Digimar 817 CLM Quick Height

▶ | The new Height Measuring Instrument **Digimar** 817 CLM with the innovative Quick Mode. Highly accurate rapid measurements, a wide range of measuring and evaluation possiblities and excellent operator comfort. | ◀

The best solution for all measuring tasks

QUICK MODE

Fast measurement by Hand
Easy to operate due to the "Quick Mode", an innovative solution from Mahr (patent pending)

| Ill. 1. | Move the measuring carriage by hand in the direction of the object to be measured. | Ill. 2. | The motor starts, the measurement procedure will automatically be performed. |

Comfort to operate all measurement functions with the function keys due to the clearly defined symbols.

Highest accuracy and reliability

- Extremely accurate incremental measuring system with double reader head system, insensitive to the contamination of dirt
- Robust guide column, made from stainless steel

- Measuring head in precision ball bearings guide
- Temperature compensation with an integrated temperature sensor   **20°C**
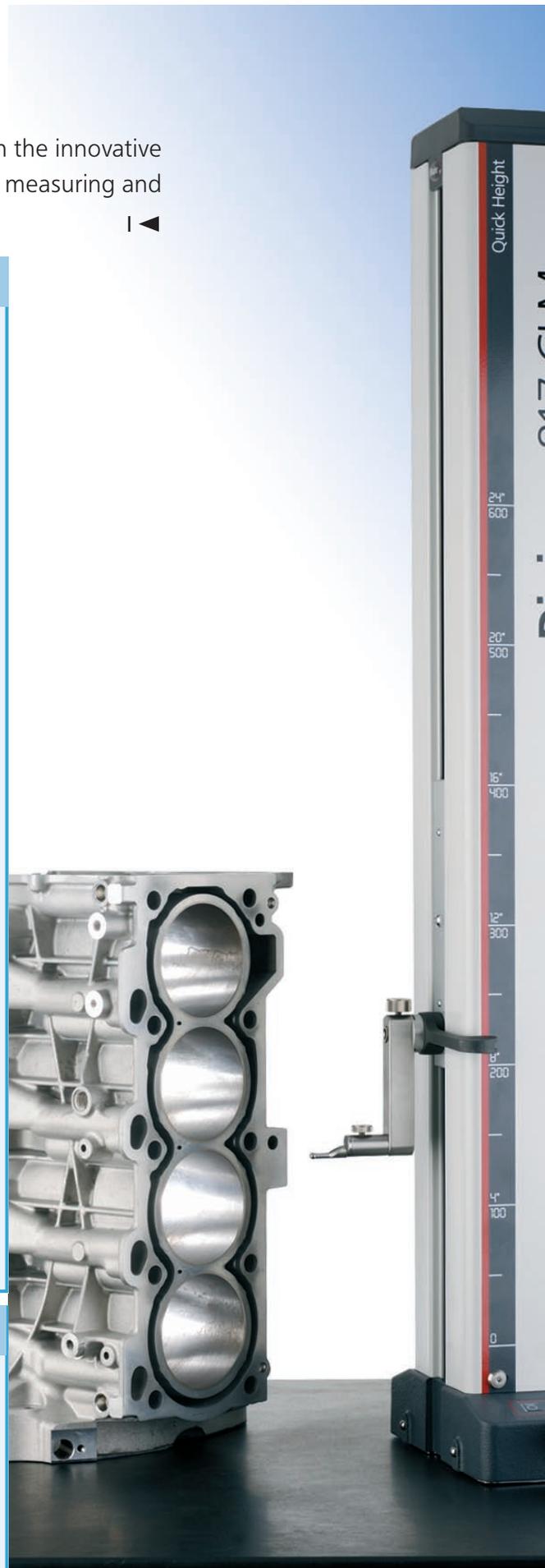
Ergonomic operating and display unit
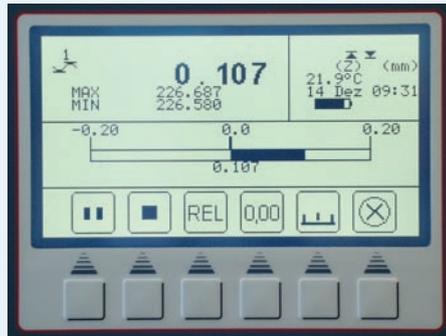
- Large, back-lit display

- Self-explanatory guided operation with icons

- The display unit can be positioned freely with the swivel arm

Universal measurement possibilities

- Wide range of measurement functions in 1D or 2D (optional)

- Dynamic measurement functions with the analog display

- Automatic perpendicularity and straightness measurements (in conjunction with accessories)

- Automated measuring procedures (measurement programs)

- Auto function for chain measurements and distance measurements
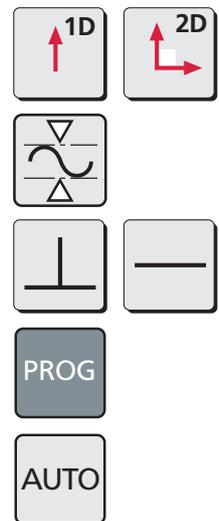
Extensive evaluation possibilities

- Transmit data to a PC via RS232 or USB (with an adapter) for example into MS Excel via the MarCom-Software

- Print measured values, statistics, etc. via a USB printer

- Save measued values in the integrated USB memory (will be recognized by a PC as an interchangeable disc drive)

- Broad range of statistical evaluations are available (optional)
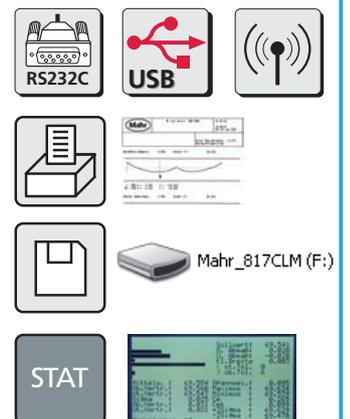
Height Measuring Instrument Digimar 817 CLM

Features

Measuring system

- Excellent accuracy and reliabilty due to the optical incremental measurement system with the double reader head
- Dynamic probing system enabling high repeatability
- Air bearings system for light and smooth movement
- Precise measuring head on stainless steel guideways
- Motorized measuring carriage simplifies measurement runs
- Probe constant remains after the instrument is switched off
- Integrated rechargeable battery with a long operating time span for mains independent measurement
- Temperature compensation with an integrated temperature sensor

Operating and display unit

- Large and clearly defined function keys
- Easy to read background lit graphic LCD-Display
- Operator guidance with self-explanatory icons / pictograms
- Operator prompts and menus are available in several different languages
- Possible to set additional zero points on a work piece
- RS232 and / or USB data output for further data processing
- Save measured data on the integrated USB memory
- USB interface to connect a compatible USB printer
- Additional measuring instruments with OptoRS232-interface can be connected
- Secure the future due to software update potential
- Automatic Stand-by mode / background lit display can be switched off after defined length of time to save power

- Selectable Auto-off function, without loss of measured values

- Supplied with:
  Height Measuring Instrument incl. operating and display unit, carrier 817h1, probe K6/51, setting block 817eb, operating instructions, mains power adapter, USB cable

Technical Data

Measuring range	mm / *inch*	350 / *14"*	600 / *24"*	1000 / *40"*
Range of application	mm / *inch*	520 / *20.47"*	770 / *30.31"*	1170 / *46.06"*
Resolution	mm		0.01 / 0.005 / 0.001 / 0.0005 / 0.0001	
	inch		*0.001" / 0.0005" / 0.0001" / 0.00005" / 0.00001"*	
Measuring error*	µm		(1.8+L/600). L in mm	
Repeatability	µm		0.5 (plane) 1 (bore)	
Perpendicularity error (elect. adjusted)	µm	frontal ≤5	frontal ≤6	frontal ≤10
Operating time of rechargeable battery	h		up to 16	
Measuring force	N		1.0 ±0.2	
Permissible relative air humidity	%		65 (non condensed)	
Working temperature	°C / °F		20 ±1 / 68 ±33.8	
Operating temperature	°C / °F		10 . . . 40 / 50 . . . 104	
3-point air cushion, height	µm		ca. 9	
Measuring system			incremental scale with optical reading	
Total height	mm / *inch*	741 /*29.17"*	985 / *38.78"*	1392 / *54.80"*
Base area (L x W)	mm / *inch*		240 x 250 / *9.45" x 9.84"*	
Weight	kg / lbs	25 / *55.15*	30 / *66.14*	35 / *77.16*
Order no. 1D		**4429000**	**4429001**	**4429002**
Order no. 2D / Stat		**4429010**	**4429011**	**4429012**

* Surface base plate according to DIN 876/0 with standard accessories

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Operating and display unit

Variable function keys

Evaluation function and measuring program keys

Calibration and set up function keys

Measuring functions

Delete and accept function keys

Keypad

Arrows keys

2D Operating and display unit

Activate / deactivate the Quick-Mode

1D Operating and display unit
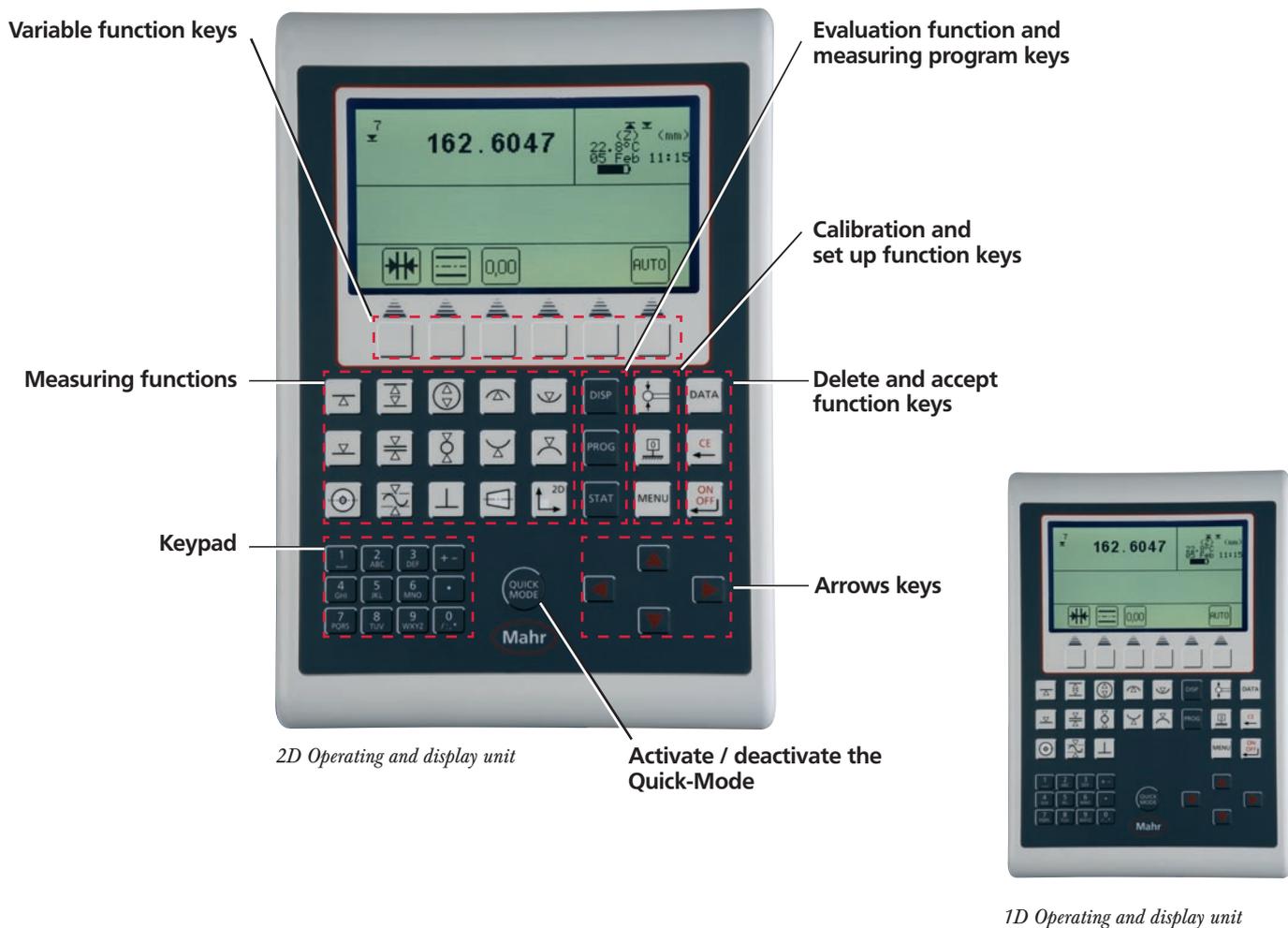
Operating and display unit		1D	2D / Stat
Measurement			
One dimensional (1D)		●	●
Two dimensional (2D)			●
Measuring programs (automatic run)		40	40
Perpendicularity / straightness measurement		●	●
Flatness / parallel deviation (Max, Min)		●	●
Roundness / run-out deviation (Max-Min)		●	●
Evaluation			
- Statistics			●
- Transmit measured values to a PC via RS232		●	●
- Print measured values and diagrams on a USB printer		●	●
- Print out statistical evaluation			●
- Save measured values on the integrated USB memory		●	●

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Measuring with the function keys

Comfortable 1D standard measuring functions with a semi automatic run
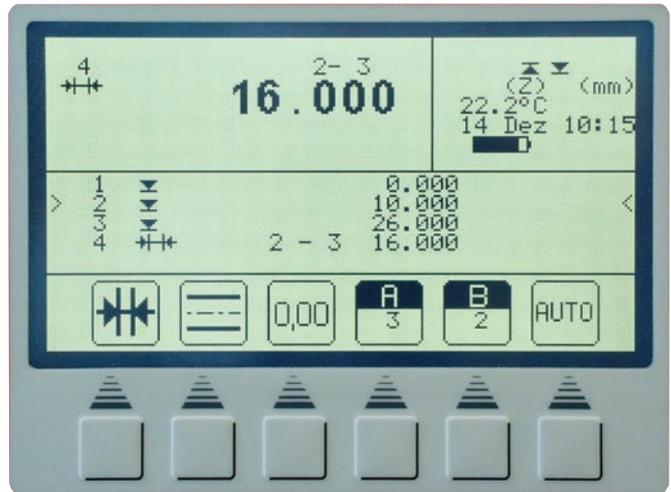
- **Contacting a surface from above**

- **Contacting a surface from below**

- **Measuring a groove** (center and width)

- **Measuring a ledge** (center and width)

- **Measuring a bore** (center and diameter)

- **Contacting a bore from below**

- **Contacting a bore from above**

- **Measuring a shaft** (center and diameter)

- **Contacting a shaft from above**

- **Contacting a shaft from below**

- **Determining the center of a bore**
  (with a taper probe)

- **MAX-MIN Function**
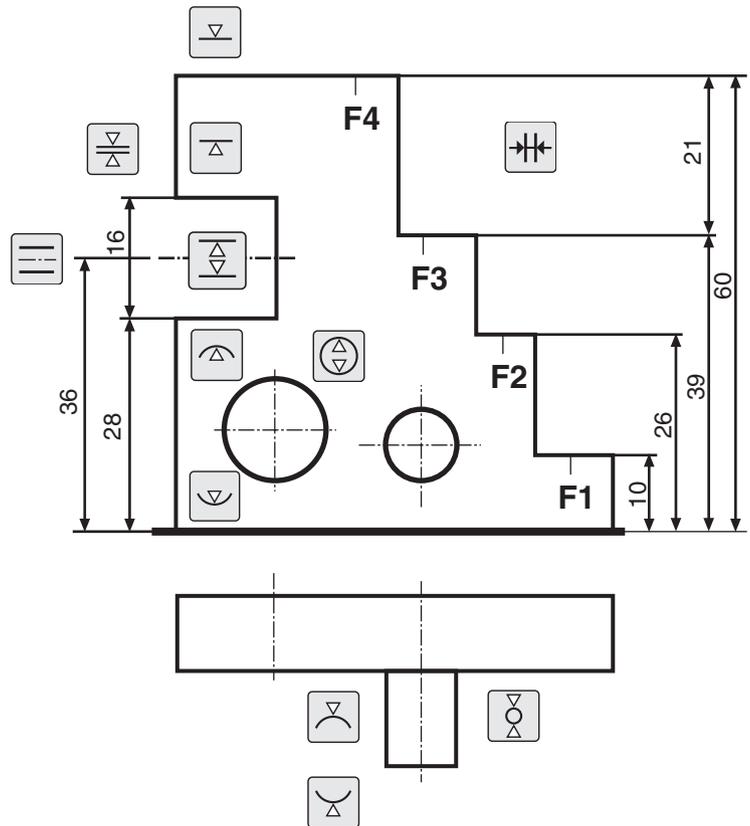
Calculation functions

- **Calculate the distance between 2 measured values**

- **Calculate the symmetry between 2 measured values**

- **Chain measurements and distance measurements F1 to F4**

- **Automatically set the zero point**

Height Measuring Instrument Digimar 817 CLM

QUICK MODE Measuring with Quick Mode

Ideal for fast and simple measurement

1. Move the measuring carriage by hand in the direction of the object to be measured.

2. The motor starts, the measurement procedure will automatically be performed.

Measurement using the keypad (speed keys) on the base

Ideal in conjunction with the air bearings for large work pieces.

By using the keys that are integrated into the base; the operator can comfortably move the measuring carriage into the desired position and start a measurement. This eases measurement particularly when measuring large workpieces as these do not have to be moved into position. The operator can keep both hands on the measuring instrument (one hand on the key for the air bearing and other on the high-speed keys) and measure the workpiece in one run.

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⊥ — Perpendicularity and Straightness Measurements

Only one measurement required to determine perpendicularity and straightness deviation.
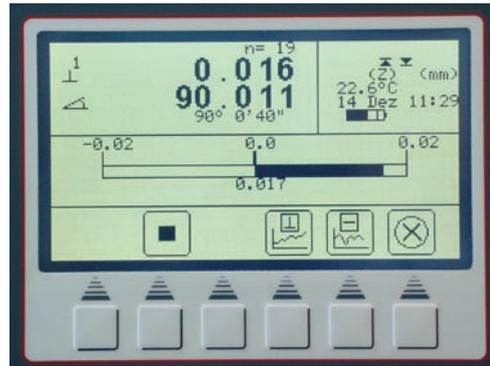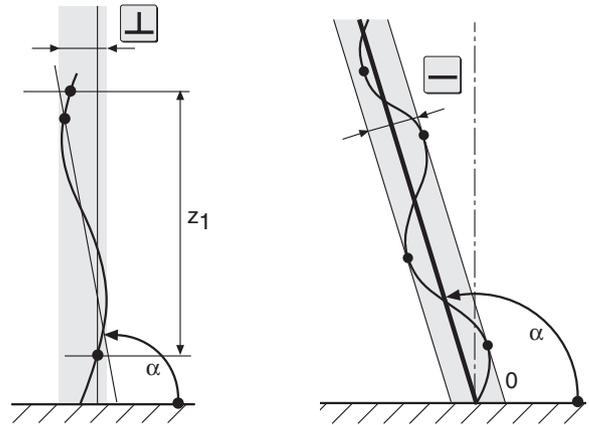

- Display shows the deviation of an angle (in degrees) and the deviation in mm (metric)
- The bar graph display shows the actual value, thus improving visualization

Comprehensive evaluation possibilities

- Display on the screen
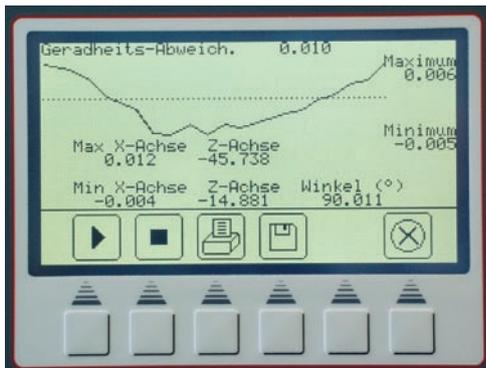
- Save the data in the USB memory

Mahr_817CLM (F:)

- Print data via a USB printer
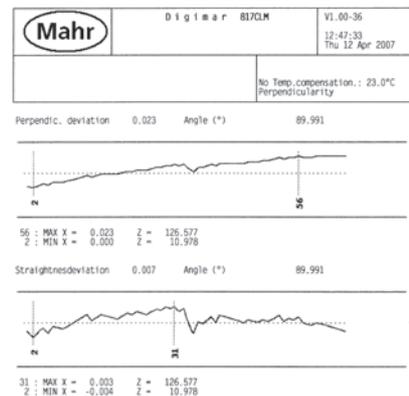
Height Measuring Instrument Digimar 817 CLM

Dynamic measuring functions

Only one measurement required to determine
Maximum, Minimum and Maximum-Minimum.
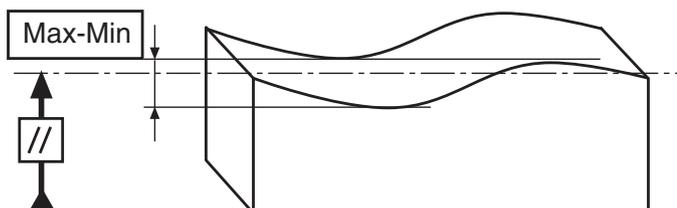
Max-Min

• Parallel deviation
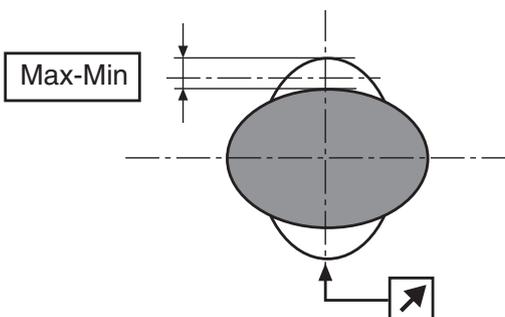
Max-Min

• Roundness deviation
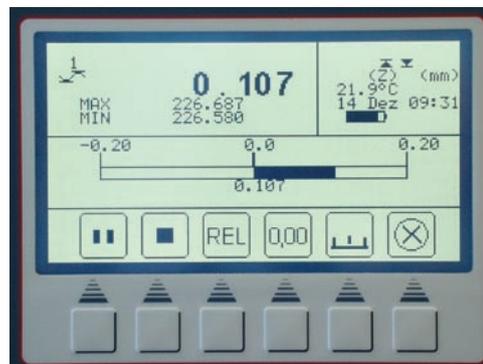
• MAX, MIN and MAX-MIN are displayed simultaneously
• The bar graph display shows the actual value, thus improving
  visualization

PROG Measuring program for repetitive measurements / serial components

Use the Teach-in mode to quickly devise a measuring program.
Simply measure a work piece once; save this measurement and the
measuring program is already created. The motorized carriage will
travel automatically to the measuring position, the measuring
function will start automatically. This greatly reduces the inspection
time for a mini series consisting of only a few test pieces.

• Measuring programs in 1D and 2D

• Create measuring programs with the Teach-In-mode

• Simple programming and storage of up to 40 measuring
  programs, further measuring programs can be stored on a PC

• Tolerance monitoring during a measuring program

• Create production and inspection schedules

• Connection of additional hand measuring instruments with an
  Opto-RS232-interface is also available

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2D | Measure in the 2D mode*

The most important 2D measurement functions can be conducted by pressing just one key.

- **Determine an index circle**

- **Determine the distance and angle 2 elements**

- **Determine the distance and angle 3 elements**

- **Coordinate transformation**
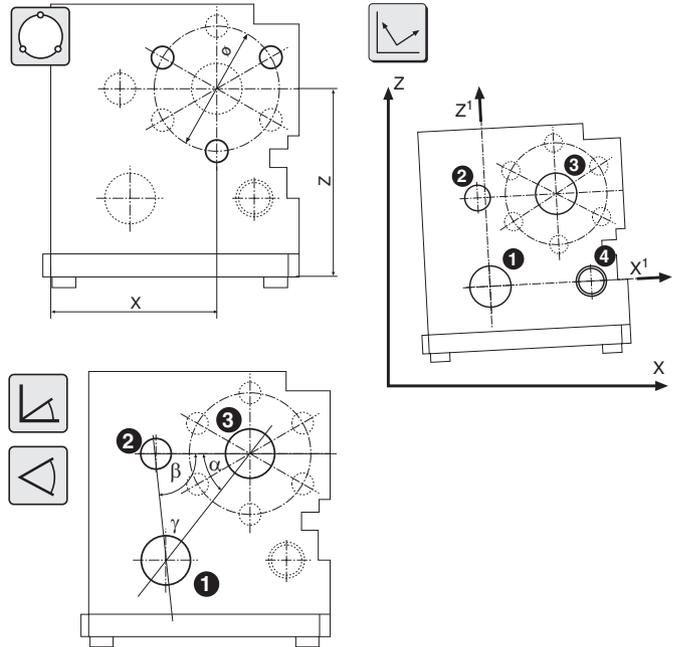
STAT | Statistical Evaluation*

The operating unit has extensive and selective possibilities for statistical evaluation.

- Statistical evaluation of individual features

- Histograms

- Process control charts

- Pareto diagrams

- Creation of production and inspection schedules

- Evaluation based on stored measurement data

- Histograms, process control charts and Pareto diagrams can be directly printed on a USB printer
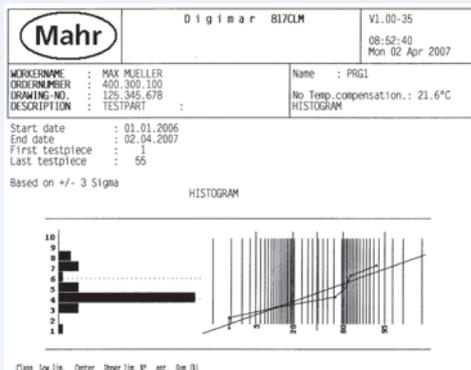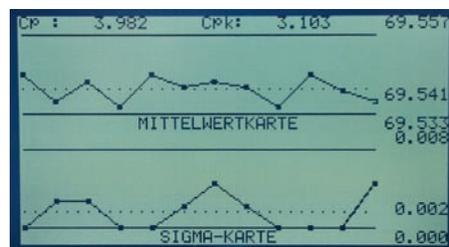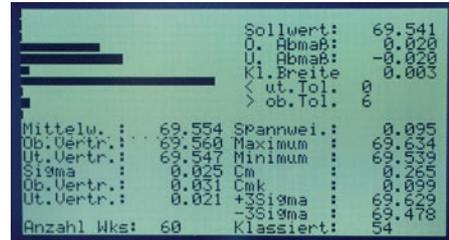
* Only available with insturments that have a 2D / Stat. operating / display unit

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Accessories

Spherical probes

Catalog no.	Ball dia. D mm	Shaft length mm	Mount dia. mm	Order no.
K5/51	5	26.8	6	**4429158**
K6/51	6	24.2	6	**4429254***
K4/30	4	31	8	**7023813**
K6/40	6	41	8	**7023816**
K10/60	10	62	8	**7023810**
K10/100	10	103	8	**7023615**

* supplied with standard accessories

K 5/51
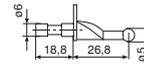
K 6/51
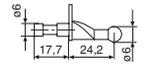
K 6/40
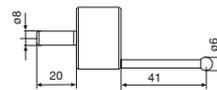
K 4/30
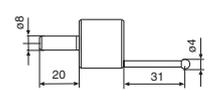
K 10/60
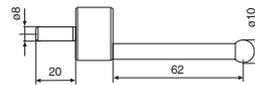
K 10/100
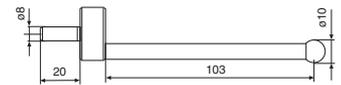
Special probes

Catalog no.	Description	Mount dia. mm	Order no.
S15/31,2	Disc probe	6	**4429226**
Z10/31,2	Cylindrical probe	6	**4429227**
Z10/60	Cylindrical probe	8	**7023819**
MKe 30	Taper probe	6	**4429228**
TMT 120	Depth probe incl. carrier		
TMT 120 S	2 depth probes incl. carrier		**4429421**
KM 2	Probe M2 incl. styli 800 ts dia. 2 mm	6	**4429256**

S 15/31,2
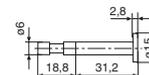
MKe 30
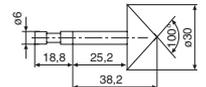
Z 10/31,2

Z 10/60
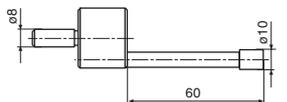
KM 2
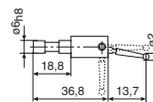
TMT 120
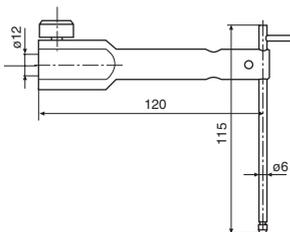
TMT 120 S
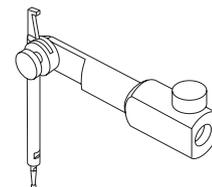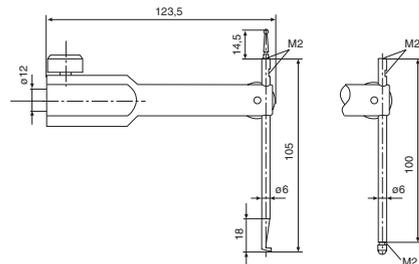
Setting blocks

Catalog no.	Description	Order no.
817 eb	Setting block	**4429168***
EB I	Setting block for taper probe, with calibration certificate	**7023827**

* supplied with standard accessories

817 eb

EB I
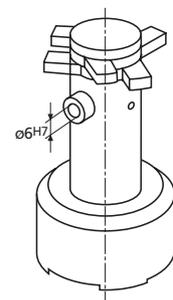
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Accessories

Carrier for probes and transducers

Catalog no.	Description	Shaft length mm	Mount dia. mm	Order no.
817 h1	Carrier for probes	27.5	6	**4429154***
817 h2	Carrier for probes	100	6	**4429219**
817 h3	Carrier for Digital indicator / Incremental probes		8	**4429206**
817 h4	Carrier for probes		8	**4429220**

* supplied with standard accessories
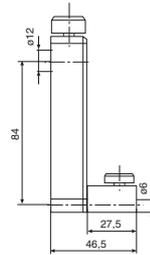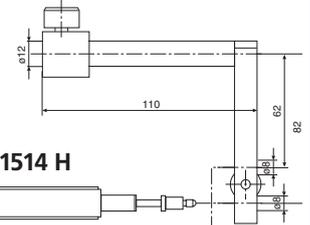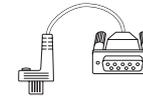
Transducers for measuring perpendicularity

Catalog no.		Order no.
P1514 H	Incremental probe, 12 mm incl. cable	**4426810**
1086	Digital indicator, 12.5 mm Resolution 0.001 / .00005"	**4337020**
16 EXr	Data cable for digital indicator 1086	**4102410**

817 h1   817 h3

P1514 H

16 EXr   1086
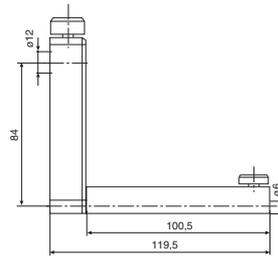
817 h2   817 h4
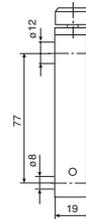
Data connection cable

	Order no.
Data cable 817 CLM to MSP 2 / PC	**7024634**
Adapter cable RS232-USB for Digimar 817	**4102333**

Accessories for Data Processing see Chapter 11
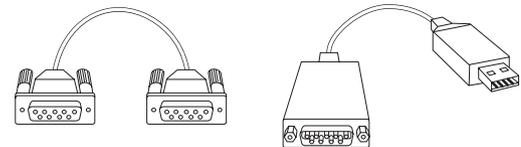
Printer

HP-Deskjet 5940

• Standard connectivity: USB - compatible with USB 2.0 specifications, PictBridge
• Compatible operating systems: Microsoft® Windows® 98 SE, Me, 2000, XP (Home and Professional)
• Standard printer languages HP PCL 3

	Order no.
HP 5940 Deskjet, Photo printer	**4429015**

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Probe accessory sets

Probe set 817 ts1 consists of:		4429019
	Carrying case	4429020
817 h2	Carrier for probes	4429219
S15/31,2	Disc probe	4429226
Z10/31,2	Cylindrical probe	4429227
MKe 30	Taper probe	4429228
TMT 120	Spherical probe to measure recesses incl. carrier	4429221
KM 2	Probe M2 incl. for MarTest styli M2	4429256
817 h4	Carrier for probes	4429220
K4/30	Spherical probe	7023813
K6/40	Spherical probe	7023816
K10/60	Spherical probe	7023810
K10/100	Spherical probe	7023615
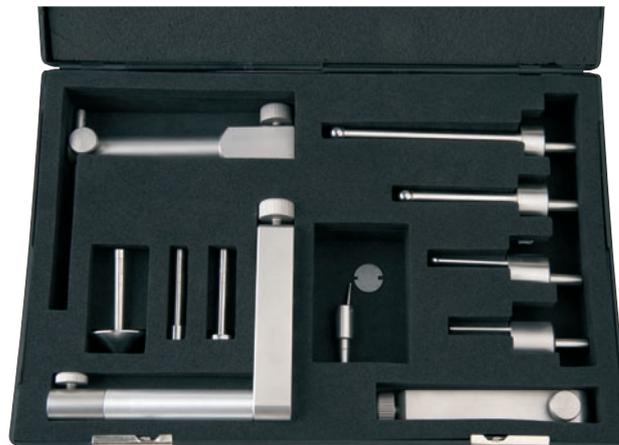
817 ts1

Probe set 817 ts2 consists of:		4429018
	Carrying case	4429020
817 h2	Carrier for probes	4429219
S15/31,2	Disc probe	4429226
Z10/31,2	Cylindrical probe	4429227
MKe 30	Taper probe	4429228
TMT 120	Spherical probe to measure recesses incl. carrier	4429221
KM 2	Probe M2 for MarTest styli M2	4429256

Universal probe set CXt2 consists of:			7034000
Case			3015925
Probe carrier			3015917
	Dimension	**Shaft length**	
Measuring crook	d = 0.5 mm	l = 78 mm	3015918
Probe pin /tip:	dia. d = 1.2 mm	l = 75 mm	3015919
		ls = 15.5 mm	
Taper probe	dia. d = 0–7.5 mm		3015920
Spherical probe	TC dia. dk = 3 mm	l = 24 mm	3022000
Spherical probe	TC dia. dk = 2 mm	l = 24 mm	3022001
Spherical probe	TC dia. dk = 1 mm	l = 24 mm	3022002
Extension M3 – M3	d = 4 mm	l = 20 mm	3015921
Extension M3 – M2.5	d = 4 mm	l = 20 mm	3015888
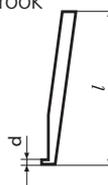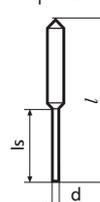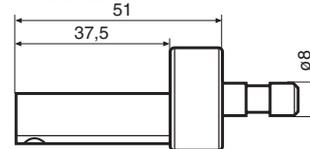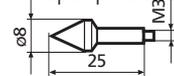
Measuring crook Pin probe Taper probe Probe carrier Spherical probe Extension