



Scaling Your Metrology Systems with Your Business

ZEISS Industrial Metrology



Reliability that Grows
What to Look for in a Metrology Partner

Selecting measuring systems that are reliable, easy to use and easy to integrate is key as you plan for scalability of your production. Finding a quality assurance system that will grow with you is a plus.

Your company doesn't stand still. Driven by global competition, rapid product introductions and constant variability in product demand, manufacturers face frequent and unpredictable market changes. The shorter production and lead times you are faced with, coupled with your customers' need for highly accurate measurements and tight tolerances all point to one thing – finding scalable solutions.

Does this sound familiar? No matter if you're considering simple future development roadmaps or reconfigurable manufacturing systems (RMS), remember to include quality assurance and metrology systems when developing your plans.

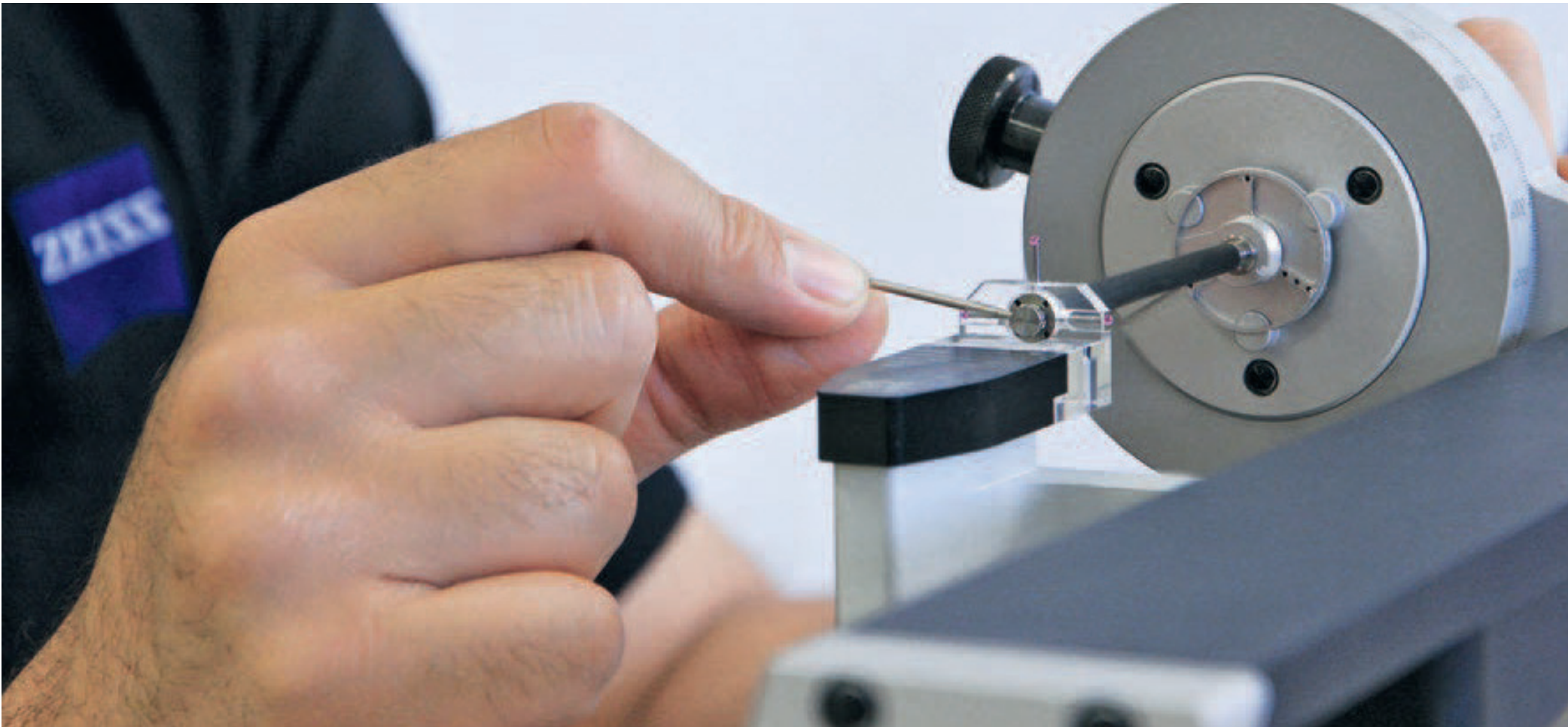
Foundation: entry-level equipment
The transition from manual measurement to automated equipment can be daunting. But there comes a time when every company must take quality assurance to the next level. Your reputation depends on it. Reputation isn't built overnight, but it can be destroyed with a single serious quality incident.

Entry-level metrology machines are ideal for companies moving from a manual to an automated system, or for those looking to change from equipment that has proven to be unreliable or failed to meet expectations.

This transition to more sophisticated equipment that meets your needs and delivers on your promise to customers can help your company reach the next level.

Designed with the user in mind
In addition to affordability, you need entry-level equipment designed with the new user in mind. It should be simple and intuitive to use. Look for machines that require a single push of the button. This will ease your company's introduction to metrology and shorten the learning curve for your team.

- Look for:
- Entry-level systems that are compatible with more sophisticated machines as you scale
 - Easy-to-use systems that allow full measurement performance in quick ramp-up time for even non-skilled operators
 - A software platform that will also grow with you
 - Equipment that offers speed and efficiency for your specific capabilities
 - Versatility in terms of the type of material, sizes, shapes and measurements that can be measured
 - Equipment with a reputation for durability
 - Flexibility for lab measurement or near line measurement
 - Accuracy so it is an improvement over the manual process
 - Training and support options as you and your team integrate into your processes



A Broad Portfolio

Keep Disruption to a Minimum when Scaling

Think about the portfolio of the company you purchase your entry-level equipment from. You want to select a partner who has a broad portfolio that allows you to grow with minimal disruption.

Flexibility: midpoint level equipment

High-frequency market changes in manufacturing have led companies to seek out systems that can be rapidly and cost-effectively adjusted to address abrupt changes in market demand. Multisensor measuring machines should be no different. They should offer flexibility for your business when you reach the midpoint.

With the ability to measure a wide variety of component sizes, types and materials with a single machine, manufacturers can adjust measurement processes to meet fluctuations in demand. Speed, efficiency and ease of use are cornerstones of a metrology solution that will grow with you and meet your increased operational demands.

Look for:

- A system that gives you one machine with multiple measurement methodologies
- Flexibility in terms of fixturing and attachments
- Automatic light setting levels to maximum contrast and remove operator preferences and error
- Greater diversity of parts and materials that can be measured
- A system that can be used near line and in the lab

Software concerns when scaling

From a scalability standpoint, you don't want to start all over when your business is growing and you need more sophisticated metrology. Planning up front will control costs and retraining time when upgrading your equipment. This includes finding a metrology partner who has a software platform that grows with you.

Look for:

- Metrology equipment that offers software compatibility as you scale to eliminate user burden and training when you upgrade
- Software that has backward compatibility as well as forward compatibility
- The ability to store and transfer your historical data
- The ability to access your historical data for future uses
- Accountability and traceability so you can communicate value to your customer with the data and reports your equipment can generate

Cost Effective and Sustainable

Software Scalability is Part of the Equation

Scalable CMM systems create a capital investment roadmap for quality assurance that is both cost-effective and creates sustainability and continuity in your manufacturing process.

Best in class: sophisticated systems

As your production capacity continues to grow and the need for efficiencies increases, coordinate measuring machines (CMMs) offer the uncompromising quality assurance you need. Bridge-type CMMs are equipped to measure in any industry, providing accurate, repeatable results.

CMM systems can be tailored to meet your requirements using a wide range of configurations, making a CMM solution more affordable than many companies expect. The modular design of CMMs provide inherent flexibility, allowing you to modify the equipment and grow with your evolving needs.

Look for:

- CMMs and shop-floor equipment for inline inspection
- Ergonomic design ensures large measuring range with smallest possible footprint
- Joysticks that enable more precise control in 3 axes of motion
- Protocols that protect against temperature changes, moisture and contaminants for increased accuracy
- The ability to minimize air consumption during downtime to save money



When working with ZEISS Industrial Metrology, your business can find the solutions you need today and have confidence you have made an investment for your future.

Foundation: Entry-level Equipment

The O-SELECT digital measuring projector allows automatic 2D measurements within seconds at the push of a button for dependable and reliable results.



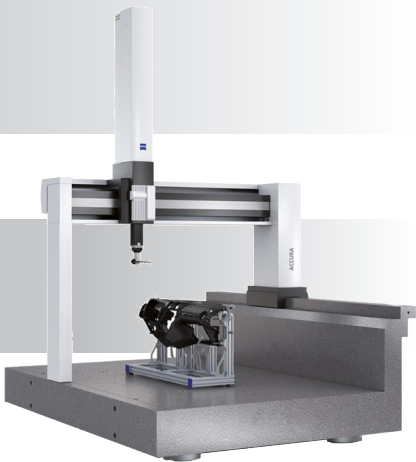
Flexibility: Midpoint Level Equipment

O-INSPECT multisensor measuring machines offer simplified programming and reduced measurement time while measuring a wide range of materials. ZEISS offers three models for optical and contact measurements.



Best in Class: Sophisticated Systems

Our CONTURA and ACCURA Bridge-Type CMMs provide faster, more precise measurement through their advanced design and CALYPSO CAD-based measuring software.



| | ZEISS O-SELECT Digital Measuring Projector | ZEISS O-INSPECT Multisensor Measuring Machine | ZEISS CONTURA Bridge-Type CMM | ZEISS ACCURA Bridge-Type CMM |
|--------------------------|---|--|--|---|
| Measurement style | 2D Measurements | 3D Measurements | 3D Measurements | 3D Measurements |
| Instrumentation | Telecentric optics | Multisensor measuring machines | VAST family of sensors | VAST family of sensors |
| Software | Touchscreen PC with professional reporting and easy data access | CALYPSO with PiWeb | CALYPSO with PiWeb | CALYPSO with PiWeb |

All our metrology solutions are supported by a nationwide service network of highly-trained technicians, who are always ready to assist you. Contact a ZEISS representative to learn how we scale your metrology systems to your business.

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