



Quality starts with Q. ATOS Q.



Seeing beyond



The versatile ATOS compact class

Precise optoelectronics, robust sensor design and powerful software: ATOS Q meets high metrological demands. With its compact design and a weight of only four kilos, the powerful 3D scanner is ideal for mobile use and for complex measuring and inspection tasks where space is limited. ATOS Q quickly captures detailed information on product quality and thus provides the data basis for targeted analyses. In addition, ATOS Q impresses users with its ease of use.

ATOS accelerates production processes

ATOS 3D scanners provide full-field 3D scans that enable comprehensive process and quality control by making errors and defects on parts and tools visible. This allows corrections to be initiated at an early stage and processes to be optimized.

Worldwide, ATOS 3D scanners ensure the dimensional quality of primarily sheet metal, cast and plastic products from the automotive, consumer goods and aerospace industries. The systems are used to accelerate the time-to-market and maintenance of products, to ensure quality in ongoing production and thus to minimize costs.



Shop floor metrology

Thanks to their high speed and precision, ATOS systems are now replacing traditional measuring machines in all industries. The 3D scanners are installed in measuring rooms, but are ideal for use in production environments thanks to their dust- and splashproof optics and electronics. The built-in fiber optic cables and the perfectly tuned software guarantee fast and interference-free data transmission.

ATOS Q

Created for a wide range of tasks

ATOS Q is used in various industries for the measurement of small to medium-sized parts. The ATOS Q sensor is delivered with the powerful ZEISS INSPECT software that covers the complete workflow from data acquisition to inspection and reporting in one package. First, the ATOS Q sensor and software provide accurate, high-resolution scans of the measuring objects at high speed. Based on these scans, the software then generates a geometric digital twin of the real part, which serves as the basis for inspection, analysis, mesh editing, adaptive manufacturing, simulation and reverse engineering.

With six available precision lenses, the system covers measuring areas of different sizes: 50, 100, 170, 270, 350, 500. Changing from the smallest to the largest measuring volume is easy thanks to the fixed camera position.

Additive manufacturing

Speed up product development and launch with high-resolution polygon meshes (STL files) for 3D printing, milling, additive manufacturing and dimensional inspection



Casting and forging

Shorter measurement and inspection times in sand casting, die casting and investment casting as well as in the forging industry



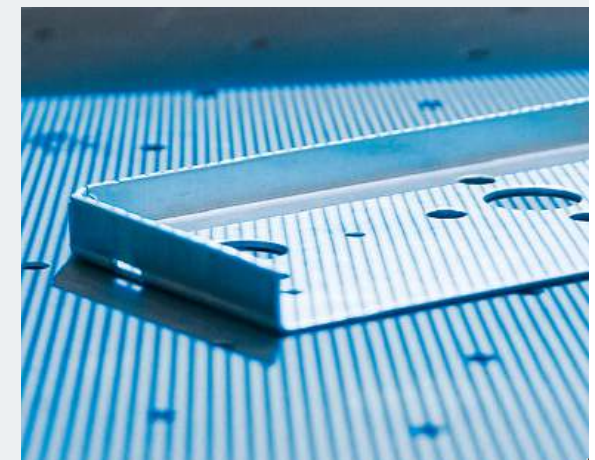
Plastics

Optimization in all phases of injection molding, blow molding and thermoforming



Metal forming

Efficient quality control from toolmaking and testing, first article inspection and serial inspection to assembly



Versatile all-rounder

The compact ATOS Q scanner solves complex measuring and inspection tasks in a manual, semi-automated or automated mode in combination with ZEISS ScanCobot or ATOS ScanBox 4105. Each of these modes is process-safe and convenient, as the software guides the user through the entire workflow.

Manual

With a weight of only four kilos and its compact design, ATOS Q can be easily moved. The 3D scanner can be used on a tripod in the measuring room but also mobile in production.



Semi-automated

Combined with a tripod or alternatively a desk stand and the ROT 350 rotation table or a Motorization Kit, ATOS Q can be used in semi-automated operation.



Automated

With automatic high-precision measurements, ZEISS ScanCobot accelerates the development of small and medium-sized parts. High-throughput series quality control is made possible by integrating ATOS Q into ATOS ScanBox 4105 – the powerful duo for more efficiency.





ATOS technology

The ATOS sensors are fully tailored to the metrological requirements of industrial users and provide absolute, accurate and traceable measuring data even under harsh conditions. The 3D scanners operate with structured blue light for contactless measurement.

Triple Scan Principle

The Triple Scan Principle ensures precise and complete measuring data, even with complex geometries and non-cooperative surfaces. The sensor's two high-resolution cameras and projection unit deliver different views of an object in each individual measurement. To accomplish this, the projection unit projects a fine fringe pattern onto the part surface, which is captured by the two cameras operating on the stereo camera principle and used by the software to generate the digital geometric twin.

The stereo camera setup gives the system a built-in, sensor-controlled process reliability monitoring feature during measurement. The software gives the user continuous feedback on the calibration status, the transformation accuracy of the individual measurements, changes in the environment and part movements.

High measuring speed

With each scan, ATOS sensors deliver full-field 3D coordinates within seconds. Each individual measurement consists of up to 12 million independent measuring points. This is made possible by the low noise level of the Blue Light Equalizer. It increases the brightness of the light source, allowing for short exposure times.

The excellent detail reproduction of the measuring data makes ATOS Q suitable for the measurement of very small parts.



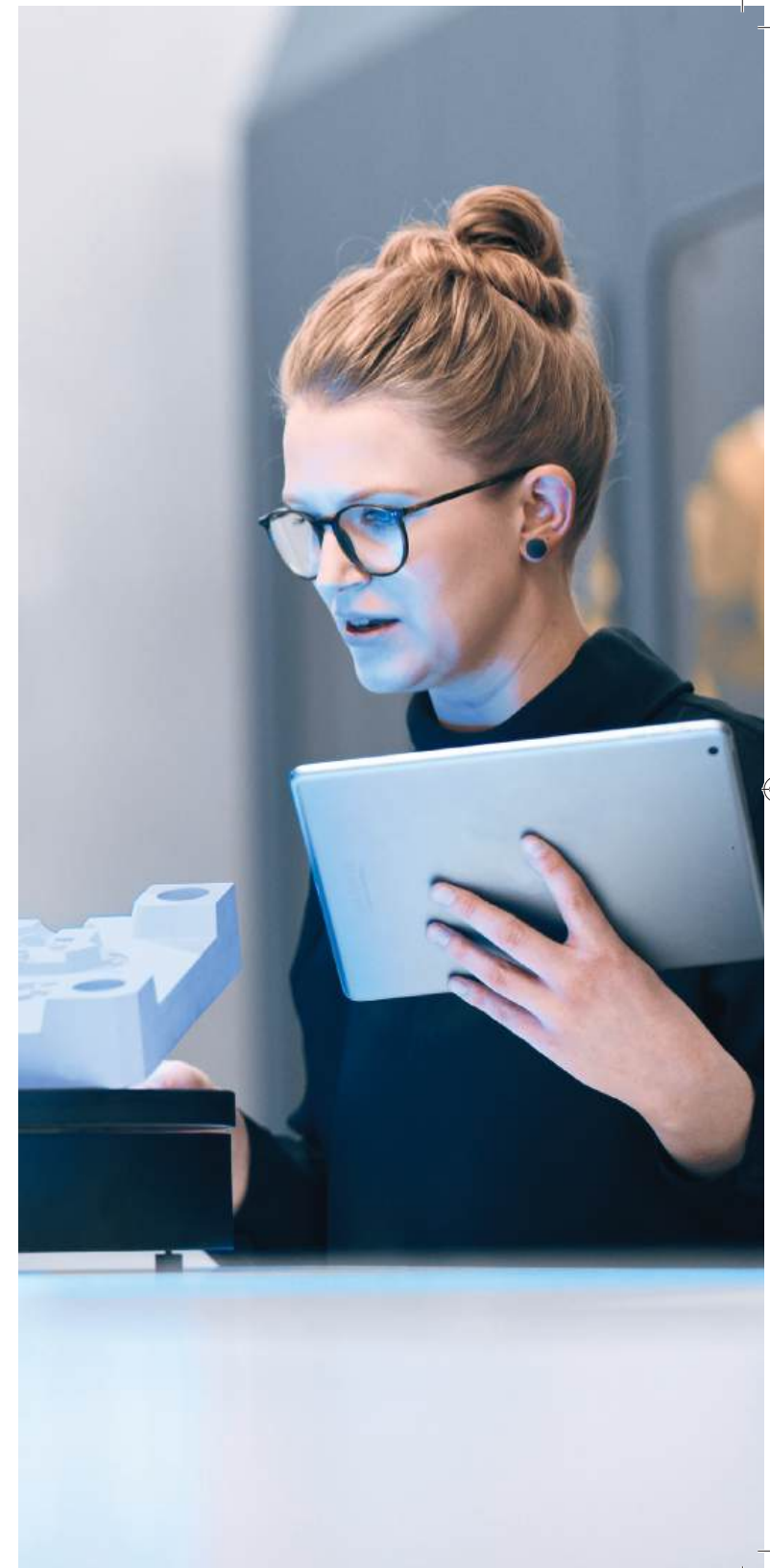
Technical data

ATOS Q is available with two different camera resolutions: 12 M and 8 M, which means the 3D scanner captures up to 2×12 million or 2×8 million coordinate points during scanning. The accuracy, resolution and the measuring area can be freely defined.

8
MEGAPIXELS

12
MEGAPIXELS

	ATOS Q 8M	ATOS Q 12M
Light source	LED	LED
Points per scan	8 million	12 million
Measuring area [mm ²]	50 × 35 – 500 × 370	50 × 35 – 500 × 370
Point distance [mm]	0.02 – 0.15	0.01 – 0.12
Working distance [mm]	490	490
Weight	approx. 4 kg	approx. 4 kg
Dimensions	approx. 340 mm × 240 mm × 83 mm	approx. 340 mm × 240 mm × 83 mm
Cable length	10 m fiber optic cable	10 m fiber optic cable
Operating system	Windows 10	Windows 10
Measuring volumes	50, 100, 170, 270, 350, 500	50, 100, 170, 270, 350, 500





Automated 3D metrology

With ATOS Q the optical 3D measuring systems ATOS ScanBox and ZEISS ScanCobot ensure efficient quality control in the development and production process of small and medium-sized parts.

User-friendly inspection software and easy robot programming in the virtual measuring room (VMR)

As the central control and measurement planning software, the VMR reproduces the entire measuring procedure: measurement planning, digitizing and inspection. The CAD data set for the part being inspected is imported into ZEISS INSPECT together with the corresponding measurement plan. The software automatically computes the necessary sensor positions and robot paths. If no CAD data is available, the software uses the part's geometry to generate evenly spaced measurement positions. This is followed by the measurement, inspection and analysis – fully automated. The user does not require any special robotic skills.

Advantages for the entire workflow

High measurement speed:

With ATOS ScanBox, measurement and inspection time is reduced by more than half compared to traditional measuring machines.

Easy to implement: ATOS ScanBox 4105 and ZEISS ScanCobot require only a standard socket and stand firmly and securely on a small surface, even without floor anchoring.

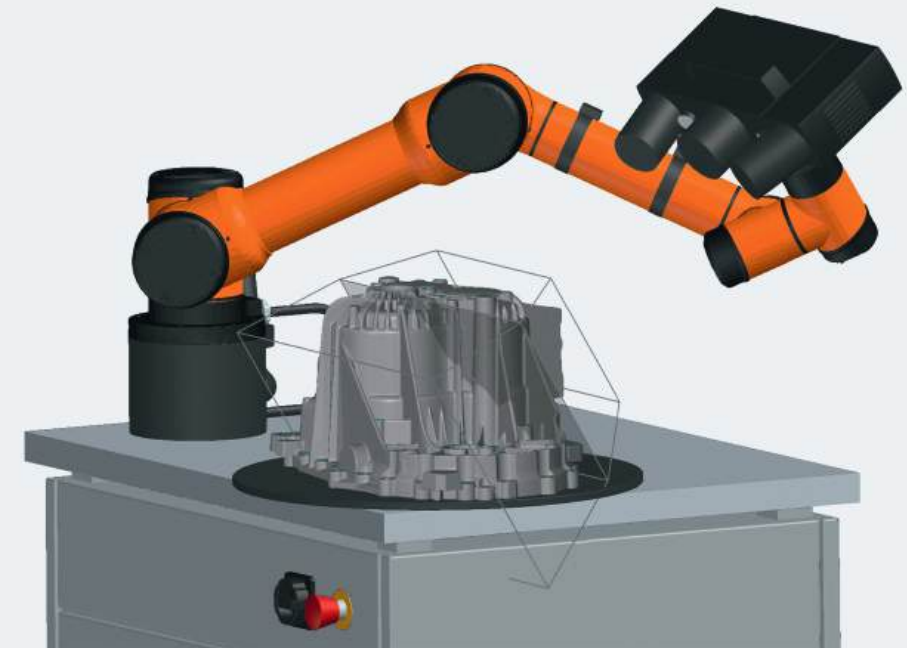
Mobile use: ATOS ScanBox 4105 and ZEISS ScanCobot can be moved easily and quickly to the next point of use thanks to rollers.

Process reliable and runtime-optimized: Smart Teach functionality in the virtual measuring room simplifies the process of robot programming. Measurement positions are updated automatically, if the CAD or individual elements change.

Burn-in process: The created measuring program is integrated through an automated process. For this, the robot moves to the measurement positions and determines individual measurement parameters on the real part.

Serial measurement: The finished measurement programs can be used for additional component testing. Changes to the CAD data sets and inspection plan can be updated with the click of the mouse thanks to the software's parameter-based design.

Reporting with one click: Once inspection is complete, the results can be compiled into a custom report with photos, tables, diagrams, text and graphics.





All-in-One-Software

ZEISS INSPECT

Scanning, inspection and reporting from a single source: ATOS Q is equipped with the ZEISS INSPECT software. You can import CAD data, create polygon meshes from point clouds and execute 3D inspections.

Certified inspection software

The measuring accuracy of the ZEISS software has been tested and certified by the National Metrology Institute of Germany (Physikalisch-Technische Bundesanstalt, PTB) and the National Institute of Standards and Technology (NIST). By comparing obtained results with reference results, the software has been put in the category of lowest measurement deviations (Class 1).

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 buffering, the desired inspection steps can be transferred to subsequent parts without any programming effort.

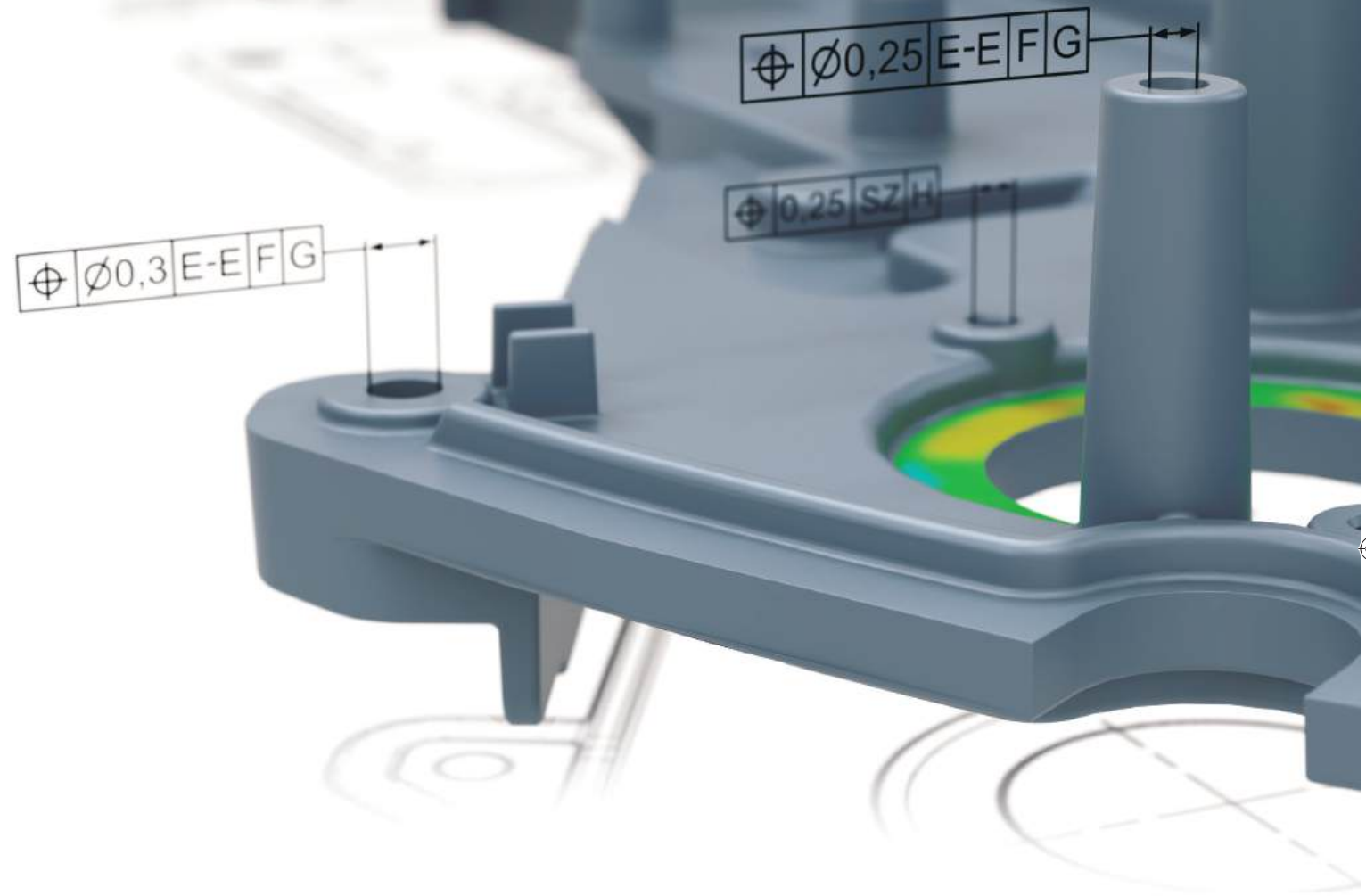
Digital assembly

Digital assembly allows for the alignment of parts to one another and an analysis of whether they fit accurately, regardless of where the parts were manufactured.

Customization

A command recorder saves all executed operations as a Python script, which can then be repeatedly applied or adjusted for other 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 advantages of ZEISS INSPECT in the ZEISS Quality Suite for 14 days - free of charge and without any contractual obligation.

Start now: zeiss.ly/foig



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

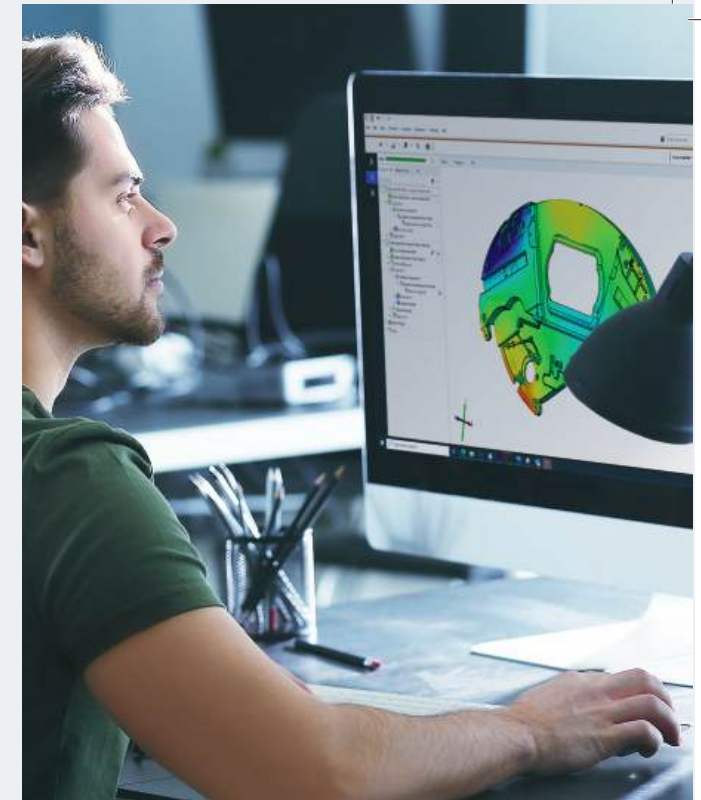
Numerous services and training courses support you in your daily work with 3D measuring technology. Training courses and webinars help you to extend your knowledge about using the software and get to know more application fields for the measuring systems.

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.

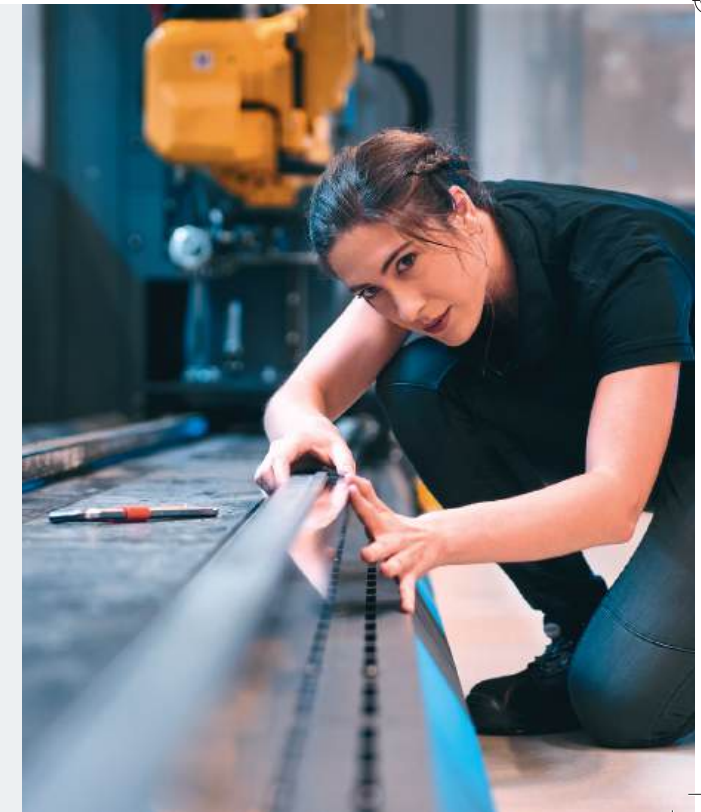
Training

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 and 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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