

SERVICE INFO

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MADE-TO-MEASURE

SERVICES

MAHR'S PRODUCT SERVICES

Services with expertise, quality, performance, experience and advice.

This is what **EXACTLY** means to us.

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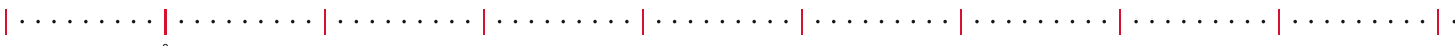


EXACTLY



- Expertise
- Quality
- Performance
- Experience
- Advice

This is what **EXACTLY** means to us.



"MADE TO MEASURE" – PRODUCT SERVICES



"MADE TO MEASURE" are services offered by Mahr that combine measuring accuracy with tailor-made service. This catalog contains an overview of the services Mahr offers under this concept, tailored to the various applications.

Our service specialists are here to help you throughout the entire life cycle of your measuring equipment, be it a caliper, measuring station or a complex measuring machine.

It is our aim to ensure the best possible operative availability and consistently maximum accuracy of your measuring equipment, and to optimize the working life of the product through a preventive maintenance concept and appropriate upgrades until the point of replacement.

Please do not hesitate to contact us if you have any questions about our services or face challenges that require other solutions.

We look forward to hearing from you!

Your Mahr Service Team

i More information and video

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SERVICES

for optimal equipment performance



Measuring equipment management



Consulting



Subcontract measurements



Training

SERVICES OFFERED

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STARTING UP

THE FIRST STEP TOWARDS A SOLUTION



Commissioning, acceptance, metrology capability

Following installation, the measuring station is commissioned. The warranty comes into effect upon final acceptance,

subject to the measuring machine operating according to the specification. However, the accuracy of the measuring process given the workpieces to be measured and the prevailing conditions is also critical. That is why the metrological capability of the measuring equipment often needs to be verified too.

Mahr's supplementary services include preliminary acceptance in your presence at the Mahr plant, as well as metrological capability tests carried out in accordance with the relevant defined procedures.

→ Product info

- Installation according to layout diagram
- Commissioning according to Mahr's fixed procedure
- Documentation in Mahr commissioning record, together with service report
- Successful acceptance together with you; start of warranty
- Documented calibration using qualified calibration certificate and calibration seal on measuring station service badge
- Practical training sessions, optional
- Optional metrological capability tests in accordance with procedures 1, 2 or 3



Commissioning following transportation

Commissioning is not just necessary for new deliveries; it is also recommended after transportation of a measuring station or a measuring machine.

After assessing the condition before transport, in addition to an inspection essentially verified through calibration, commissioning is carried out after transportation. This ensures that the measuring requirements are fulfilled.

To be on the safe side, please contact us if you want to move or relocate a measuring machine.

Service info

- To be performed every time the machine is transported
- Commissioning and acceptance go hand in hand
- Depends on scope and life of device type
- Fixed prices as per current price list

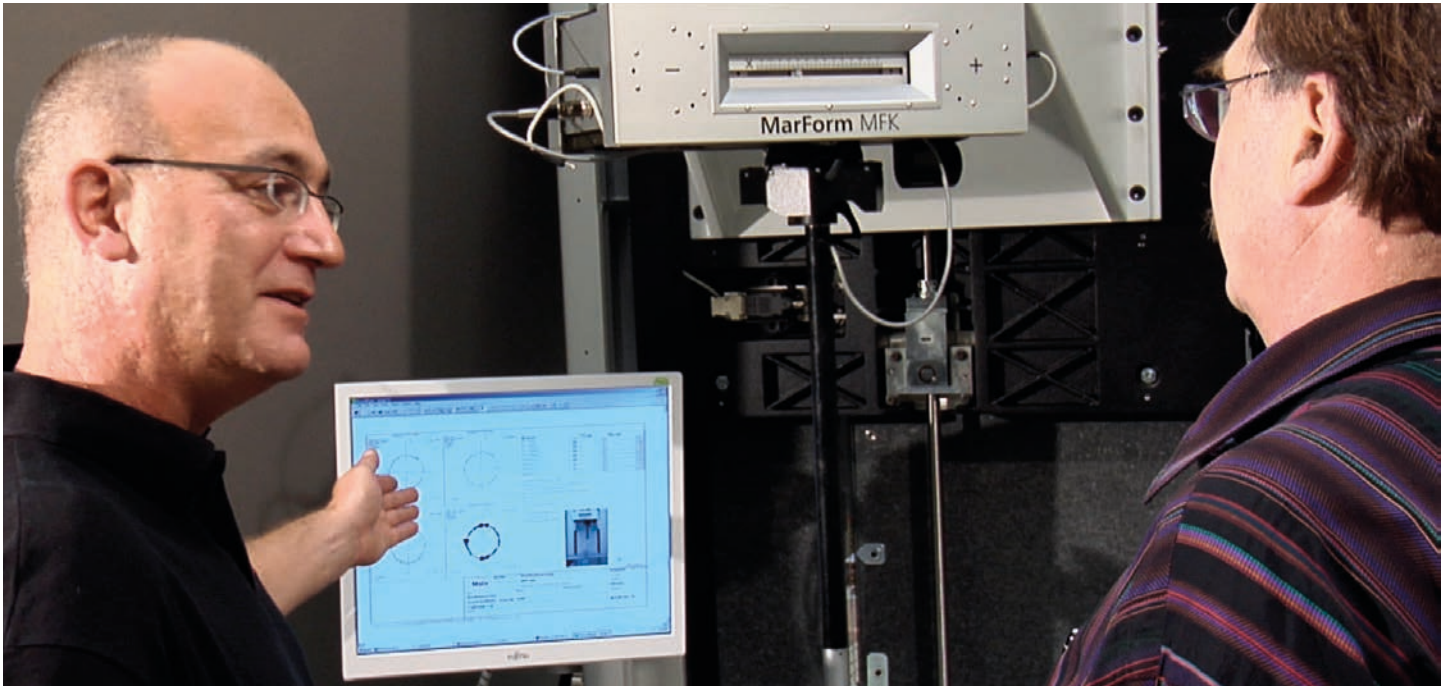
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MAINTENANCE

REGULAR PREVENTIVE SERVICING



Preventive maintenance

Mahr always recommends “preventive maintenance” to prevent faults and thus downtime of the measuring equipment. The objective of the maintenance is to increase the system’s availability and reduce maintenance costs.

Important to know:

Preventive maintenance is essential for all measuring laboratories accredited to DIN ISO 17025 based on the requirements of the standard.



- Product info
- Setting of all mechanical, pneumatic and electronic functions as well as testing of the software used
- Testing of technical function parameters and adjustment of measuring stations
- Adjustment of measuring stations in the event of deviations from the specified tolerance
- Replacement of typical wear parts
- Cleaning of measuring instruments
- Oiling or greasing of moving parts if required
- Repair of minor faults
- Further information can be found in the current price lists for hand-held and larger measuring systems



Keeping the gage available

Regular maintenance increases the availability of your machine, thus minimizing the risk of bottlenecks due to downtime. Your measuring equipment - whether a hand-held instrument or measuring machine - will be inspected and adjusted at regular intervals according to a defined plan, and wear parts will be replaced if required. A final calibration measurement using traceable reference standards ensures compliance with the national standard. A calibration certificate is issued to document compliance with the specification.

Maintenance and calibration agreement

Take advantage of a maintenance and calibration agreement: With some advance planning we can offer you even more competitive prices. We will also check the due date and arrange a maintenance appointment with you.

Service info

- Maximum measuring accuracy thanks to optimally adjusted equipment and trained operators
- Maximum availability thanks to optimum equipment maintenance
- Optimal value for money and predictable costs thanks to competitive flat rates
- Optimum service by the original manufacturer (ISO TS 16949)
- Optimal customer advice
- Term: minimum 2 years (for machines and measuring stations)
- Cost depends on type of instrument
- Recommended as part of a service agreement (maintenance and calibration)

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CALIBRATION

YOUR GUARANTEE FOR CORRECT MEASUREMENTS



Traceability of measurands

Standards and measuring instruments change over time, for example due to wear or aging. This affects the measuring results.

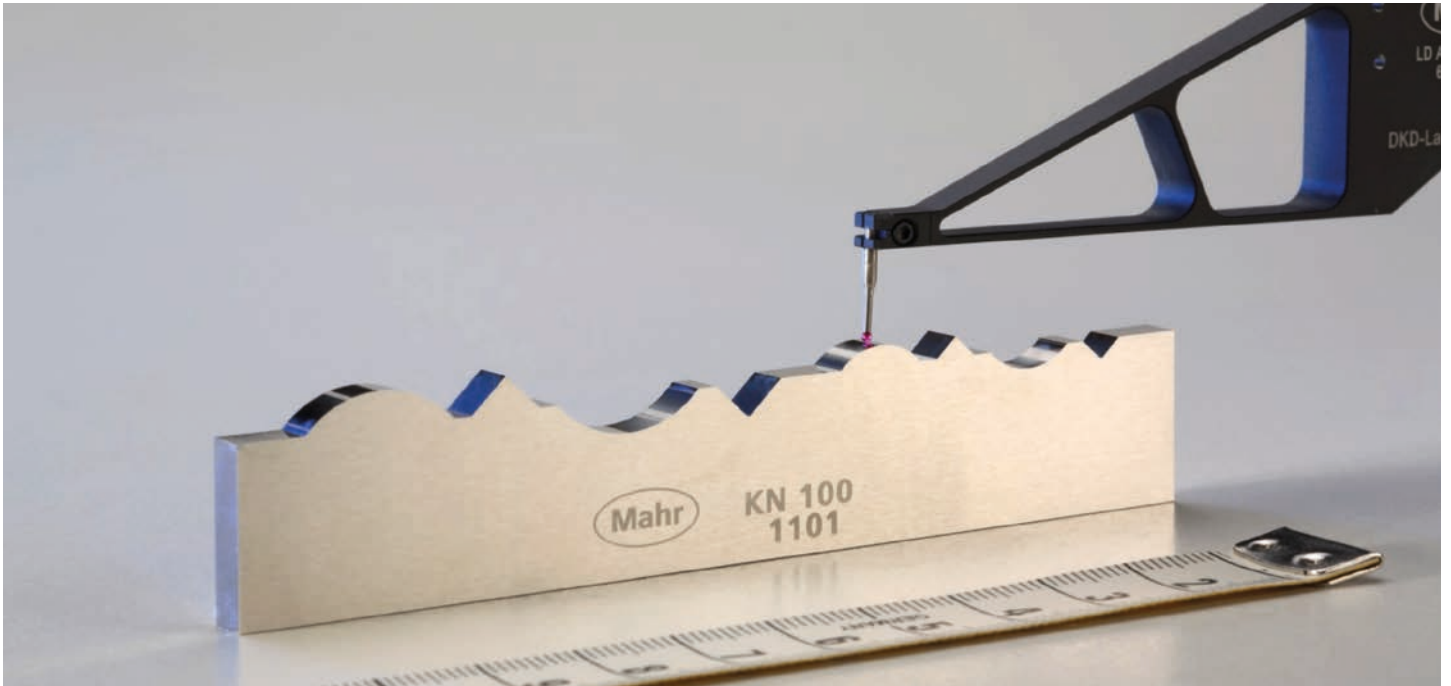
That is why the regular calibration of measuring instruments is not just a standard specification, it is also essential for consistently correct measuring results that can be traced back to national or international standards by way of comparative measurements.

However, calibration is just a snapshot. Information about the behavior of a measuring instrument over time can only be obtained after several calibrations. With this in mind, and allowing for any additional uncertainty factors, measuring results and measuring instruments are reliably traced back between two calibration intervals.



Product information

- First-time or re-calibration of standards using Mahr or DAkkS/DKD calibration certificates
- Traceability to national / international standard (transfer of unit)
- Minimal measurement uncertainties thanks to use of premium measuring instruments
- Short throughput times
- Free assessment of calibratability of standard
- Cost estimates on request – otherwise fixed prices as per current price list



Mahr laboratories

In order to make your machines and standards traceable, MAHR runs four (4) laboratories accredited to ISO 17025 across the world for various length measuring instruments and sizes. These labs ensure high dimensional accuracy and very low measurement uncertainties.

The laboratories specialize in different areas, which means that MAHR can perform traceability for many different dimensions in length and form measuring technology. The results of the calibrations are always traceable and audit-proof certificates. Depending on your requirements, these calibrations are performed to DAkkS (DKD) or factory level. The certificates are recognized worldwide through ILAC (International Laboratory Accreditation Cooperation).

→ Service information

- Stay ahead with regular quality testing
- International recognition of DAkkS/DKD calibration certificates
- Traceability to SI units
- Task-specific monitoring of measuring station in changing ambient conditions
- Customer-specific standards allow testing of measuring station at any time (reduces systematic errors)
- Inspection of entire measuring chain (reliability)

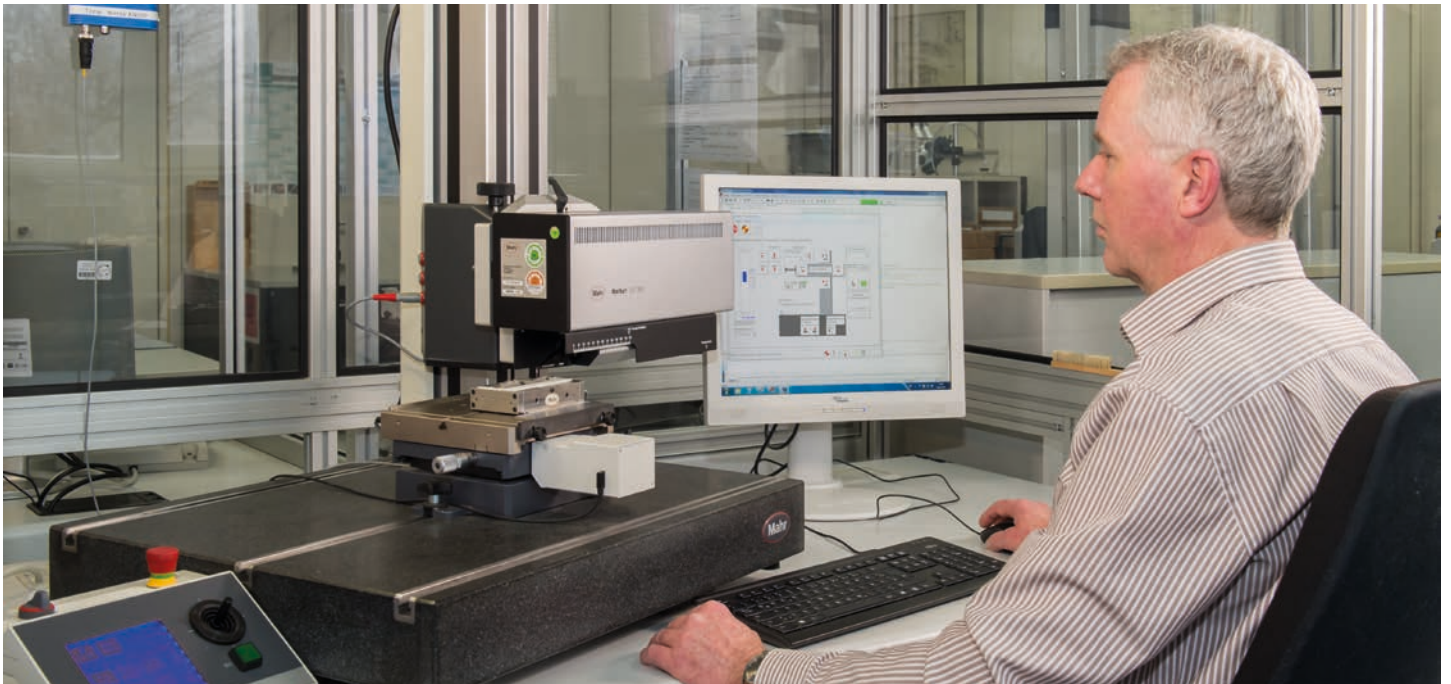
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CALIBRATION

YOUR GUARANTEE FOR CORRECT MEASUREMENTS



On-site calibration

All of our maintenance packages include the calibration of measuring stations and machines. But on-site calibration can also be useful for smaller equipment or hand-held measuring instruments. It is, however, important to weigh up the cost of travel against the scope of the services being provided.

Mahr can calibrate machines by many other manufacturers too. Please ask us for further information.

→ Product information

- Calibration of measuring stations and measuring machines as well as Mahr hand-held measuring instruments with Mahr or DAkkS/DKD calibration certificate
- Calibration of machines by other manufacturers or other gages on request
- Issue of a qualified calibration certificate specifying the measurement uncertainty
- Calibration seal affixed to machine / measuring station
- Fixed prices as per current price list for Mahr instruments



Accuracy means reliability

Every calibration is a snapshot. Information about the behavior of a measuring instrument over time can only be obtained after several calibrations. With this in mind, and allowing for any additional uncertainty factors, measuring results and measuring instruments are reliably traced back between two calibration intervals.



Service information

- Stay ahead with regular quality testing
- Task-specific monitoring of measuring station in changing ambient conditions
- Inspection of entire measuring chain (reliability)
- Traceability of measuring results to national units



More information and video

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MEASURING EQUIPMENT MANAGEMENT

REGULARITY MEANS RELIABILITY



Optimal solution for specific requirements

We can help you set up or maintain a system for managing your gages and measuring equipment. Together with you, we can create or optimize an overall concept customized to the size of your business to ensure maximum transparency and reduced costs.

→ Product information

Manage gage inventories

- Organize internal procedures for maintaining, calibrating and servicing gage inventories
- Software solutions for gage management
- Measuring instruments and software solutions for in-house calibration
- Extensive logistics solutions (e.g. collection service)

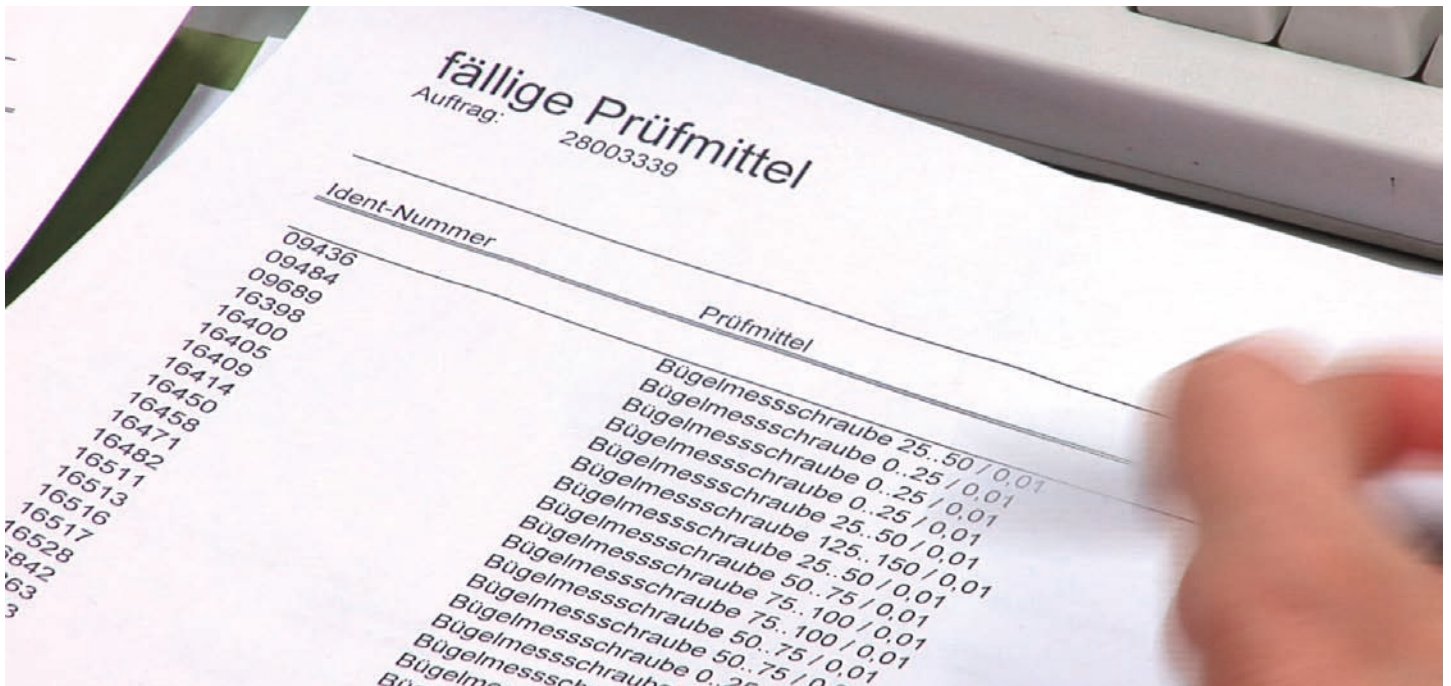
Record gage inventories

- Help with recording gages, measuring equipment and other tools
- Categorizing into gages and tools

- Define appropriate inspection intervals
- Introduction of a quarantine store for measuring equipment to reduce annual calibration costs

Optimize gage inventories

- Dynamize inspection intervals
- Selection of suitable gages
- Evaluation and improvement of test processes
- Decluttering of gage inventories



Gage management with MarSoftCal.WEB software

Our web-based MarSoftCal.WEB gage management system can help you efficiently manage your gage inventory.

You can use MarSoftCal.WEB to send data to and from your laboratory and benefit from all the functions of modern gage monitoring. For example, you can view measuring records, track the history of your gages, storage locations and places of use, usage intervals, manage your calibration service providers, and keep a record of your external and internal calibration orders.

The system is web-based and runs on Mahr's servers, which means you don't need to worry about installation or updates. Furthermore, the latest data about all your gages is at your fingertips. Data from existing gage monitoring systems can usually be integrated into MarSoftCal.WEB.

→ Service information

- Significant reduction in the annual costs of measuring equipment calibration
- Optimize gage management and servicing processes
- Reduces time required by up to 70 % by using Mahr's state-of-the-art gage software
- One integrated process for calibration and repair
- Safe transport / secure packaging
- Guaranteed traceability to national / international standards
- Audit-proof certificates

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SUBCONTRACT MEASUREMENTS

USE THE POSSIBILITIES OFFERED BY MAHR AS EXTRA CAPACITY



From individual to serial parts

It doesn't always make sense to invest in new measuring machines. If you are experiencing bottlenecks or have occasional and extraordinary measuring tasks, you can entrust these to Mahr.

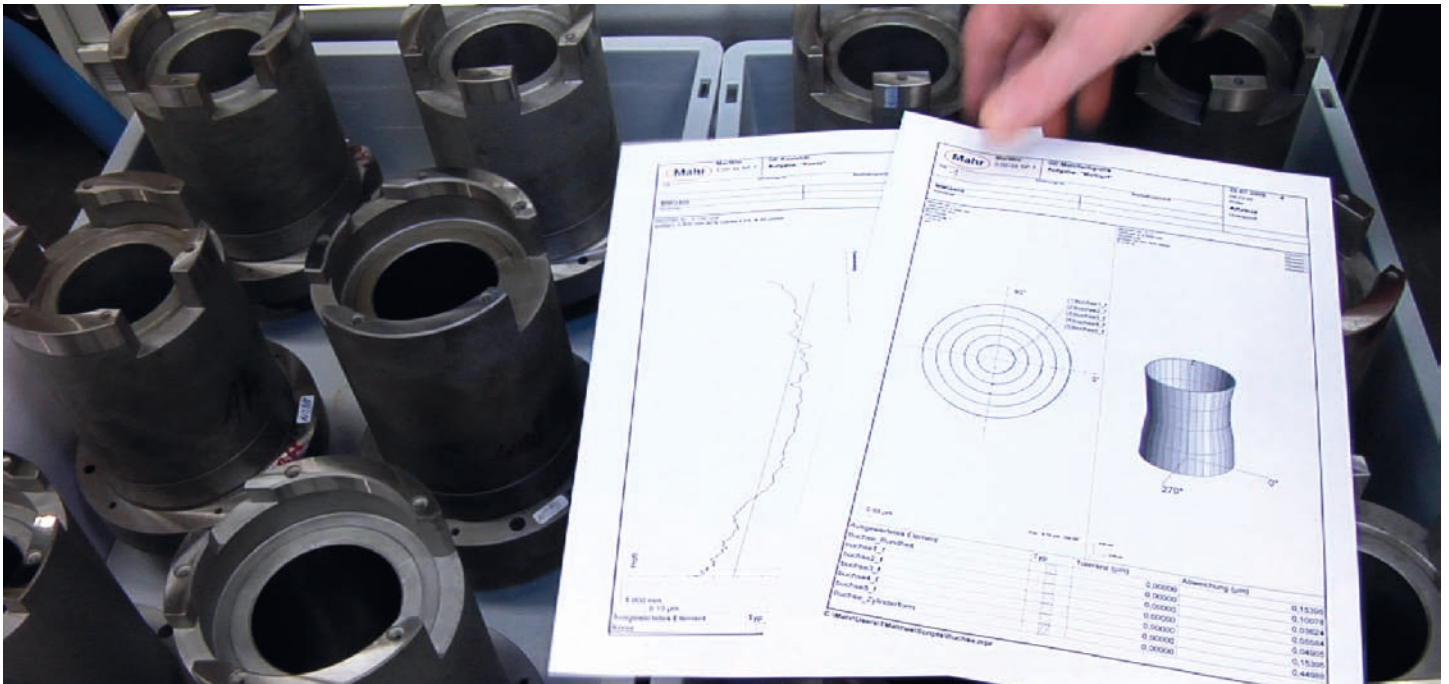
We also offer subcontract services and can carry out all types of subcontract measurements using length and form measuring technology.

Whether an individual or serial part, we can coordinate and handle sample orders at our own laboratories or through our cooperation partners depending on the measuring task and the accuracy required.



Product information

- Extensive measuring tasks in the fields of:
 - Tactile coordinate measurement
 - Optical coordinate measurement
 - Surface measurement (roughness)
 - Contour measurement
 - Form metrology
 - Precision length measurement
- VDA sample measuring records or machine logs
- Performed by laboratories accredited to DIN ISO 17025
- Prices based on current hourly rates



With a professional measuring record

After sample inspection of your workpieces you will receive a professional measuring record which you can then use to control production or refer to if any inspections should be required.

→ Service information

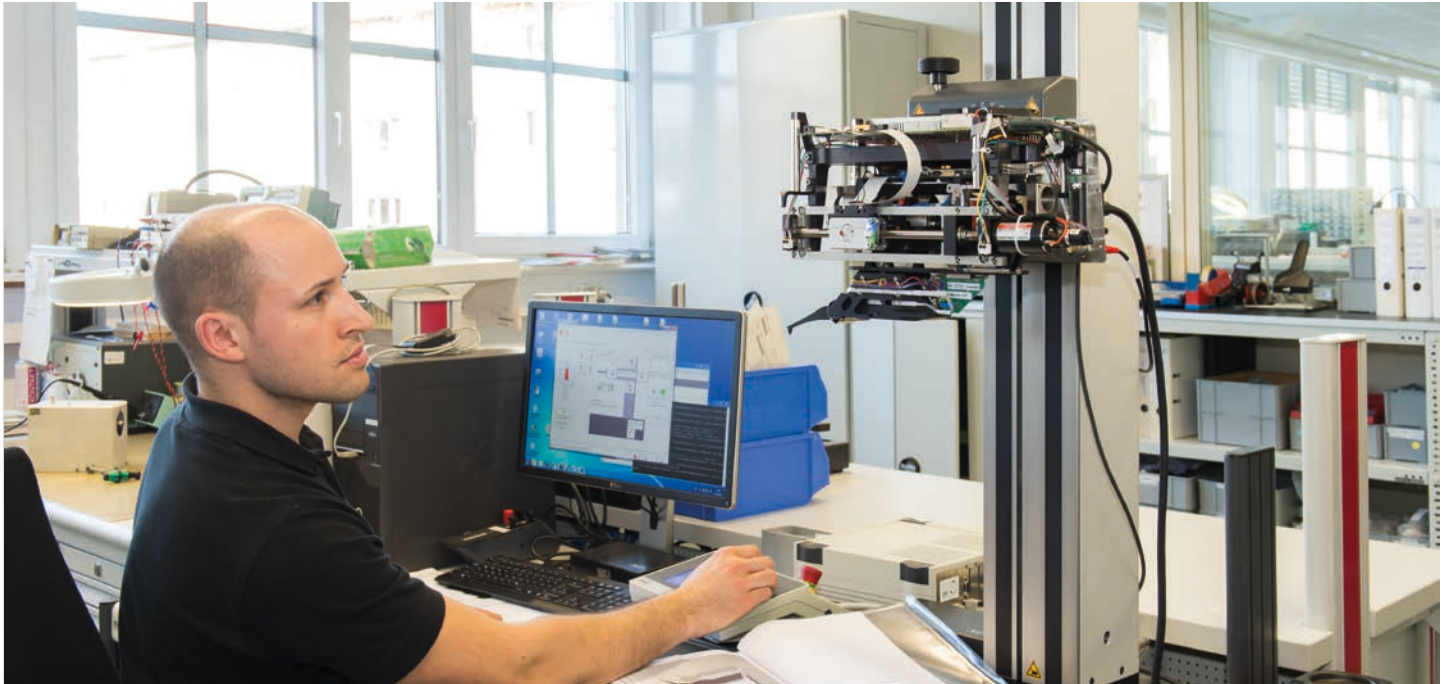
- Measurement of
 - workpieces
 - prototypes
 - first batches including documentation (sampling)
- Help when your measuring capacities are overloaded
- Highly reliable thanks to minimal measurement uncertainty
- Focus on your core competencies
- Mahr provides both precise measuring machinery and trained staff for subcontract measurements

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REPAIR WHEN NEEDS MUST



For all components, systems and hand-held measuring instruments

It goes without saying that Mahr offers repairs for all components, systems and hand-held measuring instruments. Wear parts are properly disposed of when they are worn out.

All the spare parts we use for repairs are optimally suited to the respective instrument type. They fit perfectly and can be quickly installed by our experts.

Refurbished replacement instruments are also available at a fixed price for various products, offering a cost-effective and quick alternative to a repair.

As well as our own brand products, we can also repair hand-held measuring instruments by other well-known manufacturers of length measuring technology. We are your one-stop shop for services pertaining to all hand-held measuring instruments.



Product information

- Repairs are carried out in accordance with defined Mahr procedures
- Only original spare parts approved by Mahr's R&D department are used
- Repairs invoiced on T&M basis
- Refurbished replacement instruments at fixed prices on request
- Optional calibration after every repair
- 12 month warranty on the service provided and replaced parts; 12 month warranty on whole instrument for replacement instruments



Repairs by Mahr

When your Mahr instrument is repaired by the original manufacturer, it is in the best hands. Using original spare parts and state-of-the-art repair methods carried out by experienced and regularly trained experts ensures maximum reliability when it comes to restoring the performance of the measuring instrument.

Important to know:

Essentially every instrument can be repaired regardless of costs or product liability. However, compliance with the engineering specifications should always be borne in mind when making your decision. In some cases, it might be wiser to buy a new product rather than repair an old one.

→ Service information

- Best value for money by the original manufacturer
- State-of-the-art repair techniques, carried out by trained and optimally equipped experts
- Maximum reliability when it comes to restoring performance of the measuring instrument
- Optimal value retention of measuring equipment

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SPARE PARTS SERVICE

YOU CAN'T BEAT THE ORIGINAL



Quality, safety, reliability

Whether a replacement is required because of wear or for any other reason: Mahr original parts offer exceptional quality, tested safety and high reliability. They have been designed especially for your measuring device and are, therefore, the first choice for your measuring station in terms of their fit, measuring accuracy and value retention. The durability and the excellent value for money also make Mahr original parts particularly cost-effective.



Product information

- Quality guarantee
 - Guaranteed compliance with the original specifications
 - Unrivalled precision in assembly
 - Always at the cutting edge of technology
- eShop for hand-held measuring instruments
- Pre-assembled components and spare parts kits, specially for customer-specific measuring devices
- 12 month warranty



Decades of experience

All the components of a Mahr measuring machine are coordinated to the finest detail. The materials used have been developed on the basis of our many decades of experience. Replicas, therefore, pose a potential risk to your instrument. To ensure maximum reliability and optimal performance, we recommend using only original Mahr parts in your machine.



Service information

- Best value for money by the original manufacturer
- Spare parts even when the series has been discontinued
- Long-term cost effectiveness
- Highly durable



More information and video

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EXCHANGE SERVICE

THE PREFERRED FIXED-PRICE OVERHAUL



Reducing downtime

Even measuring instruments wear out or need repairs. To reduce the associated downtime, Mahr offers an exchange service for certain instruments.

We stock selected, refurbished instruments and components in our exchange pool, helping you to reduce repair time. This keeps your downtime to a minimum.

→ Product information

- Selected refurbished instruments and components available for delivery ex stock
- As good as new
- Certain measuring equipment can be re-coated
- 12 month warranty
- Fixed price as per current price list



More reliability

Our exchange instruments come with a 12 month warranty. This reduces the risk for you because this warranty applies to the whole instrument and not just the replaced parts as in the case of a repair.

Devices for which you can choose between repair or exchange are indicated by an exchange symbol in the price list. Provided you do not exclude the "exchange" option in your order, we will opt for an exchange over a repair.



Service information

- Short waiting times
- Downtime is reduced to an absolute minimum
- No risk thanks to full warranty on the entire product



More information and video

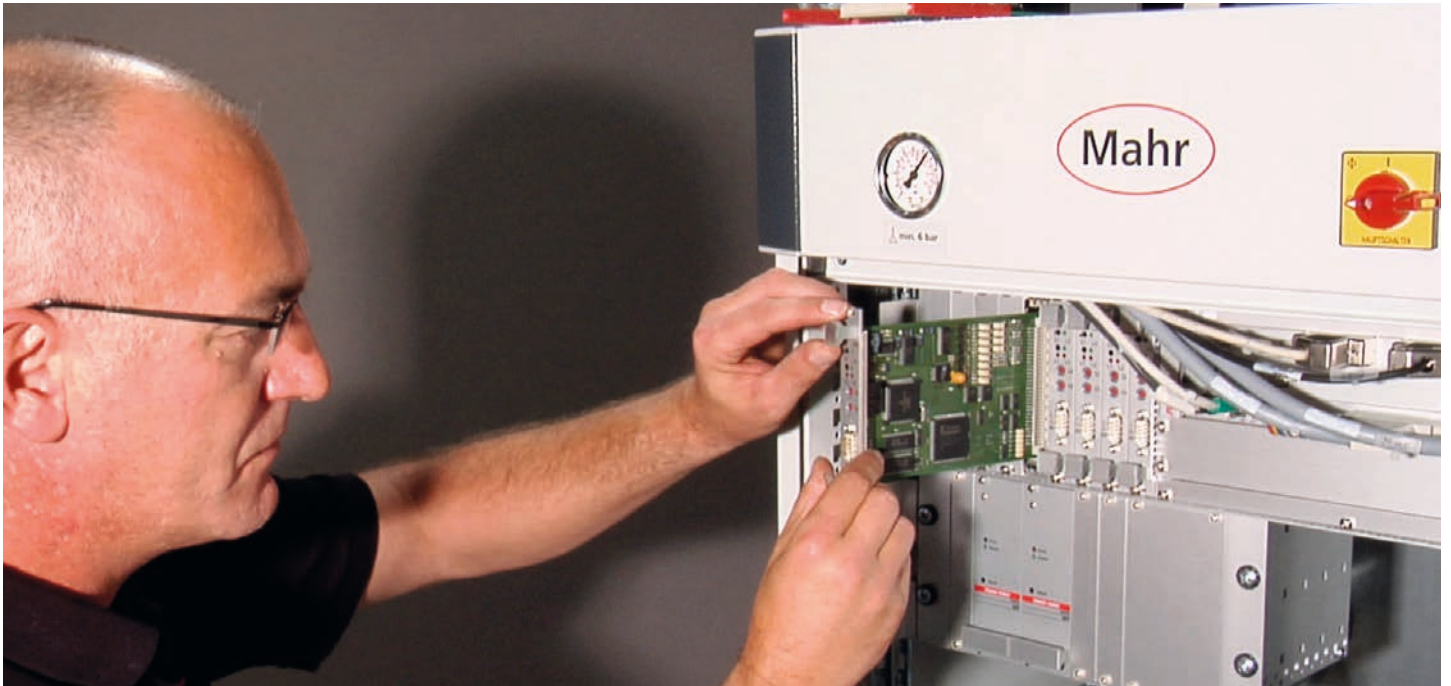
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MODERNIZATION RETAIN THE VALUE OF THE GAGE



Retain the value of the measuring equipment

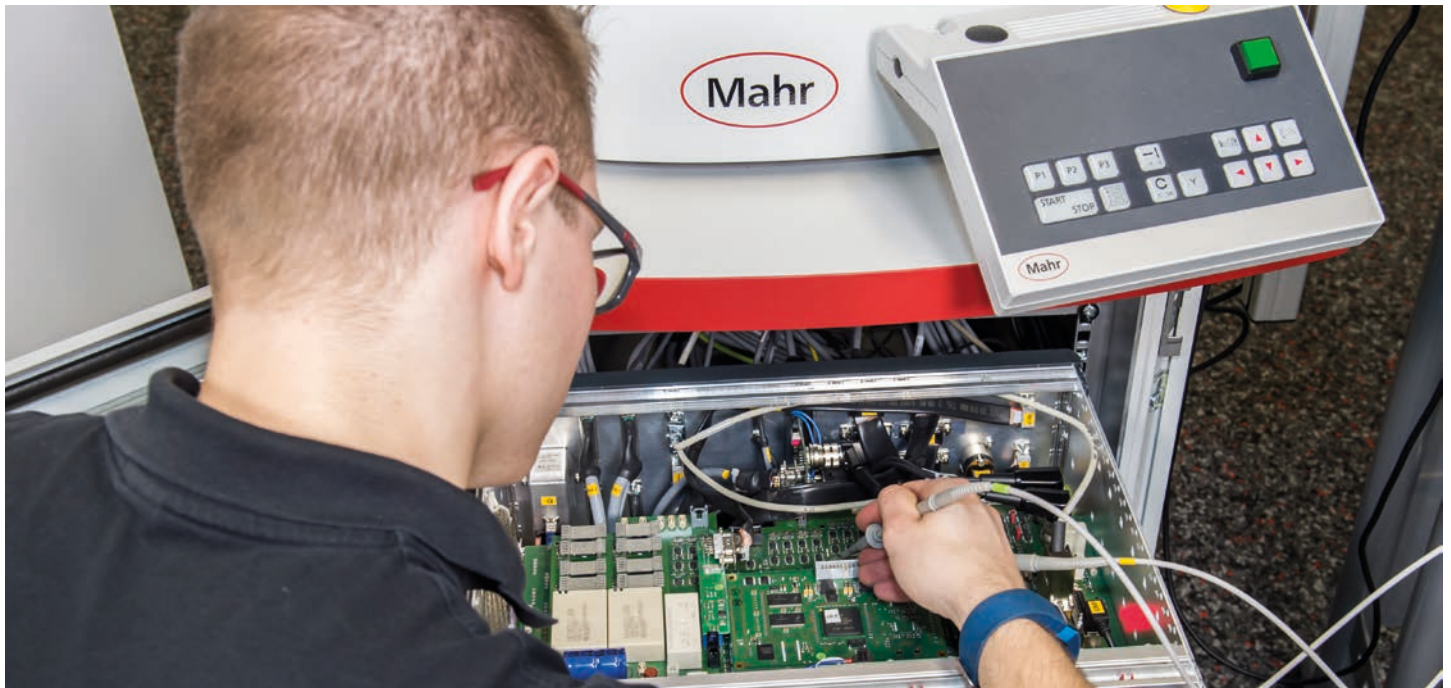
Ongoing technical developments mean that measuring equipment essentially becomes obsolete over time. It is, therefore, always worth considering modernizing the measuring instruments to retain the value of the equipment.

The simplest solution is to continuously update the software you use - Mahr regularly issues updates and upgrades. Upgrading the machine's hardware might also be recommended in due course to maintain or improve performance.



Product information

- Continuous software maintenance (software updates and upgrades)
- Hardware upgrades, if it makes economic sense
- Modernization at your premises or in Mahr's plant depending on the measuring equipment
- Software updates via the Mahr download server



Software and hardware upgrade

Not every piece of measuring equipment available from Mahr lends itself to modernization without reservation. For most hand-held measuring instruments, refurbishment or a product replacement is more practical than a comprehensive hardware upgrade.

With Mahr's complex measuring machines, which typically require significant capital expenditure, software and hardware upgrades are worth considering from the outset. This will ensure the machine's performance and retention of value.



Service information

- Maintains the performance of the measuring equipment
- Retains the value of the measuring station
- Ensures optimal support from Mahr
- Keeps you competitive



More info

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PRODUCT REPLACEMENT

ALWAYS THE BEST BY THE LEADING INNOVATOR



Stay "state of the art"

The precision engineering of Mahr measuring instruments is legendary and virtually indestructible. Electronics and software, however, typically have short innovation cycles. Occasional modernization is, therefore, inevitable and is a service offered by Mahr.

→ Product information

- Trade in your old instrument at attractive conditions
- No disruption to operations thanks to direct exchange of measuring equipment
- High handling consistency thanks to preservation of established Mahr philosophy
- 24 months warranty on new instruments



Keeping you competitive

There comes a time when technology has moved on to such an extent that it does not make economic sense to repair the old equipment. That's when it's time to invest in a new Mahr product.

→ Service information

- Optimized manufacturing and test processes using state-of-the-art dimensional metrology
- Guarantees and continuously improves product quality
- Maintains competitiveness

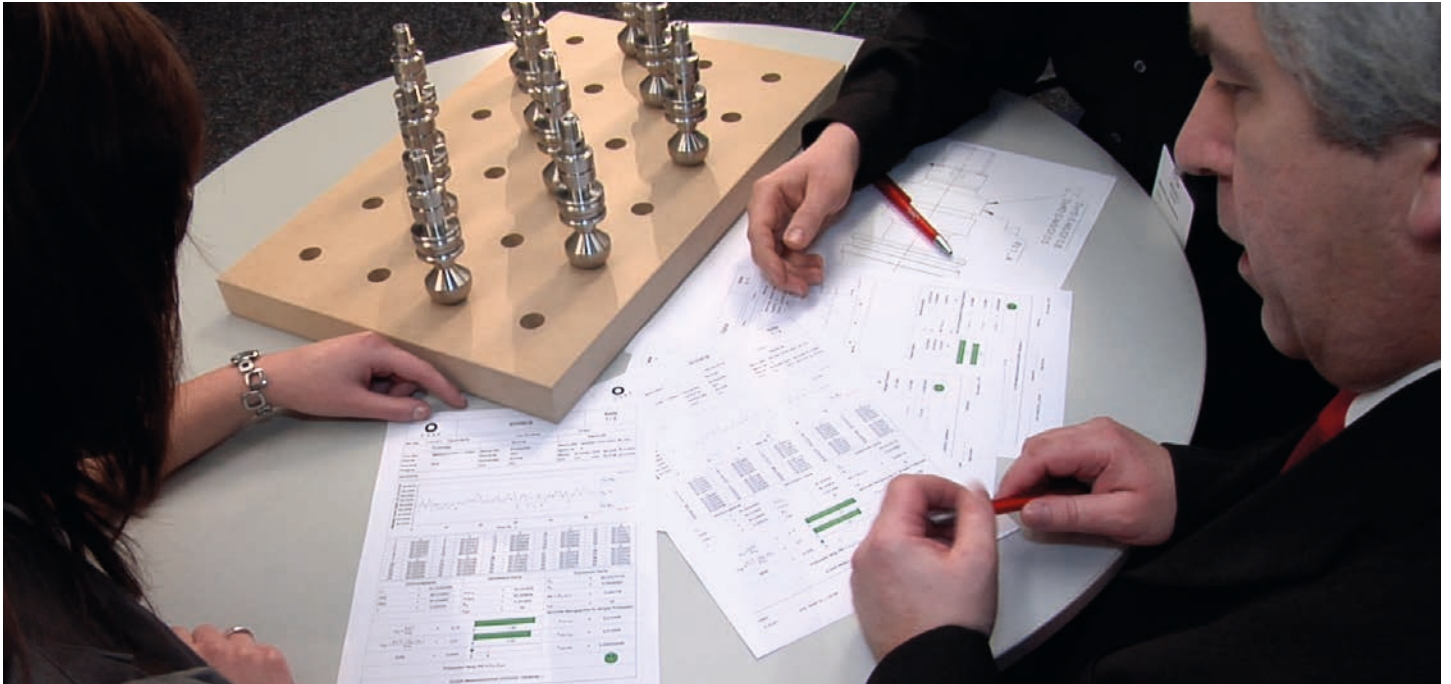
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CONSULTING

FOR ALL YOUR METROLOGY QUESTIONS



Top experts at your side

The range of consulting services that Mahr offers is diverse and grows steadily with each project we complete.

Whether you're looking for a specification for an inspection room, optimal measuring strategies or are choosing the most suitable measuring equipment for measuring tasks in a manufacturing environment, take advantage of Mahr's consultancy services.



Product information

- Many years of relevant consultancy experience in dimensional metrology
- Advice from top experts in application engineering or Mahr's accredited calibration laboratories
- Create programs for your measuring requirements
- Capability tests
- Suitable packages on request



Finding solutions

Whether you need help finding solutions to measuring tasks or want to create measuring programs for complex workpieces, our experts are available to share their knowledge and many years of experience in dimensional metrology.

→ Service information

- Focus on your core tasks
- Delegate complex measuring tasks to Mahr
- Access a formidable network of expertise
- Optimal solutions in a minimum of time

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TRAINING

AN IMPORTANT PART OF THE SOLUTION



Mahr Academy teaches technical skills

Besides the many product training sessions run at the first level by Mahr's service technicians, and if necessary by Mahr's application engineers at more advanced levels, the Mahr Academy also runs courses in the basic principles of measuring technology.

Product training courses support the desire of many users to acquire an in-depth knowledge and understanding of all the possibilities offered by superior measuring systems, from basic operation to programming and data export under Mahr's guidance, so that they will be able perform even more effective and precise measurements in future. In particular, MarWin, the standardized measuring language for all new Mahr products, offers excellent opportunities in this respect.

Technical seminars make measurements more reliable and help users correctly interpret technical drawings.

→ Product information

- Practical product training, Level 1, conducted by Mahr service technicians following commissioning/ acceptance, standardized using a training workpiece
- Practical product training, Level 2 or Level 3, conducted by a Mahr application engineer in consultation with you
- Open or closed seminar by Mahr Academy as per current seminar program
- AUKOM courses in cooperation with the Technical Academy Wuppertal; (AUKOM stands for "Ausbildung Koordinatenmesstechnik" = training in coordinate measurement)
- Training for up to three participants per measuring station
- Prices as per current price list or on request



Seminars at Mahr Academy

We now offer training sessions and complete courses not just for metrologists, but also for prospective quality supervisors and authorized measuring instrument representatives. The areas we cover:

- Quality and measuring equipment management
- Practical application of dimensional metrology
- New DIN/ISO/GPS standards
- AUKOM basic training course

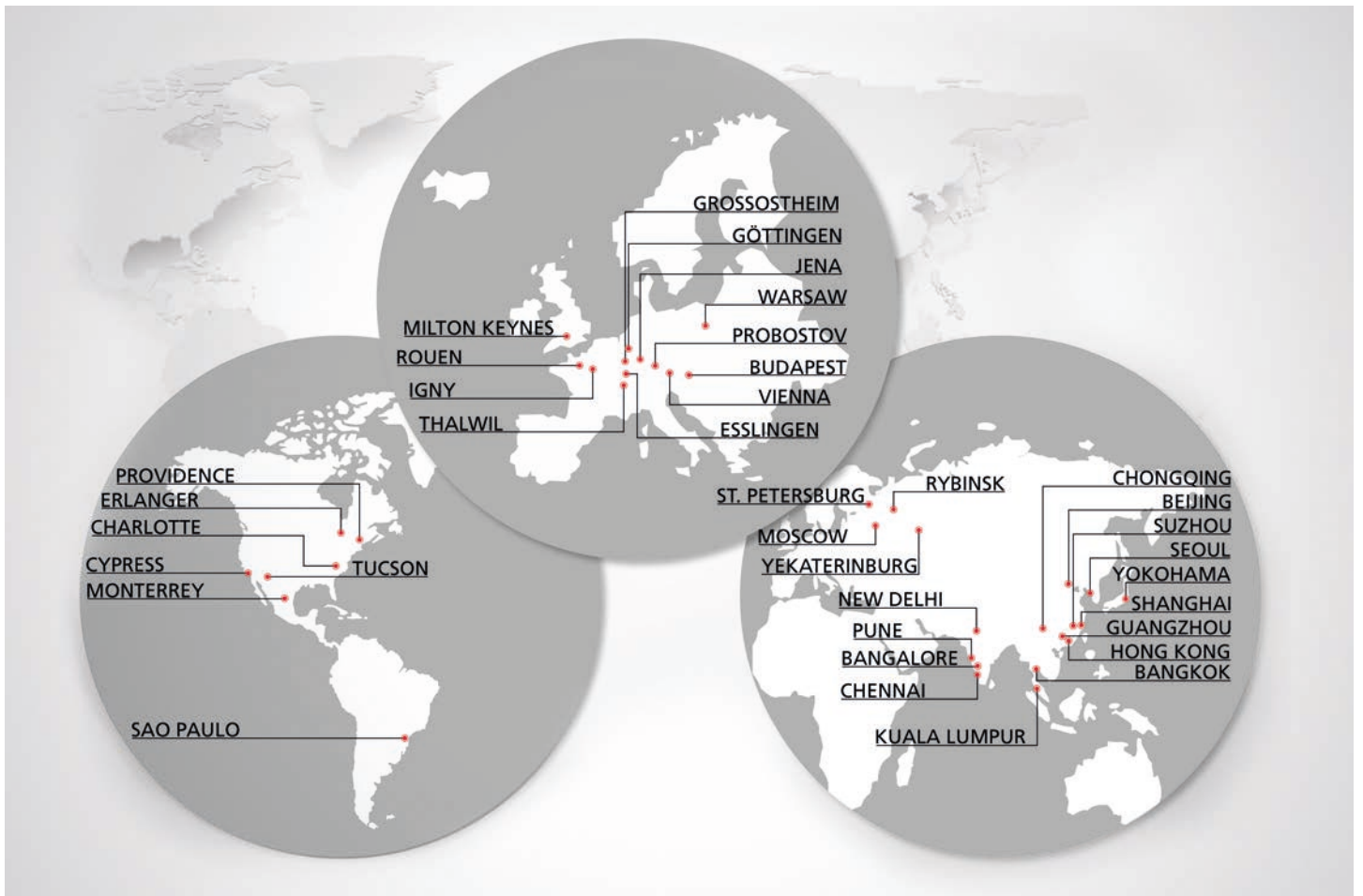
We offer and organize these advanced training courses in conjunction with the Technical Academy Wuppertal (TAW), which not only monitors the quality of the seminars run by the Mahr Academy, but also allows you, the course participant, to receive accepted certificates of training. Mahr is a certified partner of AUKOM e. V. for Level 1 and Level 2 training courses.

→ Service information

- Optimal handling of measuring equipment
- Understand measuring strategies and measure in compliance with standards
- Increase productivity and improve competitiveness
- Bring knowledge and expertise into your company and thereby increase staff motivation and loyalty

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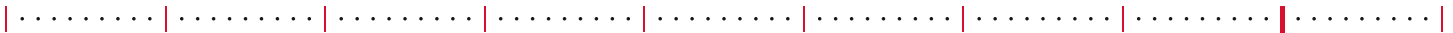


Partner to production plants worldwide.

CLOSE to our customers.

Got QUESTIONS? Want more INFORMATION?

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