

Unleash the full efficiency of your process



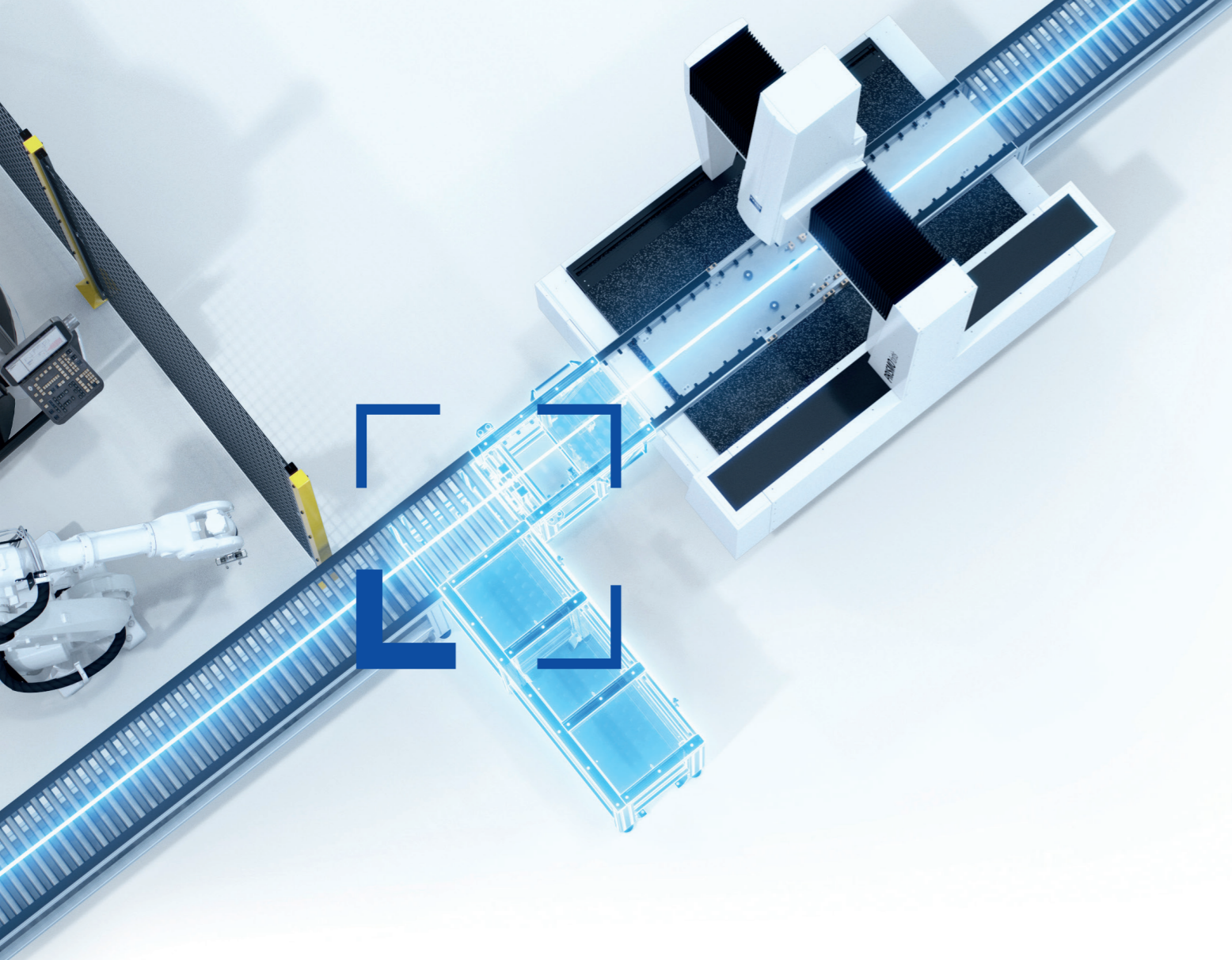
ZEISS Integration Series



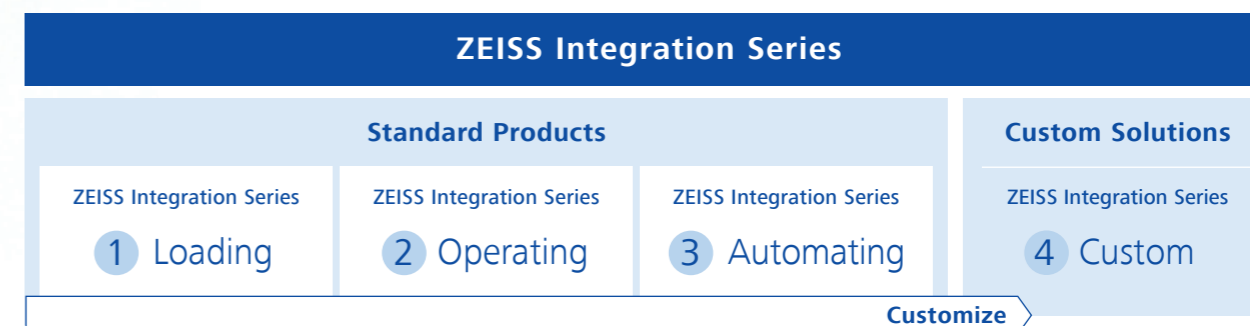
zeiss.com/integration-series

EN Version

Seeing beyond









ZEISS Integration Series integrates your quality assurance, optimizes your processes and thus increases your productivity by selecting the right loading system or the ideal integration and automation solution for your CMM. The broad spectrum of ZEISS Integration Series ranges from manual loading systems with ergonomic advantages to fully automated cells that increase the throughput of your quality assurance by maximizing machine utilization. ZEISS offers these products as standard solutions or as individual projects that are perfectly adapted to your processes and can be used in the measuring room as well as directly in the production environment.



Unleash the full efficiency of your process

ZEISS Integration Series

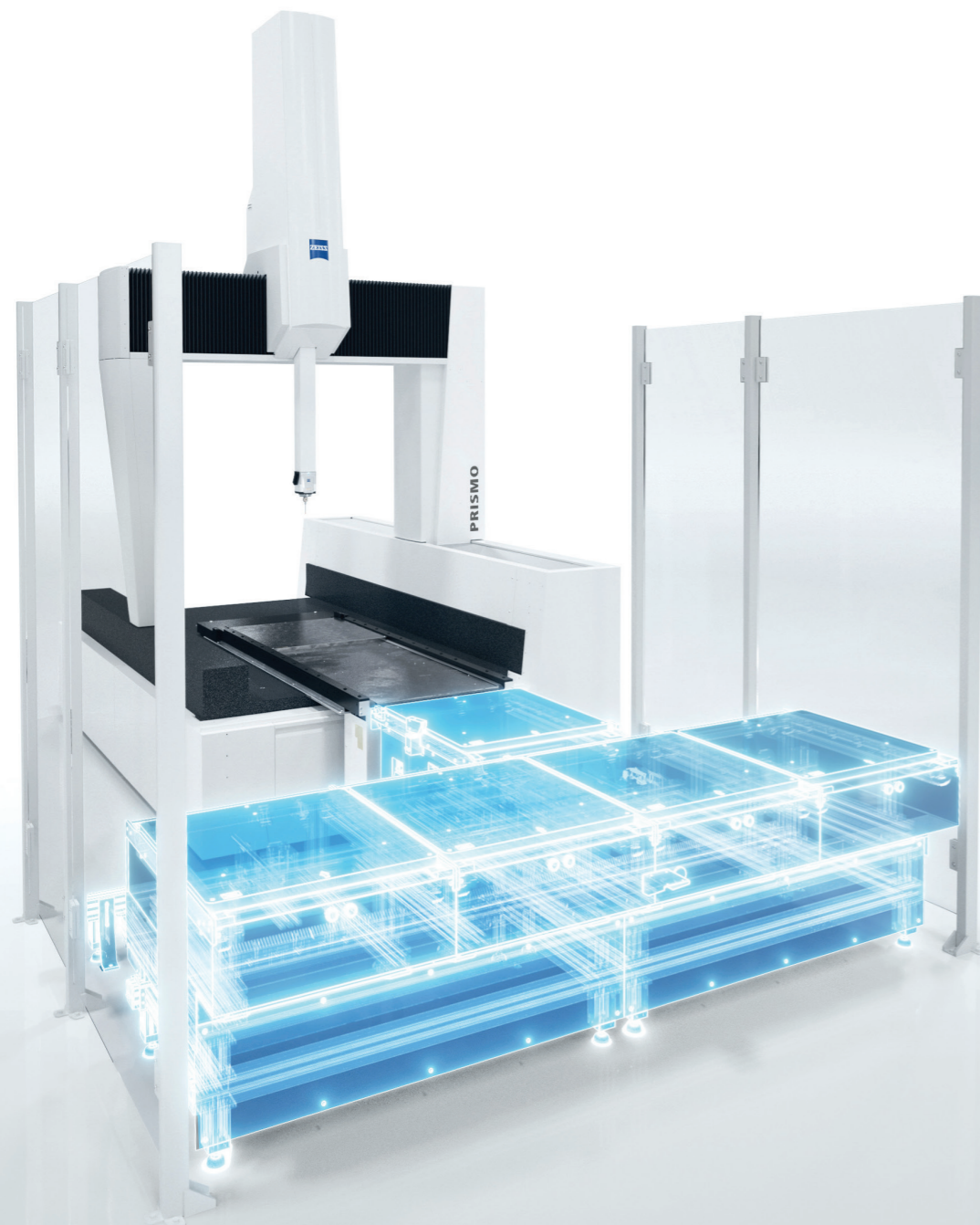
All benefits at a glance

- 
Maximum machine utilization
 Optimized loading avoids downtimes during setup and ensures maximum utilization of your measuring equipment.
- 
Optimized processes
 Shorter operating times and walking distances combined with flexible solutions guarantee optimized processes.
- 
Standard products or custom solutions
 All products are available as standard products and are ready for immediate use or can be adapted to your needs.
- 
Ease of use
 Significantly improved workpiece handling thanks to simple and intuitive operation - even by untrained operators.
- 
Ergonomics & safety
 Intelligent loading systems guarantee maximum safety and ergonomics when handling for example heavy workpieces.
- 
One partner for the complete solution
 Complete solutions with holistic project support from a single source: from inquiry and handover to service support.

ZEISS Integration Series

Loading

The feeding and loading systems from ZEISS can be used in the measuring room as well as at-line and in-line. They are compatible with various CMMs according to your needs; fully automated systems are also available on request. ZEISS loading solutions optimize your part flow and operating times and maximize the safety of your employees.



-  Automatable
-  Compatible CMMs
-  Number of available spaces on setup table

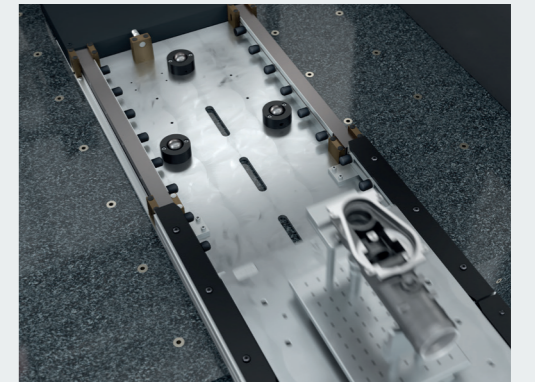
Pallet feed


The pallet feed forms the basis of all loading systems. In combination with feeding solutions, it guarantees the safe and effortless transportation of workpieces into the measuring position as well as a safe measuring processes thanks to position monitoring, three-point support and a temperature sensor unit.

Optimization of the measuring process

- Repeatable workpiece positioning
- Sensory position detection prevents collisions

Dimensions: 250 kg, 630 x 630 mm / 120 kg, 500 x 400 mm



 ZEISS CONTURA / ZEISS PRISMO / ZEISS MICURA
ZEISS ACCURA / ZEISS CenterMax



Manual shuttle station


The system allows for a high degree of flexibility in terms of time, as the setup and measuring process are decoupled. The operator can prepare several parts and thus bundle the setup time. Clamped parts can be positioned for measuring in any order in just a few seconds and unclamped after measuring without time pressure.

Fast manual exchange of pre-set pallets

- Optimized CMM utilization
- Measurement with different measuring fixtures on one CMM
- Optimized ergonomics



  ZEISS CONTURA / ZEISS PRISMO / ZEISS MICURA
ZEISS ACCURA / ZEISS CenterMax

 3 – 8 pallets

Automated shuttle station

When loading with the automated shuttle station, the CMM is never at a stand-by. This increases throughput and productivity enormously. Automatic loading and unloading of the workpieces into the measuring volume after manual setup save time: A single employee can operate several CMMs and even unmanned shifts can be used for quality assurance.

Automatic workpiece exchange

- Optimized operator use
- No downtime, hence maximum CMM utilization
- Optimized footprint: can be placed lengthwise or crosswise to the CMM



 ZEISS PRISMO / ZEISS CenterMax

 3 – 10 pallets

Setup table & pallet transport cart

From the setup table onto the pallet transport cart, to the CMM and into measuring position: The transport of pallets with workpieces is executed entirely on rollers. This speeds up the loading process compared to crane loading or manual loading and increases machine safety.

Remote setup of workpieces

- Simplified part handling for heavy, large or hard-to-reach workpieces
- Loading of multiple CMMs with measuring fixtures



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1 pallet

Ball caster setup table

The ball caster setup table is used for setup at a central point, meaning that several CMMs can be loaded and different measuring tasks can be prepared. This eliminates downtimes of the CMMs, and workpieces can be clamped comfortably and reproducibly while reducing the setup time significantly.

Central setup of workpieces

- Preparation of several different measuring tasks
- Holding the fixtures for several CMMs
- Optimized CMM utilization



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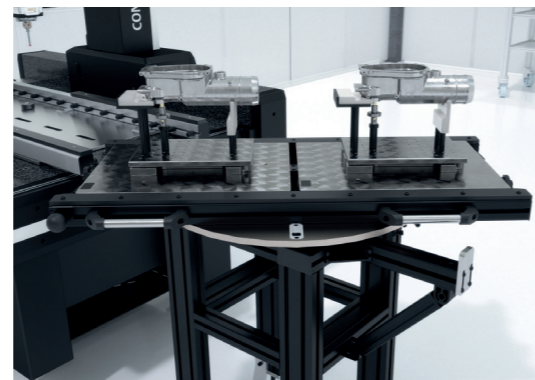
3, 5, 7 or more pallets

Rotating setup station

The rotating setup station enables the fastest possible exchange of tested and untested workpieces on the measuring machine, thus increasing machine utilization. In just a few seconds, the operator slides the inspected pallet from the measuring machine onto the rotating setup station, rotates the movable unit by 180 degrees and slides the previously clamped workpiece into measuring position.

Fast exchange of 2 pallets

- Minimal footprint
- Improved ergonomics and accessibility
- Optimized CMM utilization



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2 pallets



Duplex system

The Duplex system for ZEISS DuraMax improves machine utilization, as the workpieces can be clamped and unclamped in parallel to the measuring process. In addition, the system improves the ergonomics of part handling and prevents damage to the measuring sensors.

Setup during the measurement process

- Optimized CMM utilization
- High throughput of workpieces



ZEISS DuraMax



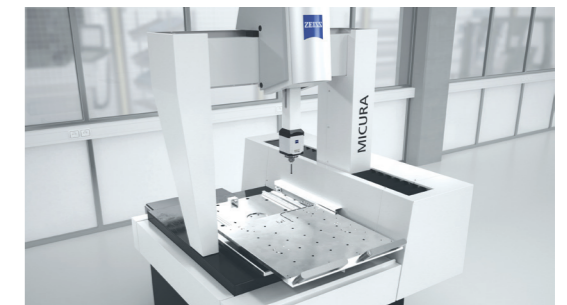
2 pallets
50 kg, 500 x 500 mm

Manual translation stage

The manual translation stage ensures unhindered access to the measuring machine, as the setup takes place out outside the measuring volume. Moreover, it facilitates loading and clamping of workpieces and minimizes the risk of damage to the measuring machine.

Setup of workpieces outside the measuring volume

- Improved ergonomics
- Easy accessibility of the workpiece



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1 pallet
150 kg, 620 x 620 mm

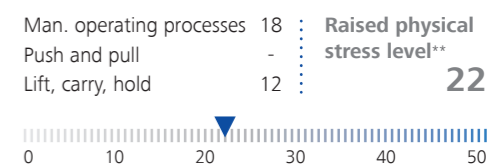
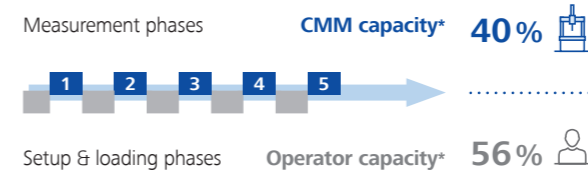
Measurable success thanks to reduced physical stress and time pressure for employees & maximum machine utilization



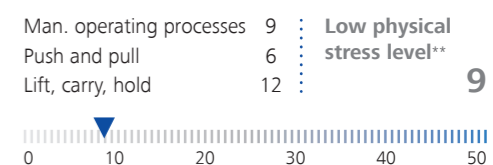
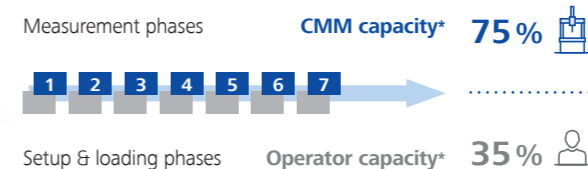
Maximum machine utilization

Ergonomics & safety

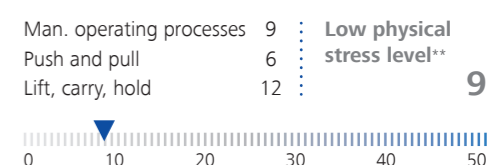
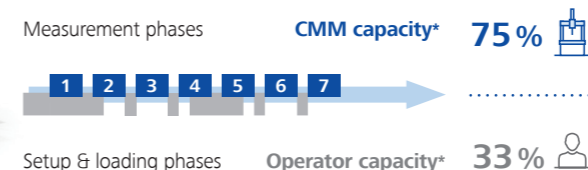
CMM



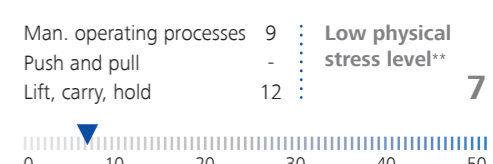
CMM + rotating setup station



CMM + manual shuttle station



CMM + automated shuttle station



* Capacity dependent on shift system, setup and measuring times. In this example with "cylinder head": 2 shifts; measuring time: 15 min; setup time: 5-10 min

** REFA details
 < 10 low physical stress level
 10 - < 25 raised physical stress level, physical stress possible
 25 - < 50 significantly raised physical stress level, improvements of ergonomics necessary
 > 50 high physical stress level, excessive physical stress

ROI calculator

Calculate the ROI for your new feeding and loading system online to get important key figures such as cost/part and break-even point right away – tailored to your individual requirements.

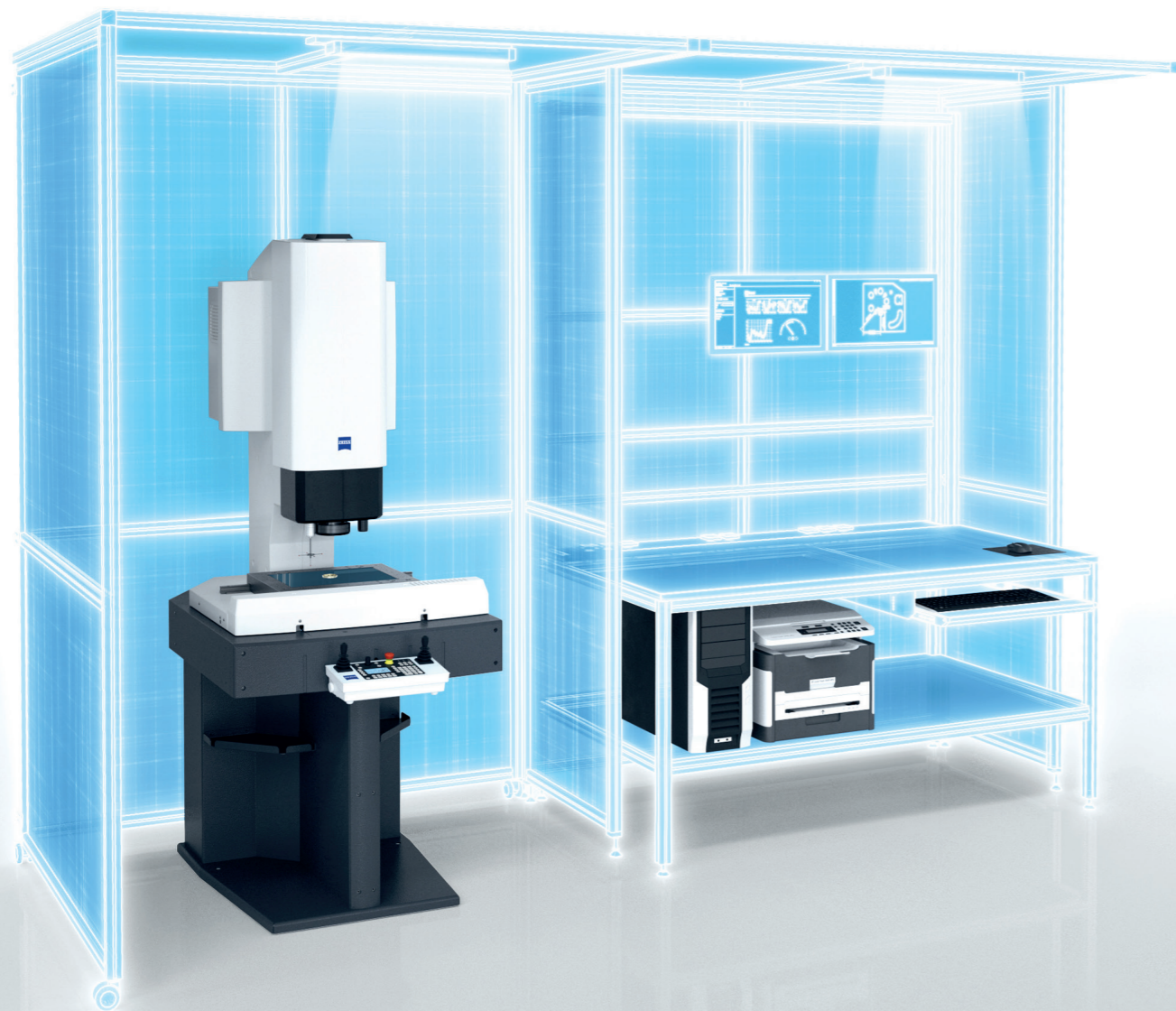
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ZEISS Integration Series

Operating

The Operating products from ZEISS Integration Series allow you to integrate your quality assurance and its data where it is needed, without any detours. Measuring close to production allows for quick quality statements and direct countermeasures. The quality assurance system is adapted to the production environment and the measurement data is recorded centrally. This makes it possible to regulate adverse conditions such as temperature fluctuations or to integrate manual measurement results into automated processes.



Compatible CMMs

GageStation

With ZEISS PiWeb, the GageStation combines measurement data from handheld measuring devices with CMM measurement data and visualizes them in a comprehensible manner via touch screens and measurement report templates. The GageStation requires little space and offers protection from environmental influences in the production environment that can falsify measurement results.

Consolidation of all quality data in one report

- Data capturing independent of measuring equipment
- Centralized data handling
- Protection against environmental influences



ZEISS DuraMax / ZEISS O-DETECT
ZEISS O-INSPECT 3/2/2, ZEISS O-INSPECT 5/4/3

ThermoStation

The ThermoStation shields measurement processes from very high temperature fluctuations and harsh conditions in the production environment. CMMs such as ZEISS CONTURA can be used where they are needed - and are guaranteed to deliver accurate measurement results.

Tightly enclosed housing to protect the CMM from environmental influences

- Small footprint compared to conventional measuring rooms
- Installation directly where quality assurance is needed
- Integrated pallet feeding system for ergonomic loading



ZEISS CONTURA 7/7/6, ZEISS CONTURA 7/10/6

ZEISS Integration Series

Automating

The software solutions of the ZEISS Integration Series enable the hasslefree automation of CMMs and peripherals, as well as the control of fully automated cells or the starting of complex individual measurements. The intuitive interfaces ensure that all applications can be used even by untrained operators.



 Automatable  Compatible CMMs



Automation Interface

The Automation Interface allows you to easily automate your measuring device without any engineering effort. In addition to starting inspection plans and providing feedback on measurement results or machine status, the application allows you to control CMM peripherals. The interface is also preconfigured for all products in the ZEISS Integration Series. For example, the control of automatic fixtures or the pallet feed can be configured effortlessly with just a few clicks. Individual fixtures developed by you can also be controlled via configuration.

Easy automation of the CMM periphery

- Standardized communication interfaces: OPC UA, Profinet, EthernetIP
- User administration allows plant operators, measuring technicians, setters or service to see exactly what they need
- Can be used in both automatic and manual mode even by untrained operators
- Simple configuration by click and directly via the user interface, without complex PLC programming
- Efficient commissioning with low project risks and low costs



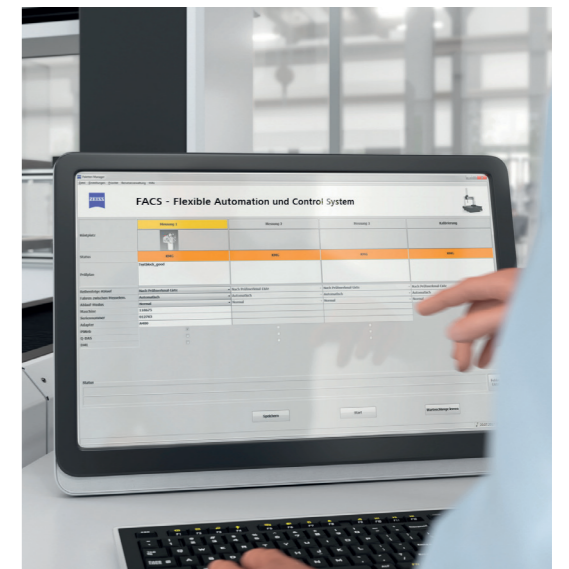
  all ZEISS CMMs



FACS

If your requirements go beyond the standardized Automation Interface, the Flexible Automation & Connectivity System (FACS) is the right software solution for you. FACS allows you to automate recurring quality assurance procedures in complex processes: programmed and customized for your needs.

The individual software solution for complex tasks

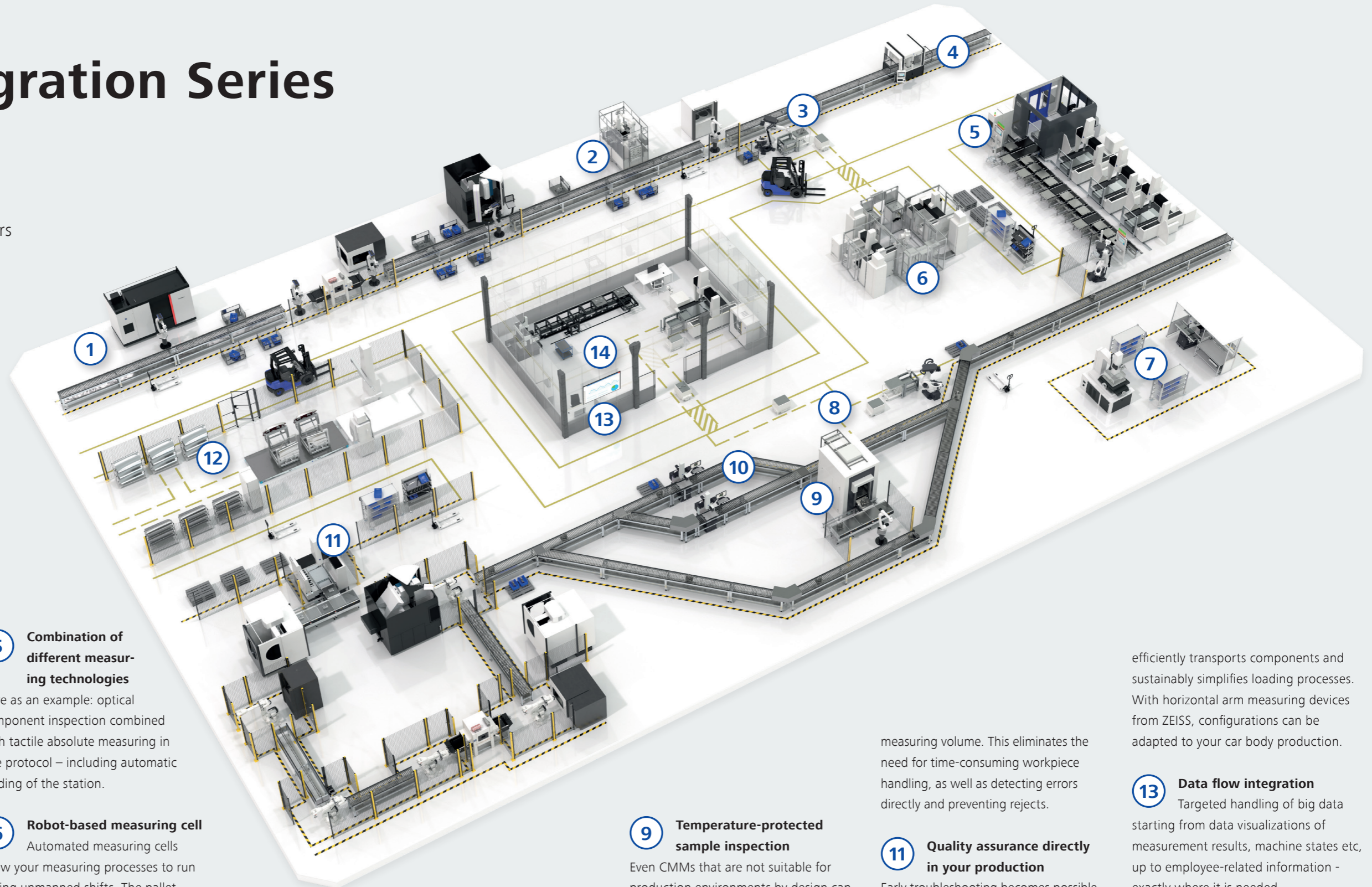
- Automated startup from single measurements to complex pallet measurements
- Coordinator with I4.0 connectivity for individual automation sequences
- Networking of multiple CMMs in automated applications
- Automatic part identification with 1D/2D scanner or RFID system
- Intuitive user interface for untrained operators
- User management with automatic user recognition
- Tested in medical technology according to FDA specifications



  all ZEISS CMMs

ZEISS Integration Series Custom

ZEISS Integration Series Custom offers customized solutions that are tailored to your requirements. This allows for made-to-order optimization of your processes, even for complex tasks.



1 X-ray at-line inspection
ZEISS VoluMax CT units are designed to inspect a large number of parts in little time. The device and software are configured individually, according to the measuring task. Loading can be performed manually or automatically.

2 Flexible use of measuring cells
By positioning CMMs and robots on the same platform, the automated measuring cell can be flexibly placed in production and loaded manually or automatically.

3 Communication interface for robot integration
Individually configured interfaces according to your needs enable communication between quality assurance and automation technology in production.

4 ZEISS SurfMax: Surface defect detection
The breakthrough quality assurance solution for reliable high-speed optical defect detection: a combination of deflectometry-based, high-resolution optical sensors from ZEISS and machine learning.

5 Combination of different measuring technologies
Here as an example: optical component inspection combined with tactile absolute measuring in one protocol – including automatic loading of the station.

6 Robot-based measuring cell
Automated measuring cells allow your measuring processes to run during unmanned shifts. The pallet storage can be loaded and measuring tasks can be executed systematically.

7 EDM industry solutions
Manual or fully automated outsourcing of CMM measurements increases productivity by saving valuable time that would otherwise be lost to the EDM machine.

8 Automated Guided Vehicle (AGV)
The automated and driverless transport system between production and measuring room enables a flexible production with optimal and systematic utilization of quality assurance and production machinery.

9 Temperature-protected sample inspection
Even CMMs that are not suitable for production environments by design can be installed in a controlled environment, for example to perform at-line sample inspections.

10 100% in-line measurements
The direct integration of the CMM into the line enables an efficient 100% inspection. The workpieces on the conveyor belt pass directly through the

measuring volume. This eliminates the need for time-consuming workpiece handling, as well as detecting errors directly and preventing rejects.

11 Quality assurance directly in your production
Early troubleshooting becomes possible thanks to timely quality statements directly at the point of production. The combination of shopfloor CMMs and matching loading systems can be perfectly tailored to your needs.

12 ZEISS Car Body Solutions
The remote-controlled, mobile honeycomb plate ZEISS CARFIT eMOBEE

efficiently transports components and sustainably simplifies loading processes. With horizontal arm measuring devices from ZEISS, configurations can be adapted to your car body production.

13 Data flow integration
Targeted handling of big data starting from data visualizations of measurement results, machine states etc. up to employee-related information - exactly where it is needed.

14 Measuring room with direct connection to production
ZEISS supports you as a total quality assurance provider and partner planning and setting up your production-related measuring room or provides you with a complete and customized measuring room.

Carl Zeiss

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