Innovations 2024

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Your solution for measuring the contours of **individual workpieces**

With its flexible clamp stand, the new MarSurf CD 140 AF contour measuring machine can measure both standardized and individual workpieces. This enables you to achieve simple and reliable quality assurance with easy handling.

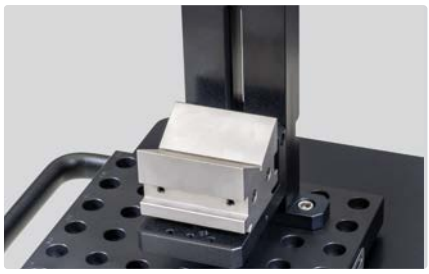
The new MarSurf CD 140 AF contour measuring machine delivers fast and precise measurements. It boasts a flexible workpiece holder, which makes it particularly easy to handle. The intelligent probe system and magnetic stylus tip holder ensure the process to replace stylus tips without any tools is the most straightforward process to date. Thanks to the flexible clamp stand, both standardized and individual testpieces can be measured with ease.

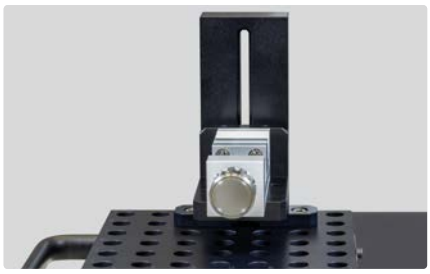
Advantages

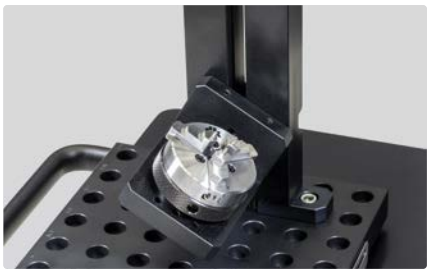
- Comprehensive contour measurement functions – fast and simple
- Replacement of the stylus tip without any tools
- Travel speed in the X-axis of up to 200 mm/s
- Simple program creation or individual measurement using MarWin
- Automatic evaluation, best adjustment of contours, CAD contour comparison, and a lot more
- Flexible support plate with 25 mm bore grid for KMG workpiece holders etc.
- Height-adjustable clamp stand for flexible use of workpiece holders and easy arrangement of workpieces in the correct measuring position
- Optionally expandable with the option of roughness measurements (Rz >2 µm)
- Measurement with double stylus

Height-adjustable clamp stand

The flexibly adjustable clamp stand enables the use of standardized clamps and individual workpiece holders.



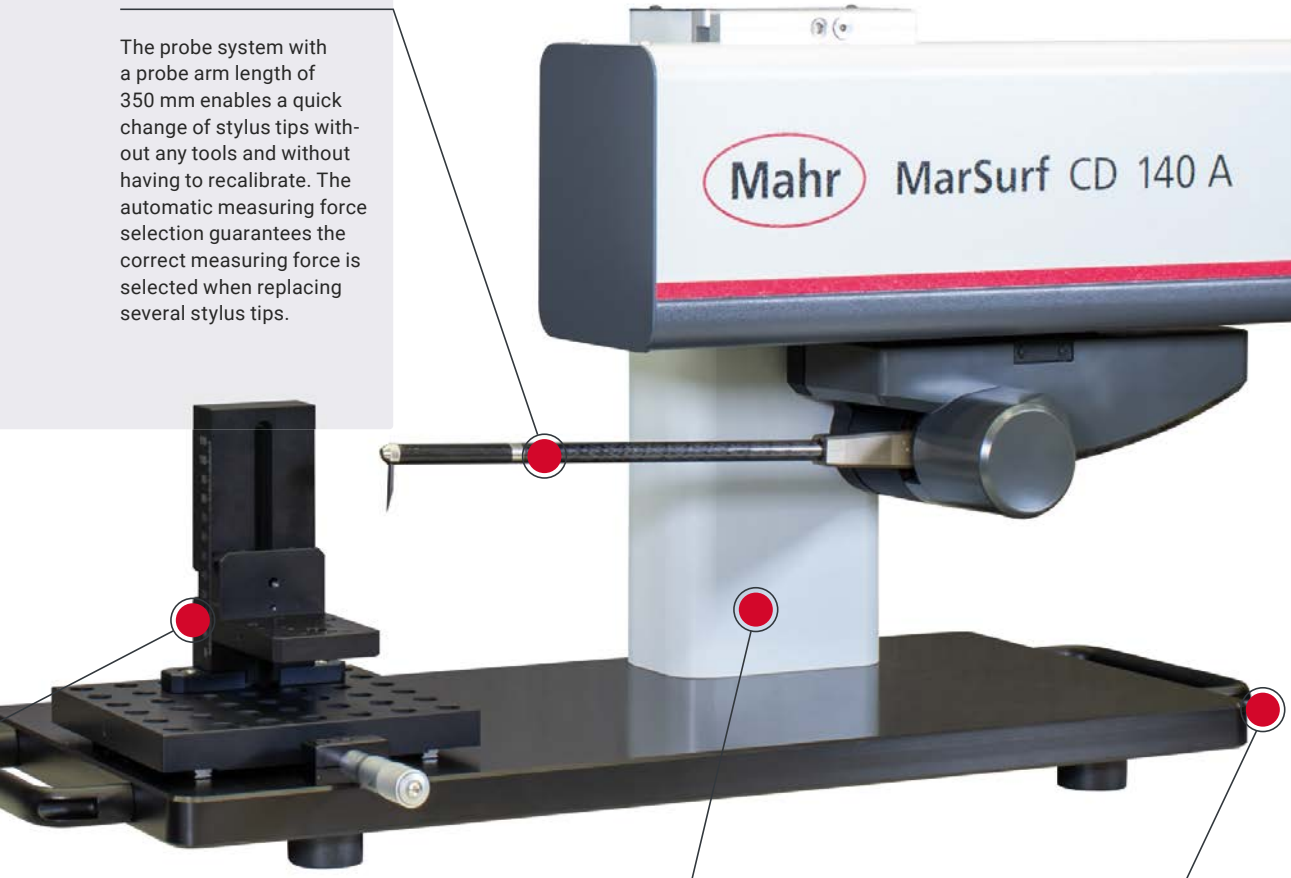




In combination with standardized clamping devices, the clamp stand enables flexible positioning of your testpiece.

Unique probe system

The probe system with a probe arm length of 350 mm enables a quick change of stylus tips without any tools and without having to recalibrate. The automatic measuring force selection guarantees the correct measuring force is selected when replacing several stylus tips.



X-axis with maximum measuring range

The high-speed X-axis is designed for a large measuring range of 140 mm.

Ergonomic carrying handles

The handles on the side make it easy to transport the device.

MarSurf CD 140 AF

Contour measuring station

FEATURES

MarSurf CD 140 AF - Space-optimized measuring station for production

With the new MarSurf CD 140 AF, Mahr has launched a new contour measuring device onto the market. Its probe system has a measuring range of up to 70 mm, with which the probe tips can be changed quickly and without tools – and all without recalibration.

MarSurf CD 140 AF makes fast and precise measurements possible. Thanks to its flexible workpiece holder, it is particularly easy to handle and impresses with its great versatility.

Innovative technologies:

Fast axes

- High-speed measuring X-axis with 140 mm measuring range
- Positioning speeds up to 200 mm/s
- Reliable measurements thanks to once adjusted measuring setup
- Integrated, manual 25 mm TY axis

Unique probing system

- Tool-free, quick change of probe tips saves time when changing to another measurement task --> no recalibration required
- Magnetic probe tip holder
- Measuring range up to 70 mm as standard
- Automatic probe force selection guarantees the correct sensing force when switching between several probes
- Very low measuring force from 4 mN enables the use of particularly “filigree” probes, e.g. for small bores.
- Optional: Extension for roughness value determination

Innovative workpiece clamping system

- Flexible mounting plate with 25 mm bore grid
- The combination of mounting plate and integrated 25 mm TY adjustment eliminates the need for an additional XY table
- Low workpiece design supports an advantageous short measuring loop, which has a positive effect on the measurement results

TECHNICAL DATA

Order no.		6269051	6269052	6269053	6269054
Type		CD 140 AF			
Versions		without PC	with PC	without PC, with roughness option	with PC and roughness option
Probe measuring range	mm	70,0			
Table axis travel (TY)	mm	25			
Straightness deviation		0.8 µm / 60 mm, 1.00 µm / 130 mm			
Measuring force	N	4 mN to 30 mN, software adjustable			
Measuring speed		0.1 mm/s to 10 mm/s			
Positioning speed		X: 0.1 mm/s to 200 mm/s			
Probe		Contour tracing system			
Dimensions H x W x D	mm	(D x W x H) 385 x 836 x 426			
Other		machine weight: 35 kg			

- The clamping device stand enables the flexible use of workpiece holders and easy positioning of workpieces in the correct measuring position.

ACCESSORIES

Order no.	Type	Description
6820023	50 mm	Precision three-jaw chuck
6820024	35 mm	Precision vise
6820020	DK	Case of DK fixtures
6820021	Alufix 25–50	Quick release bracket with adapter plate
6820022	+90°/–55°	Quick release bracket swivel unit
6820026	4 –50 mm	Spring compressor with attachment for Vee block
6820027	45°	Quick release bracket angle element
6710631	32 mm	Parallel vice
6710401	PP	V-block

Measure roughness **in the machine tool**

Mahr now offers an innovative automated solution for measuring surface roughness on workpieces directly in the CNC manufacturing machine. For this purpose, the MarSurf MC 510 measuring instrument is completely integrated into the tool holder, where it measures using a vibration-resistant, tactile skidless probe system - in accordance with standards and with high precision down to Rz 1 µm.

The MarSurf MC 510 is quickly and conveniently available in the machine tool: If a roughness measurement is to be carried out, the machine tool automatically inserts the measuring instrument from the tool magazine into the spindle like a regular machine tool. Various tool holders are available as interfaces, including types SK 40 and HSK-A 63. As soon as the measuring instrument is ready, the user can easily align it using the software-controlled, flexible swivel joint. The measuring movement is carried out by the integrated feed drive, with the CNC machine positioning the device at the measuring point.

The MarSurf MC 510 is powered independently of the machine tool as it has a powerful rechargeable battery: Up to 200 measurements are possible per battery charge. This makes the device ideal for automated production processes - regardless of the machine or control system. All in all, the MarSurf MC 510 offers reproducible measuring conditions that are reliable, flexible and efficient without operator influence.

Integrated rechargeable battery

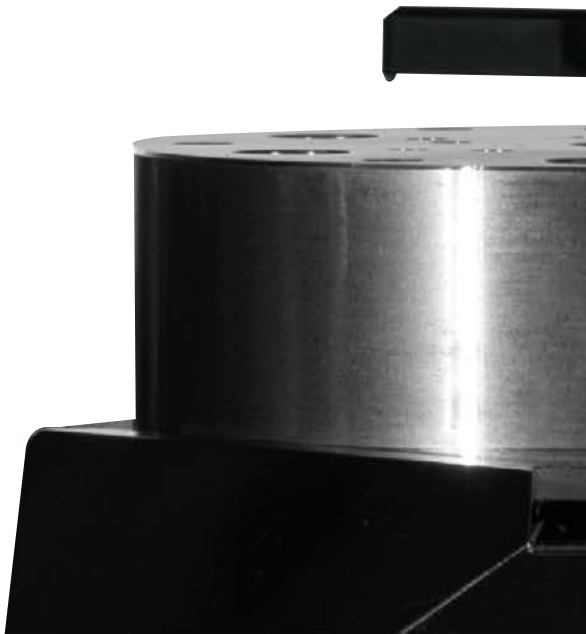
The powerful rechargeable battery for independent power supply can be conveniently charged outside the machine tool.

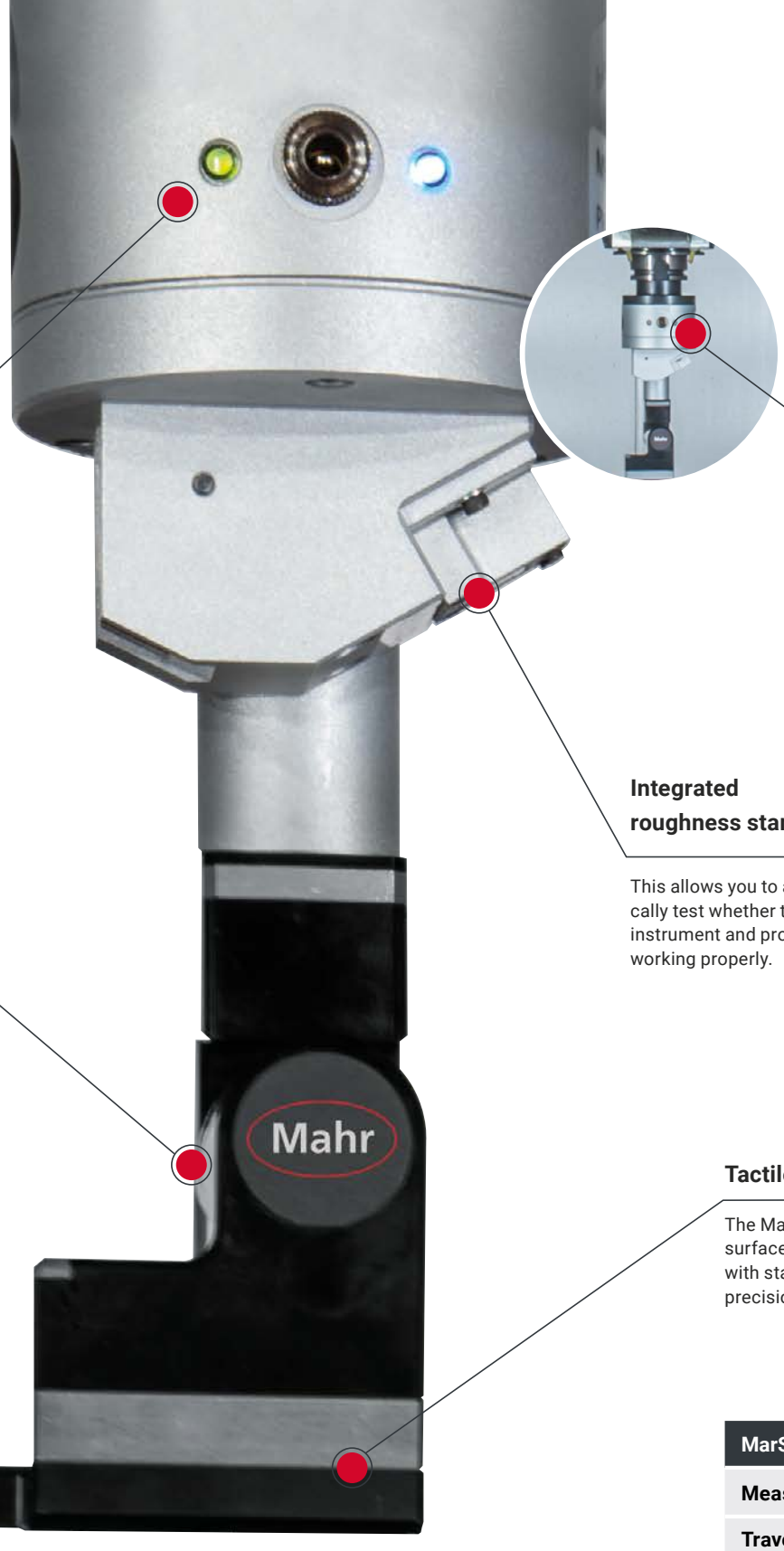
Swivel joint

Use the swivel joint to align the MarSurf MC 510 for fine positioning, contacting, checking or parking.

Advantages

- Automated process for fast measurement of surface parameters
- Precisely reproducible measurements without operator influence
- Indication of tool wear and thus reduction of tool costs
- Protected against dirt thanks to robust design
- Flexible production processes thanks to direct control and measuring data output in NC code
- Wireless communication with Edge PC
- OPC UA interface and closed-loop-ready
- Fully automatic and reliable documentation of surface parameters without expert knowledge





Quick installation

Thanks to the holder for the tool spindle and tool changer, you can integrate the measuring instrument quickly and easily into your machine tool.

Integrated roughness standard

This allows you to automatically test whether the measuring instrument and probe arm are still working properly.

Tactile measuring unit

The MarSurf MC 510 measures surface roughness in accordance with standards and with high precision.

MarSurf MC 510	
Measuring principle	Tactile skidless probe system
Traversing length	≤ 15 mm
Stylus tip radius	2 µm; 5 µm
Measuring range	500 µm; 1,000 µm
Number of measurements per battery charge	max. 200
Ports	OPC UA, TCP/IP

MarSurf MC 510

Mobile surface measuring instrument

FEATURES

Measuring roughness in the machine tool

- Mahr now offers an innovative automated solution for measuring surface roughness on workpieces directly in the CNC production machine. The MarSurf MC 510 measuring device is fully integrated into the tool holder, where it uses a vibration-resistant, tactile free probe system to measure – in compliance with standards and with high precision down to Rz 1 µm.
- The MarSurf MC 510 is quickly and conveniently available in the machine tool: If a roughness measurement is required, the machine tool automatically inserts the measuring device from the tool magazine into the spindle like a regular processing tool.
- Various tool holders are available as interfaces, including types SK 40 and HSK-A 63. As soon as the measuring device is ready, the operator can easily position it using the software-controlled, flexible swivel joint.
- The measuring movement is carried out by the integrated feed drive, with the CNC machine positioning the device at the measuring point.
- The MarSurf MC 510 is powered independently of the processing machine as it has a powerful rechargeable battery: Up to 200 measurements are possible per battery charge.
- This makes the device ideal for automated production processes – regardless of the machine and control system.
- All in all, the MarSurf MC 510 offers reproducible measuring conditions without operator influence - reliable, flexible and efficient.

- **Package contents:**
  MarSurf MC 510 with tool holder SK40

TECHNICAL DATA

Order no.		6910510	6910511	6910512	6910513	6910514
Type		MarSurf MC 510 with tool holder BT40				
Tool holder		HSK-A63	SK40	BT40	Capto	without
Traversing lengths		15 mm				
Probe measuring range	mm	1.0				
Measuring principle		Tactile skidless probe system				
Filter according to ISO/JIS		EN DIN ISO 4287, EN DIN ISO 13565, Part 1 and 2, DIN EN ISO 21920–2: 2021, EN DIN ISO 16610–21 (Gaussian filter), EN DIN ISO 13565 Part 1 (specific filters), EN DIN ISO 16610–31 (robust Gaussian filter)				
Measuring speed		0.1 –2 mm/s				
Surface parameters		Rt, Ra, Rq, Rz, Rp, Rv, Rsk, Rku, Rsm, Rc, Rpc, Rdq, Rmax, Rlq, Rda, Rla, Pt, Rk, Mr1, Mr2, Rpk, Rvk, Rpkx, Rvkx, a1, a2, Wt, Wa, Wca, Wq, Wz, Wp, Wv, Wsk, Wku, Wdq, Wmax, Wlq, Wda, Wla, Rmr30, Rmr60, Rmr90, sSt(g), sSt(f), Wsa(1–5), Wa0.8_O5, Wa0.8_O6, Wa0.8_O7, Wa0.8_O8, Wa0.8_O9, Rpq, Rmq, Rvq, Pmr60				
Storage capacity		Number of measuring programs > 1000				
Weight drive unit		1700 g incl. tool holder				
Other		Range of movement: 1-axis manipulator arm: tilting axis, tilting axis 330°, angle resolution 0.01°, smallest adjustable angle change 0.01°, time for 180° swivel ≤ 7 s, control and evaluation system (standard): IPC, Interfaces: OPCUA, TCP/IP				

A variety of products for **numerous industries**

For more than 160 years the name “Mahr” has stood for modern technology, maximum precision and pioneering inventions. Today, the Mahr Group is a global operation, supporting customers in a wide range of industrial segments. A long-term focus is key to reliable, high-quality products, and sustainable customer relations. Close cooperation with our customers leads to a comprehensive understanding of the special requirements and technical challenges associated with these industries.

7
Industries

Whether in the automotive industry, medicine, new energies, or even aerospace – Mahr metrology is used all over the world.

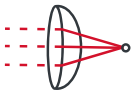

Automotive

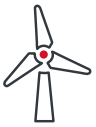

Aviation


Electronics


Machines & Tools


Medical


Optics


New energies

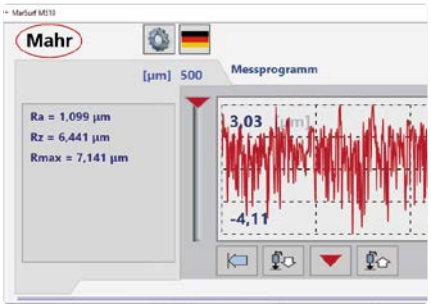
More than
20
product groups

Whatever the measuring task you are facing, the right measuring technology will help you tackle the most complex applications. Take advantage of Mahr’s full range of measuring technology: We have everything you need in over 20 different product groups, from manual calipers to customized fully-automated, robot-controlled measuring stations.

For over
160 years
of the highest quality by Mahr

Small measuring instrument for a **wide range of applications**

With the MarSurf M 510-15/510-50/510-75, Mahr presents a new mobile surface measuring instrument that impresses with its lightness and maneuverability. The compact all-rounder, which features a tactile skidless probe system, is available in three measuring lengths. So you can be sure that you will always find the right measuring instrument for your individual applications.



The user interface of the software ensures that the measured values can be read quickly.

The MarSurf M 510-15/510-50/510-75 offers a measuring range of 1 mm with three variants in measuring lengths of 15 mm, 50 mm and 75 mm. You can use it to reliably and precisely determine the roughness and waviness of technical surfaces of all types of workpiece, such as shafts, camshafts, vent sealing lips, cylinder bores and metal sheets. You can easily install and set up the device yourself, as Mahr delivers it fully configured.

Other features ensure that the MarSurf M 510-15/510-50/510-75 can be used for a wide range of applications. Thanks to its vibration resistance, you can use the device in production environments or in machining centers without any problems. The motorized lifting and lowering of the stylus tip makes it a reliable and flexible companion for measuring surfaces. Another particularly practical feature is that it affixes to ferro-metallic surfaces thanks to the optional magnetic fixture, allowing you to position and fix it as you wish.

Measuring in accordance with standards

The MarSurf M 510-15/510-50/510-75 is used to determine roughness parameters and apply filters in accordance with standards.

Advantages

- Smallest skidless probe system on the market
- Measure waviness and large roughness values over a measuring length of up to 75 mm in accordance with standards
- Mobile and convenient testing of P, R and W parameters with just one instrument
- Highly versatile thanks to more than 1,000 measuring programs
- Software can be flexibly controlled with a PC, as it is Windows-compatible
- Extensive range of accessories for even more versatility

Low-maintenance stylus tip

The stylus tip is raised and lowered by motor control.

Powerful skidless probe system

This allows you to easily reach any measuring point on your workpiece.

Compact design

Due to its small size and weight, the MarSurf M 510-15/510-50/510-75 is handy and convenient to use.

Flexible USB port

You can connect either a PC or laptop via cable, depending on your requirements and existing equipment.

Version	Order no.	Measuring length	Dimensions L × W × H	Weight
MarSurf M 510-15	6910 310	15 mm	52 × 28 × 40 mm	150 g
MarSurf M510-50	6910311	50 mm	158 × 40 × 46 mm	200 g
MarSurf M 510-75	6910312	75 mm	158 × 40 × 46 mm	200 g

MarSurf M 510

Mobile surface measuring instrument

FEATURES

Small measuring device for a large range of applications

- Smallest skidless probe system on the market
- Available in tracing length 15 mm, 50 mm und 75 mm
- Vibration resistent -> can be used in the production environment and machining centers
- Compact design
  – Mobile and convenient testing of P, R and W parameters with just one device
- Motorized lift-off stylus tip
- Intuitive control of the free tracing system via PC software
- Connection via USB interface -> plug in MiniProfiler, start software, and go!
- Software operable with Windows 10 and 11
- Save measurement programs
- Only supplier on the market for Wsa standards with factory or NPL certificate
- Optional magnetic adhesion to the surface
- Additional holder for mounting on the measuring stand
- Currently the only measuring system on the market for the parameter Wsa

TECHNICAL DATA

Order no.		6910310	6910311	6910312
Type		M 510–15	M 510–50	M 510–75
Traversing lengths		15 mm	50 mm	75 mm
Probe measuring range	mm	1.0		
Measuring principle		Tactile skidless probe system		
Filter according to ISO/JIS		Gauß, ISO 1562/16610–21, VDA 2008, ISO 13565–1		
Measuring speed		0.1 –2 mm/s		
Surface parameters		Profile parameters: Pt, Pc, Pv, Py, Pa, Pp Waviness parameters: Wt, Wc, Wv, Wy, Wa, Wp, Wsa (1–5), Wa0. 8 roughness parameters: Rt, Rv, Ry, Ra, Rmr, Rp, Rq, Rz, Rmax Core roughness parameters: Rk, Rpk, Rvk, Mr1, Mr2, R3z		
Operating temp. range		5 –35°C		
Weight drive unit		150 g	200 g	
(L x W x H) for drive unit		52 x 28 x 40	158 x 40x 46	158 x 40 x 46
Other		ISO-standards: ISO 4287, ther standards: Daimler MBN 31007, SEP 1941		


ST-D


ST-F


ST-G

Application:

Mechanical engineering
Bearings, shafts, racks, valves, various components from the engineering and precision mechanics industries

Automotive
Steering, brake systems, transmissions, crankshafts, camshafts, cylinder heads, cylinder blocks, turbochargers

Medical
Roughness measurement on hip and knee endoprostheses

Aerospace
Turbine components

Optics
Diverse optical components

ACCESSORIES

Order no.	Type	Description
6710803	ST-D	Measuring stand 300 mm with cast iron base
6710806	ST-F	Measuring stand 300 mm with granite plate
6710807	ST-G	Measuring stand 300 mm with granite plate and T-slot
6710401	PP	V-block
6710529	CT 120	XY table
6710604	PPS	Parallel vice
9064901	XE3/i5 SFF	Computer - MarSurf WIN 10, Dell
9058327	Lenovo	Computer MarSurf WIN 10 All-In-One/Touch
3027221	1080p	24" monitor
6268220	DE	Keyboard with USB cable DE
6268221	INT	Keyboard with USB cable INT
6268222	HU	Keyboard with USB cable HU
6268223	FR	Keyboard with USB cable FR
6268225	ES	Keyboard with USB cable ES
6268226	PT	Keyboard with USB cable PT
6268227	CZ	Keyboard with USB cable CZ
6268228	PL	Keyboard with USB cable PL
6268229	SV/FI	Keyboard with USB cable SV/FI

Signal converter **for automation**

The new Millimar A 1701 M module ensures that signals from length measurements are processed and relayed reliably and error-free. You can combine it with all of Mahr's inductive probes or compatible products by other manufacturers. The resulting measuring system is suitable for inspection tasks in automated processes and can be easily integrated into an existing production infrastructure, for example in plant engineering.

Equipped with an input for inductive probes, the Millimar A 1701 M picks up the incoming carrier frequency signal and converts it to a standardized analog signal, for example ±10 volts or 0 to 10 volts. An LED display provides you with information on the operating status at all times. The compact and robust housing facilitates use in production environments and can be mounted on a rail if required.

Advantages

- Process measuring data reliably and error-free
- Easily adjustable measuring ranges and filters
- Different standard signal outputs in one device
- Compact and robust design
- Can be easily mounted on rail

Millimar A 1701 M

Amplifier with analog output

IP 42

FEATURES

- Output voltage: ± 10 V or 0 V –10 V at end of measuring range, with toggle.
- Supply voltage 12 ... 30 V, DC voltage
- Connection: One input for Mahr-compatible inductive probes
- 6 measuring range toggle
- Zero point and amplification can be adjusted using potentiometer
- 3 setting range options for the zero point
- **Package contains:** instruction manual, 4-pin M9 Male cable connector

Application:

- The measuring amplifier A 1701 M is to be used in connection with an inductive probe for measurement control processes
- Provides the inductive probe with an AC voltage and converts the carrier fequency signal into output voltage

TECHNICAL DATA

Order no.		5331135
Type		A 1701 M
Measuring range, inductive probe	µm	± 50, ± 100, ± 200, ± 500, ± 1000, ± 2000
Error limit, analog output		0.2 µm and 0.3 % resp. (the larger value applies)
Display		No display, amplifier with analog output
Features		1
Energy supply:		12 ... 30 V, DC
Current consumption	mA	150
Probe inputs		1
Compatibility		Mahr
Data interface:		analog, ± 10 V, 0 –10 V
Analog output		Voltage output at end of range: • ± 10 V • 0–10 V
Reference temperature	°C	20
IP protection category:		IP 42

Order no.	Width	Height	Height
	mm	mm	mm
5331135	82	55	66

Measure close to production **with the new Digimar 816 CLT**

Measurements in the thick of the action: This is what the new Digimar 816 CLT is all about: thanks to its optimized mechanics, has proven itself in the rough and tumble of everyday production.

Measure accurately and easily like never before! The new addition to the Mahr height measuring instruments boasts outstanding measuring accuracy and is extremely easy to operate. The Digimar 816 CLT has a practical touch display with extra-large buttons, an integrated PDF memory, wireless data transfer and a wide range of accessories to make your work easier.

Max. length measuring uncertainty:

$2.0 + L/400\ \mu m$

(L in mm)

Advantages

- Extra large buttons for quick and reliable execution of functions
- Reliable measuring results thanks to motorized contacting without manual operator influence
- Create PDF measuring records directly on the device
- Wireless data transfer or via USB
- Free MarCom software to transfer data

Best ergonomics

Ergonomic handles on both sides have an integrated operating key for the air bearing ensuring the device can be moved accurately and effortlessly on the measuring plate.

Best connection for secure data

Data can be transferred wirelessly or via USB cable via the MarConnect interface. Quickly print out a series of measurements? The Star Micronics SM-L200 Bluetooth® printer is available for this purpose. Simply choose between complete measuring records in PDF format or save your measuring records as a TXT file.

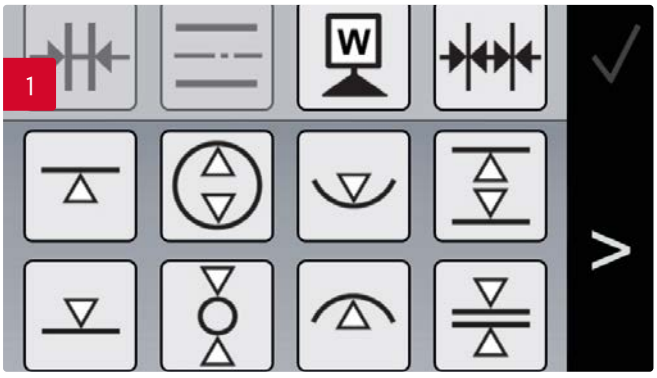
Creation of PDFs directly on the device

Practical: The device creates a complete PDF file without the need for additional software or transfer to a computer. Information can be added to the PDF files directly on the device.

Simple touch measurement

Intuitive operation via extra large, clearly defined keys to ensure the reliable completion of measurements, setting and calculation functions, and the creation of measuring programs via Drag & Drop.

Important features for your quality assurance



Clarity

The touch display of the new Digimar 816 CLT features even larger buttons that make recognition and operation even easier. They lead directly to the measurement and evaluation functions. This always ensures the reliable completion of measurements, setting and calculation functions, and the creation of measuring programs via Drag & Drop.

Extensive ports

The Digimar 816 CLT has a variety of ports for backing up your measuring data. Data transfer is possible both wirelessly and by cable via the MarConnect duplex interface. The latter also transmits a measuring equipment ID, ensuring that your measuring results are traceable.

Integrate dial indicators

A port integrated in the slide enables error-free measurement of perpendicularity and straightness in conjunction with the Millimess 2000/2001 W digital dial comparators.

Ergonomic handles

Handles on both sides guarantee that you can move your device precisely and effortlessly on the measuring plate. This allows the Digimar 816 CLT to be quickly moved into position and the measurement started.

Fast, intuitive and highly compatible: **The new Digimar height measuring instruments**

Do you value high-performance and reliable measuring technology for your quality assurance? The new Digimar family offers you the ideal device for every application. With its practical functions, the new Digimar 816 CLT allows you to obtain your measuring results quickly and easily without having to forego extensive evaluation options. Do you have the highest demands regarding accuracy, ease of use and functionality? Then the top-of-the-range Digimar 817 CLT is just right for you.

The choice is yours:

	Digimar 816 CLT	Digimar 817 CLT
Measuring ranges in mm	350/600	350/600/1000
Error limit in µm	(2.0+L/400) L in mm	(1.8+L/600) L in mm
Plane repeatability in µm	1 µm	0.5 µm
Bore repeatability in µm	2 µm	1 µm
Control panel	10" tiltable	10" tilt, swivel and height-adjustable
Function key design	Extra large	Standard
Thumbwheel for fine positioning and quick measurement keys	–	x
2D measuring functions	–	x
Additional functions	–	Auto distance, double probe measurement, cone function, third zero point
Measuring programs	Yes	Yes, including integrated ISO tolerance table
Recording	PDF, printer	PDF, printer
Data transfer	MarConnect (USB or wireless)	MarConnect (USB or wireless)

Digimar 816 CLT

Height measuring instrument

FEATURES

Functions

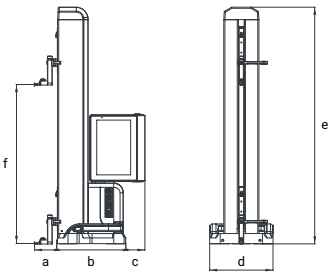
- Contacting bottom or top
  - Web width or groove spacing incl. web or groove center
  - Bore or shaft diameter incl. bore or shaft center
- Bore reversal point (top or bottom)
- Shaft eversal point (top or bottom)
- Calculate distances or symmetry
- Dynamic measuring functions
- Perpendicularity measurement
- Straightness measurement
- Measuring programs
- Measurement data processing
- Large and clearly defined touch display with backlighting
- User guide with self-explanatory icons
- Multilingual user guidance
- Option of setting additional zero points on the workpiece
- Additional measuring instrument can be connected via MarConnect USB port
- Future-proof thanks to software updates
- Automatic activation of standby mode
- Selectable auto-off function, without loss of measured values
- Excellent measuring accuracy and reliability due to the optical incremental measuring system with the double reader head
- Dynamic probe system enabling high repeatability
- Air bearing system for light and smooth movement
- Measuring head guided in precision ball bearings
- Motorized measuring slide simplifies measurement runs
- Probe constant remains after the instrument is switched off
- Integrated rechargeable battery with a long operating life for mains-independent measurement
- Temperature compensation via integrated temperature sensor

- **Software:** MarCom Professional free download: www.mahr.com/marcom (only for Mahr data cables and wireless systems with USB and RS–232 interface)
- **Package contains:** height measuring instrument incl. operating and display unit, carrier 817h1, probe K6/51, setting block 817 eb, USB cable, instruction manual, power source, protection cover, calibration certificate
- **Energy supply:** Integrated rechargeable battery (up to 14 h) or via power supply unit
- **Battery type:** Rechargeable Li-Ion battery 7.2 V
- **Data interface:** 3x USB 2.0, wireless

TECHNICAL DATA

Order no.		4429630	4429631
Type		816 CLT	
Measuring range	mm	0 –350	0 –600
Measuring range	inch	0 –14″	0 –24″
Application range from	mm	170	
Application range up to	mm	520	770
Numerical increment	mm	0.0001, 0.0005, 0.001, 0.005, 0.01	
Resolution	inch	.001″, .0005″, .0001″, .00005″, .00001″	
Error limit	µm	(2.0 + L/400) L in mm	2.0 + L/400) L in mm
Repeatability planes	µm	1	
Repeatability bores	µm	2	
Perpendicularity error	µm	5	8
Operating time max.	h	14	
Data interface		3x USB 2.0, Wireless	
Product weight	kg	22	26

Order no.	a	b	c	d	e	f
	mm	mm	mm	mm	mm	mm
4429630	89	278	77	255	688	356
4429631	89	278	77	255	938	610



Digimar 816 CLT

Height measuring instrument

ACCESSORIES

Order no.	Type	Description
4102220	i-Stick	Wireless receiver for measuring instruments with integrated wireless
6910271	DP-B1	Set consisting of Star Micronics SM-L200 Bluetooth® printer and USB wireless adapter
4221525	107 G	Surface plate made from granite, 1000 x 630 mm
4221573	107 Ug	Open underframe with edge protection, 1000 x 630 mm
4221526	107 G	Surface plate made from granite, 1200 x 800 mm
4221574	107 Ug	Open underframe with edge protection, 1200 x 800 mm

i-Stick

107 Ug

Combination talent for **a wide range of form measurements**

The Precimar SM 60-V mobile measuring bench has interchangeable anvils.

Mahr has developed the new Precimar SM 60-V for quick and easy outer measurements on cylindrical parts or for measuring thicknesses and lengths: The length measuring bench is easy to operate and demonstrates its strengths to the full with a wide range of measuring equipment - from the digital dial indicator to measuring probes. Thanks to the interchangeable anvils, it can be individually adapted to a wide variety of measuring tasks. For example, the Precimar SM 60-V can be used for measuring recesses, outer teeth, the pitch diameter on outer threads and many other measuring tasks and is also ideally suited for precise series measurements. Thanks to its robust design, the new length measuring bench can also be used directly in production.

Digital dial indicators

Analog dial indicators

Probe

Integrated coupler

To protect the measuring instrument used, the Precimar SM 60-V has an integrated coupler.

Adaptable

By selecting the dial indicator or probe, the measuring bench can be individually adapted to the accuracy requirements.

25 mm

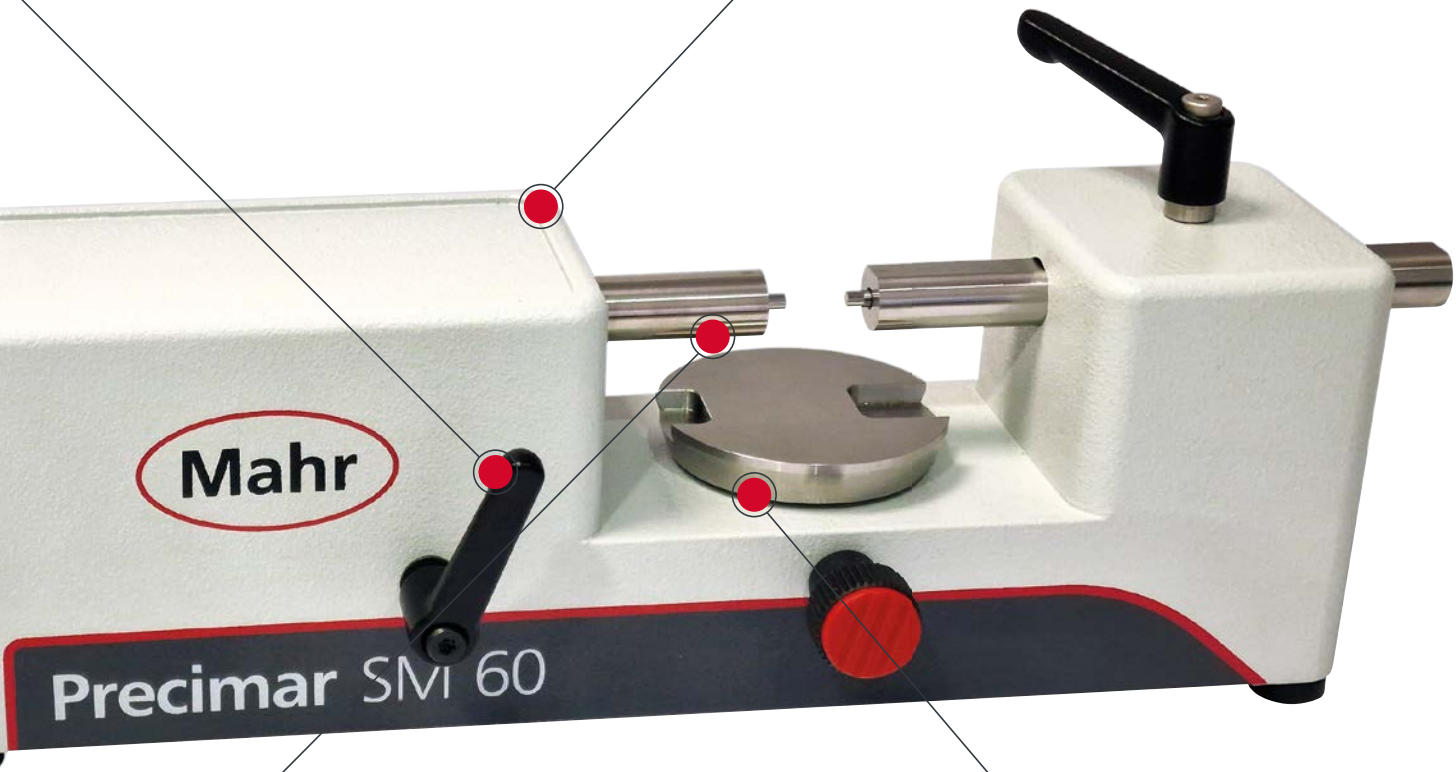
Direct measuring range

Advantages

- Quick adjustment to workpiece diameters up to 60 mm
- Versatile thanks to extensive range of measuring anvils
- Suitable for left- and right-handed operators
- Ideally suited for precise series measurements

In all environments

Thanks to its robust design, the measuring instrument can be used in any measuring environment.



Large support table

Infinitely height-adjustable table with 60-mm-wide support.

Versatile

The length measuring bench can be adapted to a wide range of measuring tasks thanks to an extensive portfolio of measuring anvils.

Precimar SM 60-V

Length measuring bench

FEATURES

The Precimar SM 60-V is a user-friendly measuring instrument for fast, precise outer measurements on workpieces.
Special advantage:
Individual adaptation for a wide range of measuring tasks through the use and combination of interchangeable anvils
(stem Ø3.5 x 15.5 mm).

- Very precise and repeatable measurements thanks to specially mounted measuring spindle and constant spring measuring force
- Simple instrument design
- Quick adaptation to new workpieces
- Rugged construction makes it suitable for use close to production
- Freely selectable measuring equipment (e.g. digital dial indicator, measuring probes, etc.)
- Mounting hole for measuring inserts with shaft Ø 3.5 mm x 15.5 mm
- Integrated coupling protects the measuring equipment
- Wide choice of measuring attachments
- Suitable for left- and right-handed operators
- Large support table, Ø 60 mm, with variable height adjustment
- **Package contains:** instruction manual, plan carbide anvils Ø 3.5 mm

Application:

- For rapid measurements of cylindrical parts (shafts, bolts and shanks)
- Thickness and length measurements
- Ideal adaptation to the measuring contour through individual use/combination of measuring inserts (flat, spherical, pointed, etc.)
- For determining the pitch diameter of external threads (optionally with thread flank measuring anvils)
- For gears (optionally with sphere or roller measuring anvils)
- Particularly suited for exact series measurements

TECHNICAL DATA

Order no.		5357380
Type		SM 60-V
Measuring span	mm	25
Application range mm	mm	0 – 60
Measuring forces		5 N + measuring force of the measuring system
Mounting shaft diameter	mm	8
Size of table	mm	Ø 60
Weight	kg	9

ACCESSORIES

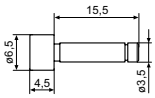
Order no.	Type	Description
4337661	1087 R	Digital dial indicator, 0.0005 mm, 25 mm
4337665	1087 Ri	Digital dial indicator, 0.0005 mm, 25 mm
4337621	1086 R	Digital dial indicator, 0.0005 mm, 25 mm
4337625	1086 Ri	Digital dial indicator, 0.0005 mm, 25 mm
5312012	C 1200 M	Compact amplifier
5323010	P2004 M	Inductive probe, ± 2 mm
4151794	40 Ef	Plane measuring anvil (Ø 6.5 mm)
4151795	40 Ea	Measuring anvil with reduced measuring surface (Ø 2 mm x 4 mm)
4151796	40 Et	Measuring anvil plate (Ø 11.3 mm)
4151797	40 Er	Measuring anvil with convex measuring surface (Ø 7 mm, R=5 mm)
4151798	40 Ep	Measuring anvil with tip (60°)
4151799	40 Es	Measuring anvil with blade (0.75 mm x 4 mm)

1087 Ri

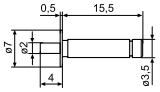
1086 R-HR;
1086 R; 1086 ZR

C 1200 M

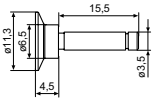
P2004 U; P2004 T;
P2004 M; P2004 F



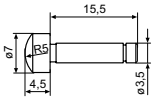
40 Ef



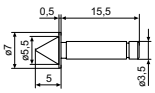
40 Ea



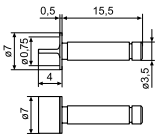
40 Et



40 Er



40 Ep



40 Es

Workshop measuring microscope **for geometric elements**

Mahr offers the new MarVision MM 500 measuring microscope for the workshop and laboratory in two versions, each with three measuring ranges: with manual axes or with CNC axis control. This gives you a total of six models from which you can choose the perfect solution for your requirements.

The MarVision MM 500 inspects turned, milled, punched and bent parts, plastic parts and electronic circuit boards, for example. The measuring microscope uses automatic edge detection to determine geometric elements such as points, straight lines, circles, distances, angles and intersection points on these workpieces without contact. Thanks to the optical incremental measuring system, it offers outstanding accuracy and reliability. In addition, its color camera captures particularly high-contrast images.

The manual MM 500 models are designed to test components quickly and easily. In contrast, the CNC versions with stitching are designed for a higher throughput, e.g. recurring measuring tasks on a sample. You can achieve your measuring results quickly and easily without complex pre-settings: Control is via the intuitive M3 software, either by touchscreen PC or keyboard and mouse.

Advantages

- Available for three measuring ranges: 200 x 100 mm / 300 x 200 mm / 400 x 250 mm
- Robust mechanics
- Simple commissioning thanks to the one-box design of the electronics
- Proven M3 software with touch PC

Quadrant LED ring light

This optional coaxial incident light provides you with optimum illumination of monochrome surfaces.

LED transmitted light

This optional telecentric transmitted light ensures a sharp image of rotationally symmetrical workpieces.

Solid granite base

The sturdy design provides lasting protection against vibrations and thus contributes to the reliability of the measuring results.

M3-Software

1 Observe

2 Measure

3 Detail

Motorized Navitar zoom lens

Even the smallest components can be measured extremely accurately in six zoom levels.

Height adjustment as required

Depending on the model, you can align the lenses to your workpieces either manually or by motor.

Sturdy steel XY table

This provides the ideal support, even for delicate workpieces, and enables perfect working with incident and transmitted light.

4 Calculate

5 Evaluate

6 Document

MarVision MM 500

Workshop measuring microscope with M3 software

FEATURES

Measuring microscope

- Integrated color camera
- Zoom lens (0.7x –4.5x) optionally motorized
- LED ring light: 1 ring and 4 segments, individually switchable and dimmable
- LED transmitted light: dimmable
- Laser pointer for position finding
- Solid granite base
- Sturdy steel XY table, precision-mounted
- Optical incremental measuring system for outstanding accuracy and reliability

Operating and display unit M3 software with touchscreen PC

- 23" touchscreen with keyboard and mouse
- Operating system Windows, further software can be installed
- Operation via Multi-Touch screen or with mouse / keyboard
- Large video image
- Reference / actual evaluation with tolerances
- Record output with company logo
- Graphic display with dimensioning
- Automatic edge detection, even on low-contrast parts
- Stitching
- Statistics
- Palletizing of serial parts

Optional hardware components

- Telecentric transmitted light
- Coaxial incident light
- Use of ancillary lenses 0.5x / 2x (additional magnification levels)

Software options

- Importing DXF data
- DXF and profiling package
- Thread measurement module
- Cable insulation module
- QDAS module

Package contains:
M3 software with touchscreen PC,
instruction manual,
Mahr calibration certificate

Application:

- Measurement or determination of geometric elements (point, straight line, circle, distance, intersection point, etc.) by automatic edge detection, e.g. on punched and bent components, plastic components, and circuit boards.

TECHNICAL DATA

Order no.		4248401	4248402	4248403
Type		MM 500		
Measuring range X / Y	mm	200 / 100	300 / 200	400 / 250
Magnification		35 – 225x		
Measuring system - resolution	mm	0.001		
Measuring system - E1 X/Y	µm	1.9 + (L/100)		3.9 + (L/100)
Measuring system - E2 XY	µm	2.9 + (L/100)		4.9 + (L/100)
Max. height of test piece	mm	200		
Size of table	mm	370 x 210	480 x 380	600 x 430
Maximum table load	kg	20		
Measuring system type		Built-in incremental scale		
Illumination		LED back and front illumination, adjustable		

MarVision MM 500 CNC

CNC Workshop measuring microscope

FEATURES

Measuring microscope

- 3-axis CNC control
- Axis movement and speed regulation controlled via joystick
- Integrated color camera
- Motorized zoom lens (0.7x –4.5x) with autofocus
- LED ring light: 1 ring and 4 segments, individually switchable and dimmable
- LED transmitted light: dimmable
- Laser pointer for position finding
- Solid granite base
- Sturdy steel XY table, precision-mounted
- Optical incremental measuring system for outstanding accuracy and reliability

Operating and display unit M3-software with touchscreen PC

- 23" touchscreen with keyboard and mouse
- Operating system Windows, further software can be installed
- Operation via Multi-Touch screen or with mouse / keyboard
- M3-Software
- Large video image
- Reference / actual evaluation with tolerances
- Record output with company logo
- Graphic display with dimensioning
- Automatic edge detection, even on low-contrast parts
- Stitching
- Statistics
- Palletizing of serial parts

Optional hardware components

- Telecentric transmitted light
- Coaxial incident light
- Use of ancillary lenses 0.5x / 2x (additional magnification levels)

Software options

- Importing DXF data
- DXF and profiling package
- Thread measurement module
- Cable insulation module
- QDAS module

Package contains:
M3 software with touchscreen PC, instruction manual,
Mahr calibration certificate

Application:

- Measurement or determination of geometric elements (point, straight line, circle, distance, intersection point, etc.) by automatic edge detection, e.g. on punched and bent components, plastic components, and circuit boards.

TECHNICAL DATA

Order no.		4248421	4248422	4248423
Type		MM 500 CNC		
Measuring range X / Y	mm	200 / 100	300 / 200	400 / 250
Magnification		35 – 225x		
Measuring system - resolution	mm	0.001		
Measuring system - E1 X/Y	µm	1.9 + (L/100)		3.9 + (L/100)
Measuring system - E2 XY	µm	2.9 + (L/100)		4.9 + (L/100)
Max. height of test piece	mm	200		
Size of table	mm	370 x 210	480 x 380	600 x 430
Maximum table load	kg	20		
Measuring system type		built-in incremental scale		
Illumination		LED back and front illumination, adjustable		

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