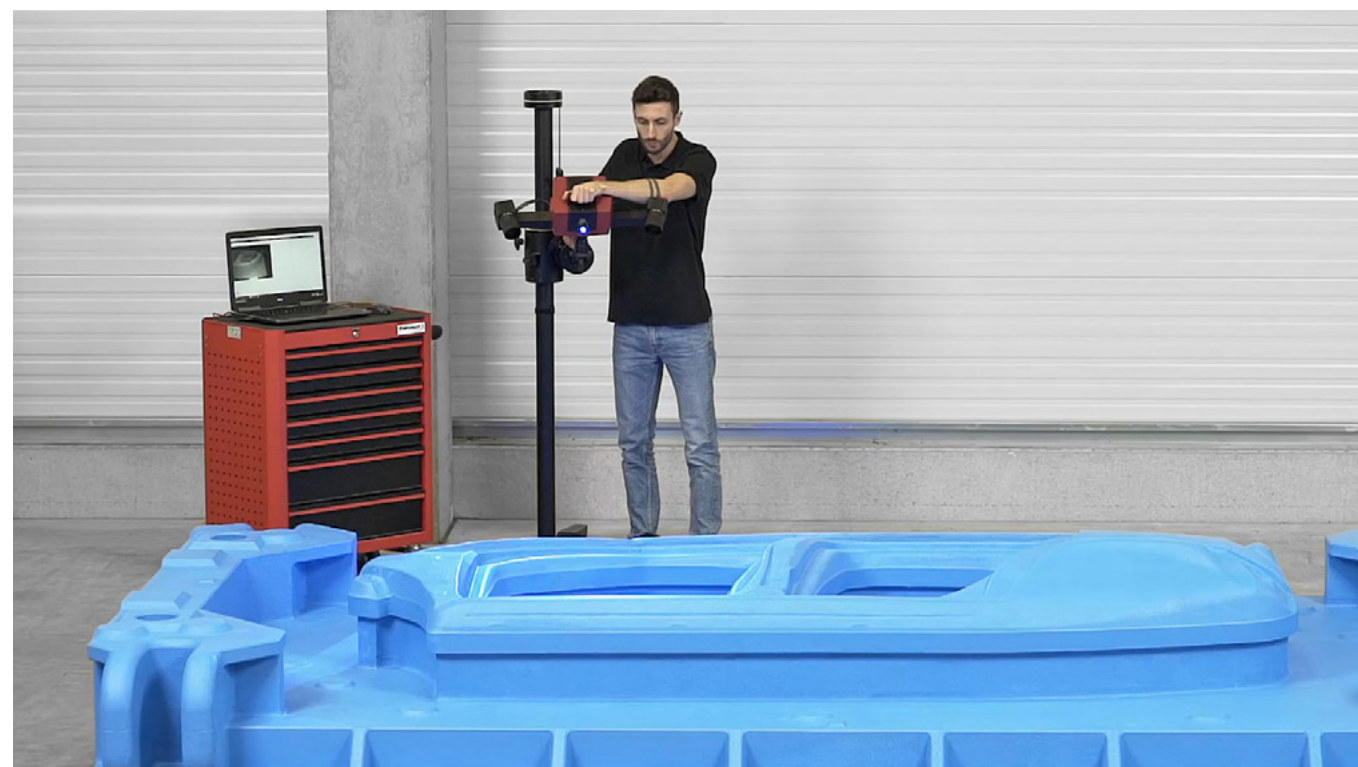
Scalable measuring areas

In contrast to other measuring methods, the technology of the ATOS Compact Scan can be optimally used for all measuring tasks and for all object sizes. Whether a high level of detail resolution, highest accuracy or fast scanning of large measuring areas: The scalable measuring area of the 3D scanner allows perfect adjustment to each measuring task. With only one sensor head, each required precision, detail resolution and velocity is possible.

For measuring areas from 40 mm² to 1,200 mm², the ATOS Compact Scan digitizes all component and object sizes with highest accuracy.

To capture also large objects of several meters in optimal workflows, the ATOS Compact Scan can be easily combined with digital photogrammetry of the optical 3D coordinate measuring system TRITOP.

- Adaptable accuracy, resolution and speed
- Complete component analysis
- Digitizing small to large parts with one sensor head
- Digitizing very large measuring objects of several meters



Scan and probe

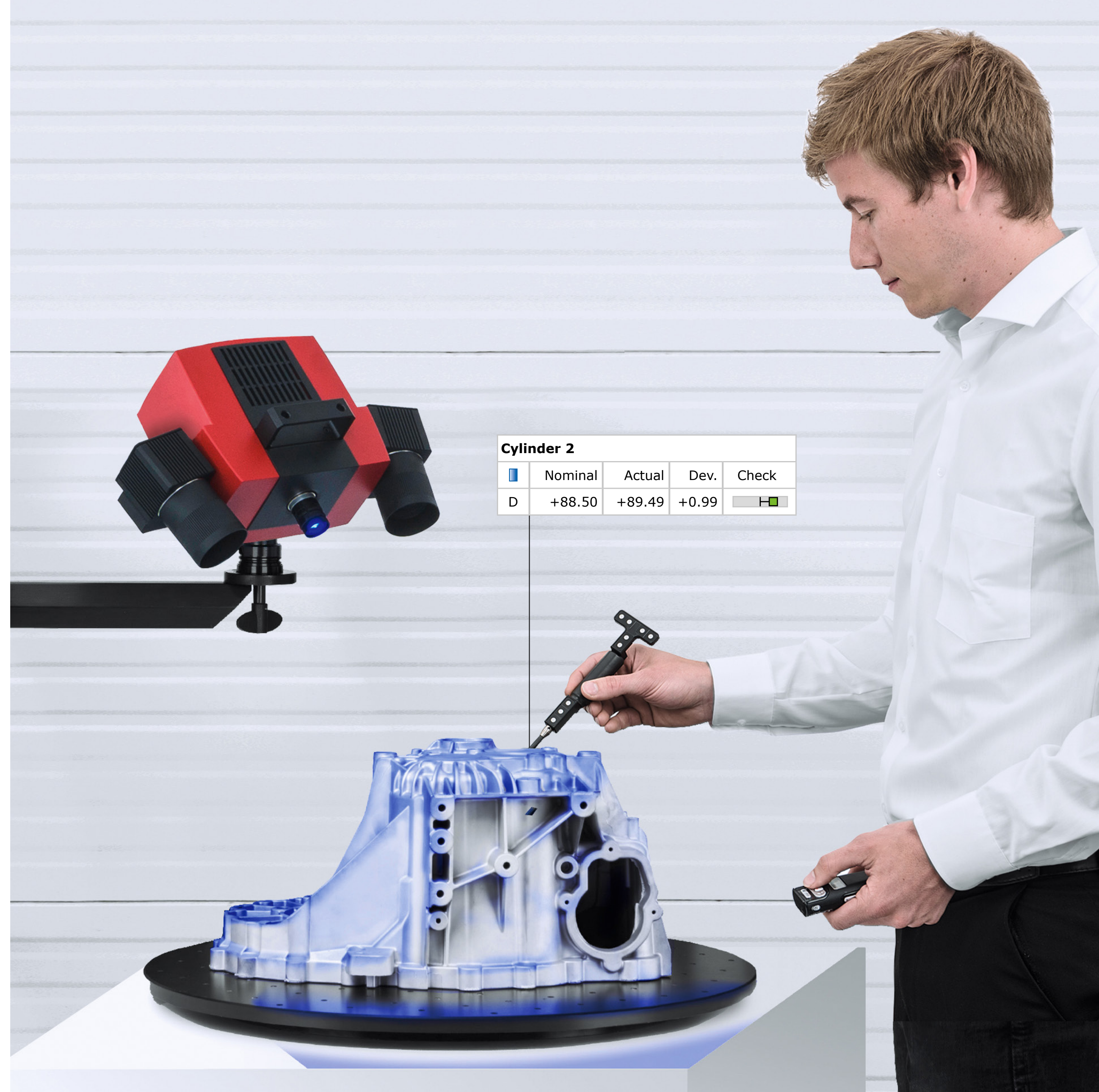
When digitizing deep pockets, bore holes or areas that cannot be accessed optically, all conventional devices reach their limits. The ATOS Compact Scan combines high-resolution scanning with the hand-operated, wireless measurement via optically tracked touch probe. Using the ATOS Compact Scan, practically all components can be digitized and analyzed within the shortest of times.

Touch Probe

The Touch Probe combines full-field ATOS measurements with tactile 3D measurements of individual measuring points. That enables the selective measurement of areas that are difficult to access optically, the measurement of regular geometries and their direct comparison with CAD data.

Industrial applications require process-reliable measuring data. The stereo camera systems of ZEISS are able to provide high-quality and precise measuring data by constantly monitoring the sensor and the environment as well as by direct feedback from the operator.

- Quick change between scanning and probing
- Measurement of optically difficult-to-access areas, bore holes, deep pockets ...
- Fast measurement of single points
- Online alignments
- Adjustment processes for equipment



Technical data

Due to its compact design, its low weight and its immunity against ambient light, the ATOS Compact Scan offers various measurement applications. Because of the scalable measuring areas, it is very easy to handle the ATOS Compact Scan when measuring small components up to large systems and tools.



	8M	12M
Measuring Points per Scan	8 million	12 million
Measuring Area [mm ²]	45–1,200	
Sensor Dimensions [mm]	360×150×240	
Cable Length [m]	up to 10	
Part Positioning	manual or automatic rotation table	
Computer	laptop or desktop system	
Software	data capture, processing and complete inspection	
Temperature Range	+5 °C to +40 °C, non-condensing	
Power Supply	90 – 230 V AC	

Camera frame 300

MV600: 600×500 mm² | MV350: 350×250 mm² | MV170: 170×130 mm²



Camera frame 500

MV1200: 1200×1000 mm² | MV700: 700×500 mm²



Small objects

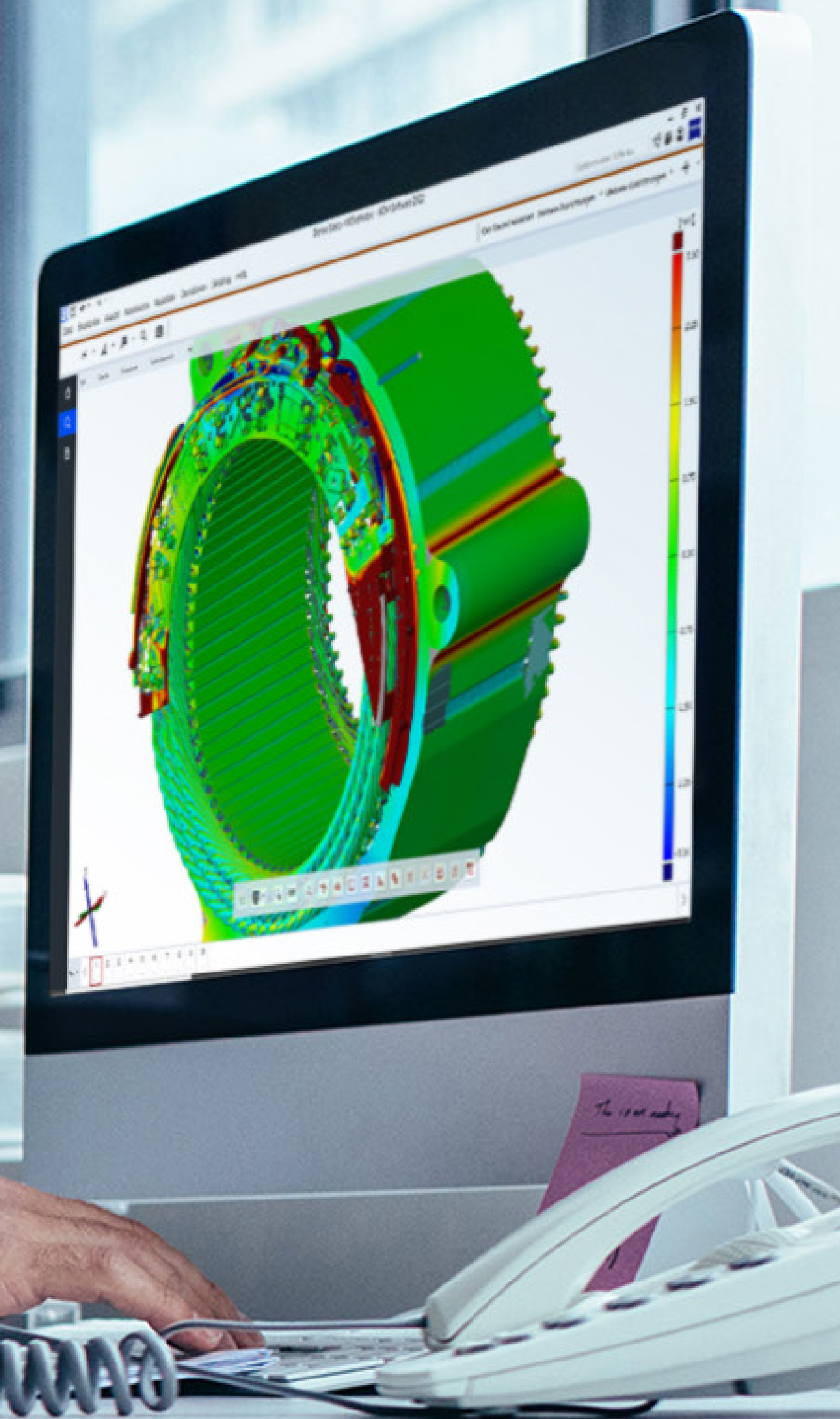
MV170: 170×130 mm²

MV80: 80×60 mm² | MV45: 45×35 mm²

All-in-One Software

ZEISS INSPECT

Scanning, inspecting and reporting with a single source: ATOS Compact Scan is controlled via ZEISS INSPECT Optical 3D. The software allows for importing CAD data, creating polygon meshes from point clouds and performing 3D inspections and evaluations. The software is a part of the ZEISS Quality Suite.



All-in-One Software

ZEISS INSPECT

Parametric concept

The software saves each inspection step, thereby making measurement plans traceable, repeatable, and editable. This allows for carrying out trend analyses, statistical process control (SPC) and deformation analyses in one single software. In addition, it also facilitates performing serial inspections in a project and determining statistical analysis values.

Numerous CAD formats

Native CAD formats, such as CATIA, NX, SOLIDWORKS and Pro/E, can be imported into the software at any time.

Teaching by doing

Thanks to continuous caching, it is possible to apply the desired inspection steps to subsequent parts without any programming effort.

Digital assembly

The digital assembly allows for aligning parts to one another and analyzing their accuracy of fit, regardless of where the parts were manufactured.

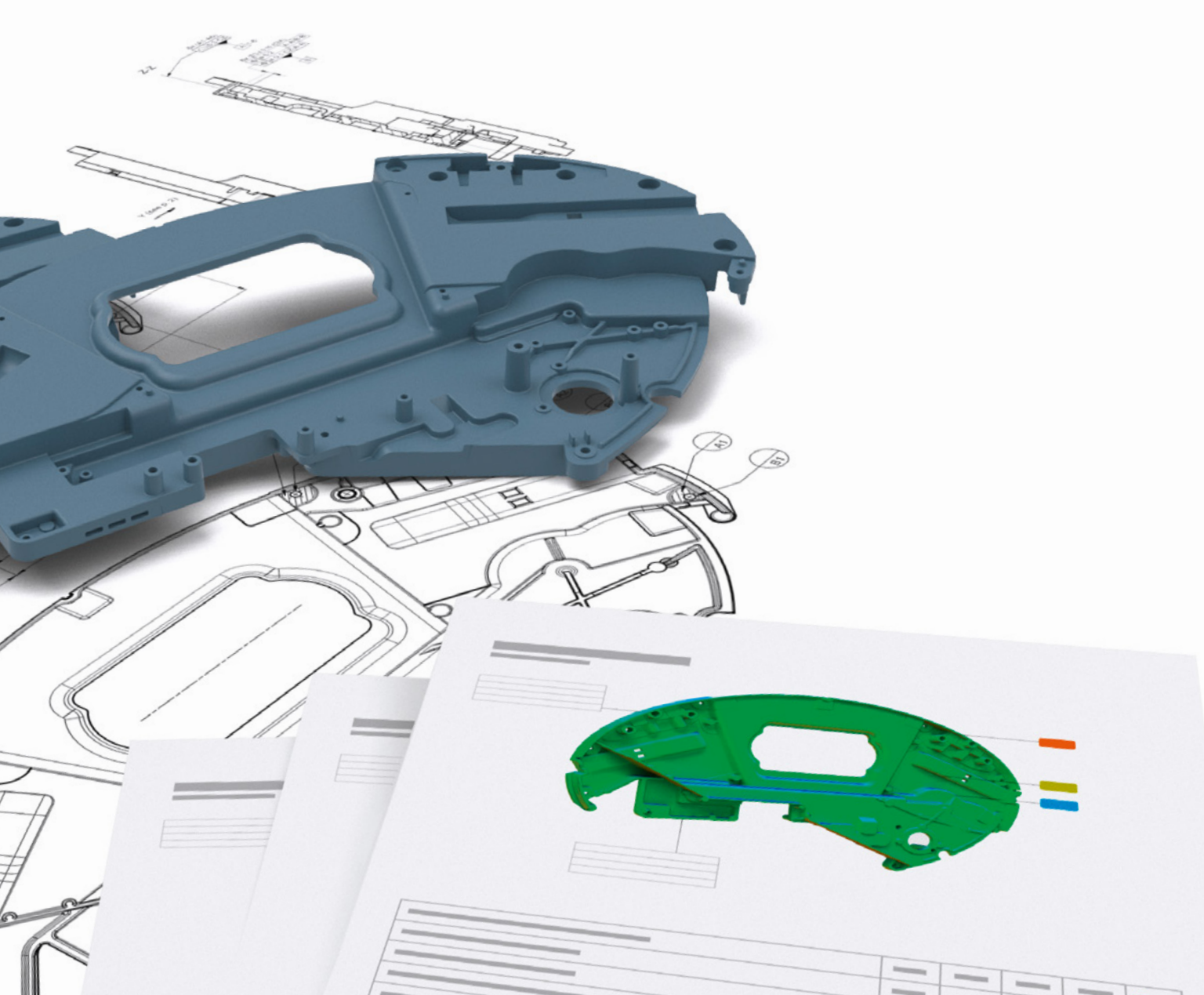
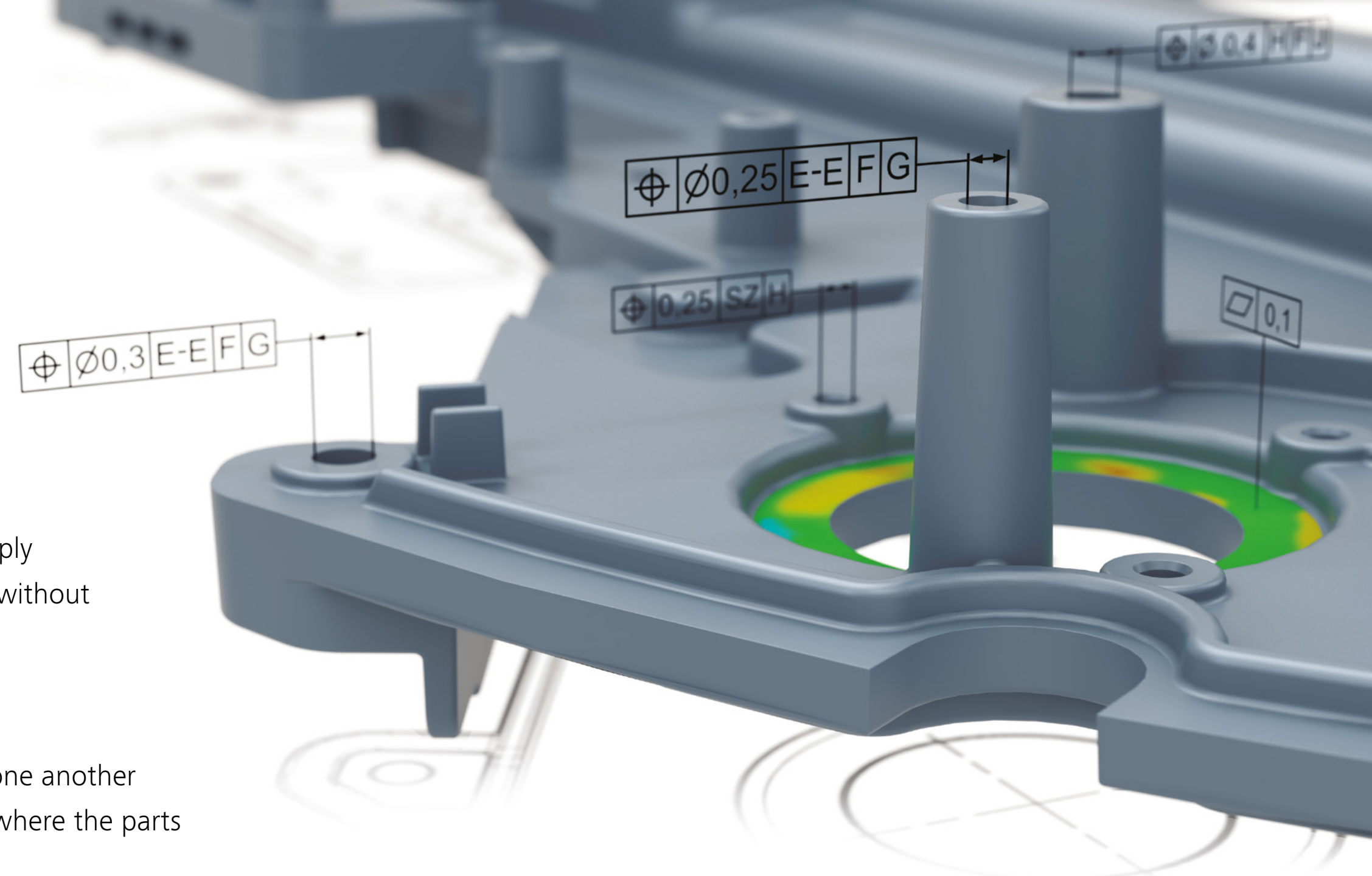
Customization

A command recorder saves all executed operations as a Python script, which can then be either repeatedly applied or adjusted for further measurements.

As part of the ZEISS Quality Suite, the software supports the measuring and inspection process with detailed analysis and reporting functions. The results are compiled in a simple and concise manner.

Free trial version

Experience the numerous benefits of ZEISS INSPECT in the ZEISS Quality Suite for 14 days – free of charge and without any contractual obligation.



ZEISS Industrial Quality Solutions

ZEISS Industrial Quality Solutions is a leading manufacturer of multidimensional metrology solutions. These include coordinate measuring machines, optical and multi-sensor systems, microscopy systems for industrial quality assurance as well as metrology software for the automotive, aircraft, mechanical engineering, plastics and medical technology industries.

Innovative technologies such as 3D X-ray metrology for quality assurance complete the portfolio.

In addition, ZEISS Industrial Quality Solutions offers a broad global spectrum of customer services with ZEISS Quality Excellence Centers close to its customers.



Your Holistic Technology Partner

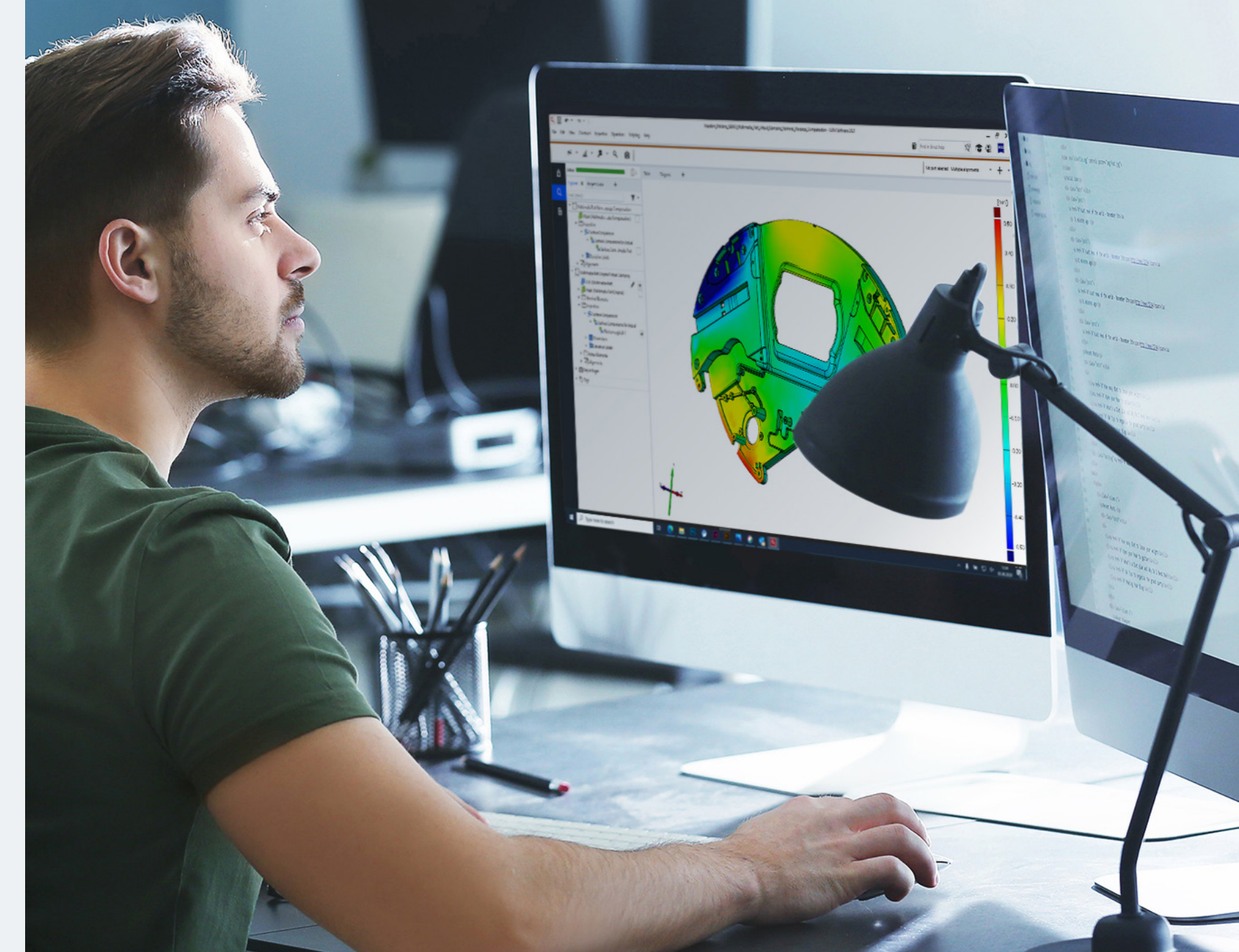
Numerous services and training courses support you in your daily work with 3D measuring technology. Training courses and webinars help you to extend your knowledge about using the software and get to know more application fields for the measuring systems.

The ZEISS Quality Suite supports you with instructions, tutorials and frequently asked questions and answers. Moreover, the user forum offers a platform for mutual exchange and support.

At conferences and application-based workshops, webinars and digital demos, ZEISS directly shares process and measurement technology know-how. In addition, contractual support and services for all measuring solutions are available.

Training

ZEISS training centers offer training and eLearning courses for all levels of expertise. The training courses follow an internationally standardized concept and are implemented by our certified partners in the corresponding national language. In addition to online training courses and scheduled courses in our training centers, customer-specific on-site training courses are also available on request.



Support und Service

ZEISS provides support and services to assist you quickly and reliably if required. These are based on the following three pillars: Remote Assistance, Services and ZEISS Metrology Care.



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