



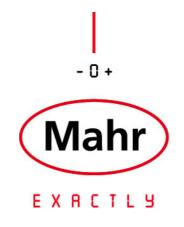
نماینده انحصاری کمپانی Mahr آلمان





MARSHAFT I MANUAL SHAFT MEASURING UNITS





MarShaft MAN Shaft Measuring Unit



Advantages at first sight

• A measuring instrument for multiple measuring tasks

- Convincingly suitable for the workshop: Use the instruments near the machines directly in the production area.
- Extreme easy handling
- · Quick change of the workpieces
- No new calibration necessary when changing the workpiece
- Measuring results are independent of operator influence because of attaining always the same constant measuring force
- An extraordinary high measuring accuracy also under normal workshop conditions
- Exceptional price / performance ratio

MarShaft MAN Shaft Measuring Unit for testing rotationally symmetrical parts

MarShaft MAN is a modularly constructed shaft measuring center for the fast and flexible complete measurement of shaft-shaped specimens.

MarShaft MAN shaft measuring units are mainly used as workshop measuring machines. The high repetitive accuracy, however, makes the unit suitable for use in metrology labs.

The measuring instrument is available in different sizes and can be optimally adapted to the respective measuring tasks due to its modular construction.

Typical measuring tasks are:

Diameter, lengths, distances, incremental dimensions, radial run-out, axial run-out, symmetry, depths, recesses, angles, radii, tapers and many other features on shaft-shaped parts.

For special measurements, e.g. for thread pitch, position measurements and index angles, workpiece-specific measuring inserts are necessary, which are not within the scope of supply. Workpiece specific measuring inserts can be made upon request.

We reserve the right to make changes due to technical progress and further development. We therefore do not guarantee the correctness of the pictures and details provided.

MarShaft MAN Shaft Measuring Unit

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MarShaft MAN Shaft Measuring Unit Configurations / Measuring Ranges

Unit type	Configuration AS 5	Configuration AS 10	All Configurations	
	Measuring range Length (Z-axis)	Measuring range Length (Z-axis)	Measuring range Ø (X-axis)	
MarShaft Man 400	500 mm	300 mm	120 mm	
MarShaft Man 800	900 mm	700 mm	120 mm	
MarShaft Man 1200	1300 mm	1100 mm	120 mm	
MarShaft Man 1600	1700 mm	1500 mm	120 mm	
MarShaft Man 2000	2100 mm	1900 mm	120 mm	

Technical data:

Resolution of the length measuring system (Z-axis):

Error limit (Z-axis):

Resolution of the diameter measuring system (X-axis):

Error limit (X-axis):

Maximum workpieces weicht:

Adjustable 0,005 mm / 0.001 mm (alternatively 0.00001 inch / 0.00005 inch)

 $(7+L/100) \ \mu$ m, L (Length) in mm (Unitron) (3+L/100) \ \mum, L (Length) in mm (Mar Check)

Adjustable 0.001 mm / 0.0001 mm (alternatively 0.00005 inch / 0.000005 inch)

(0.5+L/100) μ m, L (Length) in mm

20 kg (MarShaft MAN 400/800) 60 kg (MarShaft MAN 1200/1600/2000) +



MarShaft MAN Shaft Measuring Units



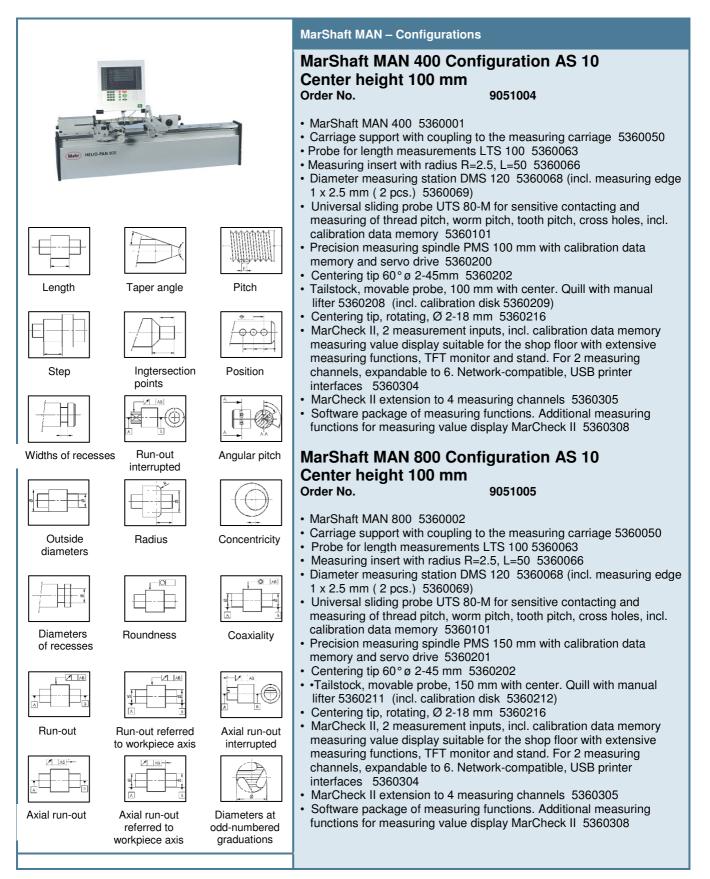
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MarShaft MAN Shaft Measuring Units

		MarShaft MAN – Configurations
Mahr HELIO-PAN 800		MarShaft MAN 400 Configuration AS 5 Center height 100 mm Order No. 9051001 • MarShaft MAN 400 5360001 • Probe for length measurements LTS 100 5360063
	Length	 Diameter measuring station DMS 120 5360068 Measuring edge 1 x 2.5 mm (2 pcs.) 5360069 Tailstock, movable probe, 100 mm with center. Quill with manual lifter 5360208 Calibration disc 5360209 Centering tip Ø 2-17mm (pair) 5360215 Tailstock stationary, laterally adjustable, 100 mm, with center 5360210
	Step	 Digital display unit UNITRON 2 CHA with interface RS 232 C complete, 2-channel measuring value display with connecting cable 5360300 Stand for Unitron 2 CHA 5360303 MarShaft MAN 800 Configuration AS 5 Center height 100 mm
	Width of recesses	Order No.9051002• MarShaft MAN 800 5360002• Probe for length measurements LTS 100 5360063• Diameter measuring station DMS 120 5360068• Measuring edge 1 x 2.5 mm (2 pcs.) 5360069
	Outside diameter	 Tailstock, movable probe, 100 mm with center. Quill with manual lifter 5360208 Centering tip Ø 2-17mm (pair) 5360215 Tailstock stationary, laterally adjustable, 100 mm, with center 5360210 Digital display unit UNITRON 2 CHA with interface RS 232 C 5360300
	Diameter of recesses	Stand for Unitron 2 CHA 5360303
		MarShaft MAN 800 Configuration AS 5 Center height 150 mm Order No. 9051003
	Run-out	 MarShaft MAN 800 5360004 Probe for length measurements LTS 100 5360063 Diameter measuring station DMS 120 5360068 Measuring edge 1 x 2.5 mm (2 pcs.) 5360069 Calibration disc 53602121 Tailstock, movable probe, 150 mm with center 5360213 Centering tip Ø 2-17mm (pair) 5360215 Tailstock stationary, laterally adjustable, 150 mm, with center 5360211 Digital display unit UNITRON 2 CHA with interface RS 232 C 5360300 Stand for Unitron 2 CHA 5360303

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MarShaft MAN Shaft Measuring Units



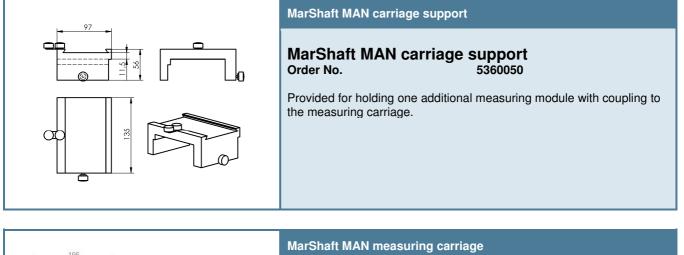
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MarShaft MAN Shaft Measuring Units

		MarShaft MAN – Configurations
		 MarShaft MAN 800 Configuration AS 10 Center height 150 mm Order No. 9051006 MarShaft MAN 800 5360004 Carriage support with coupling to the measuring carriage 5360050 Probe for length measurements LTS 100 5360063 Measuring insert with radius R=2.5, L=50 5360066 Diameter measuring station DMS 120 5360068 (incl. measuring edge 1 x 2.5 mm (2 pcs.) 5360069) Universal sliding probe UTS 80-M for sensitive contacting and measuring of thread pitch, worm pitch, tooth pitch, cross holes, incl. calibration data memory 5360101 Precision measuring spindle 150 mm with calibration data memory and servo drive, with center 5360201 Centering tip 60° ø 2-45mm 5360202 Tailstock, movable probe, 150 mm with center, quill with manual lifter 5360211 (incl. calibration disc 5360212) Centering tip, rotating, Ø 2-18mm 5360216 MarCheck II, 2 measurement inputs, incl. calibration data memory measuring value display suitable for the shop floor with extensive measuring functions, TFT monitor and stand. For 2 measuring channels, expandable to 6. Network-compatible, USB printer interfaces 5360304 MarCheck II extension to 4 measuring channels 5360305 Software package of measuring functions. Additional measuring functions for measuring value display MarCheck II 5360308
Widths of recesses Run-our interrup Image: Constraint of the constraint of t	Image: series of the series	 MarShaft MAN 1200 Configuration AS 10 Center height 150 mm Order No. 9051007 MarShaft MAN 1200 5360005 Carriage support with coupling to the measuring carriage 5360050 Probe for length measurements LTS 100 5360063 Measuring insert with radius R=2.5, L=50 5360066 Diameter measuring station DMS 120 5360068 (incl. measuring edge 1 x 2.5 mm (2 pcs.) 5360069) Universal sliding probe UTS 80-M for sensitive contacting and measuring of thread pitch, worm pitch, tooth pitch, cross holes, incl. calibration data memory 5360101 Precision measuring spindle 150 mm with calibration data memory and servo drive, with center 5360202 Tailstock, movable probe, 150 mm with center, quill with manual lifter 5360211 (incl. calibration disc 5360212) Centering tip, rotating, Ø 2-18mm 5360216 MarCheck II, 2 measurement inputs, incl. calibration data memory measuring value display suitable for the shop floor with extensive measuring functions, TFT monitor and stand. For 2 measuring channels, expandable to 6. Network-compatible, USB printer interfaces 5360304 MarCheck II extension to 4 measuring channels 5360305 Software package of measuring functions. Additional measuring functions for measuring value display MarCheck II 5360308

MarShaft MAN Accessories



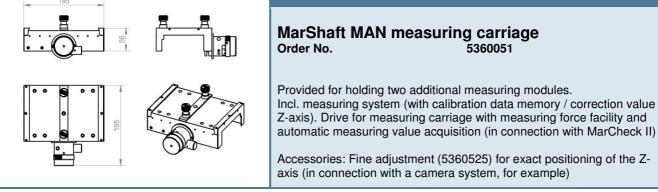


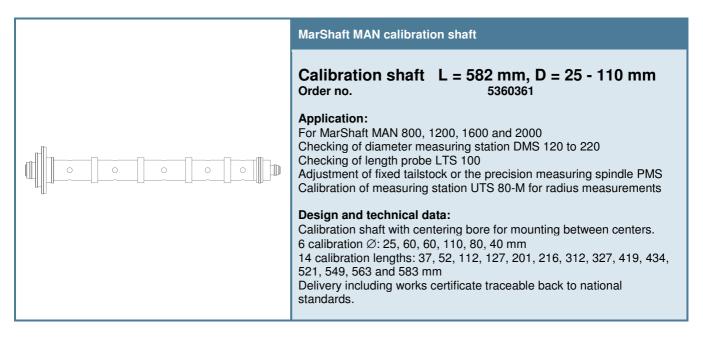
 Image: MarShaft MAN protection V-blocks

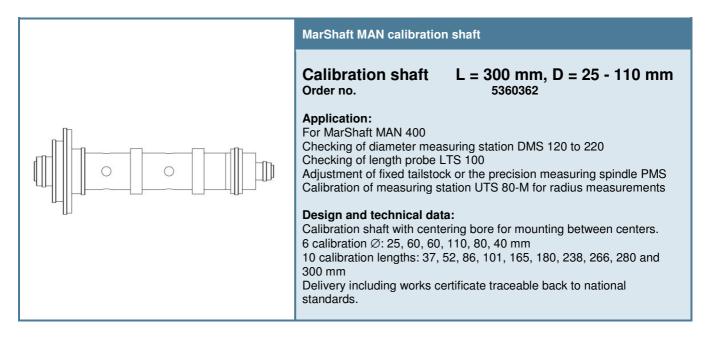
 Image: MarShaft Mar

MarShaft MAN protection V-blocks MarShaft MAN protection V-blocks Protection V-blocks for basic unit with center peak 150 mm Order No. 5360053 Protects the instrument bed and workpieces from damages when inserting or removing the specimen. Design: Grey plastic with fixation in T-slot.

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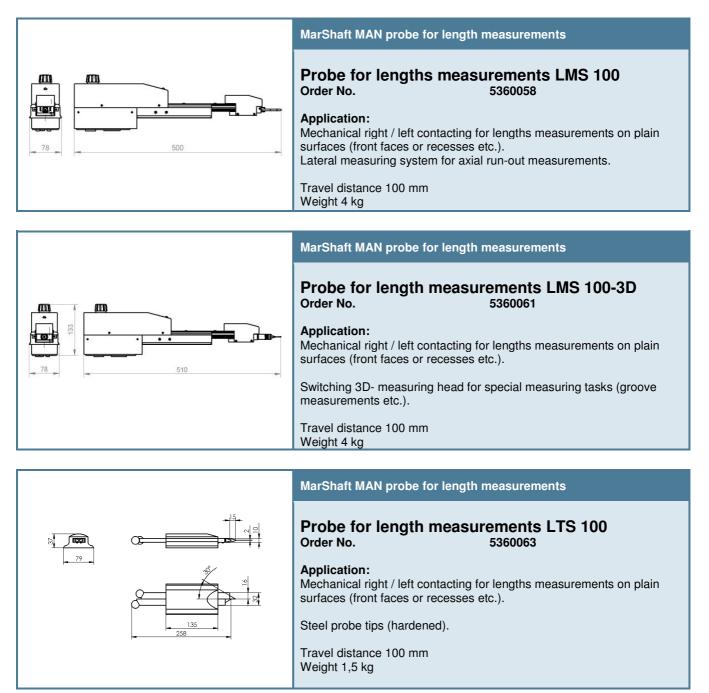
MarShaft MAN Accessories





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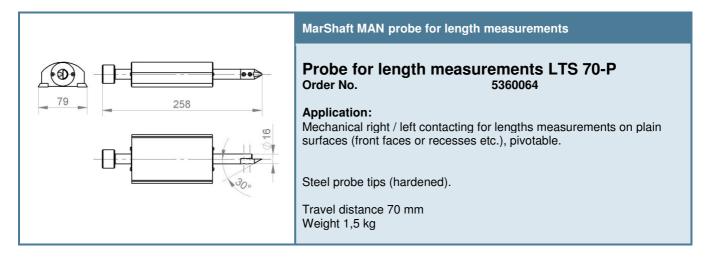
MarShaft MAN – Accessories

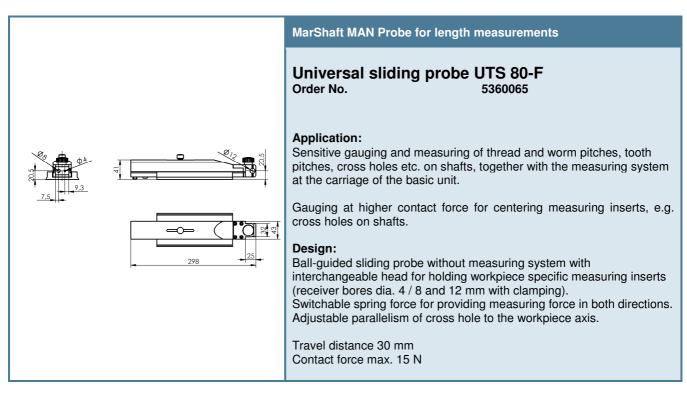


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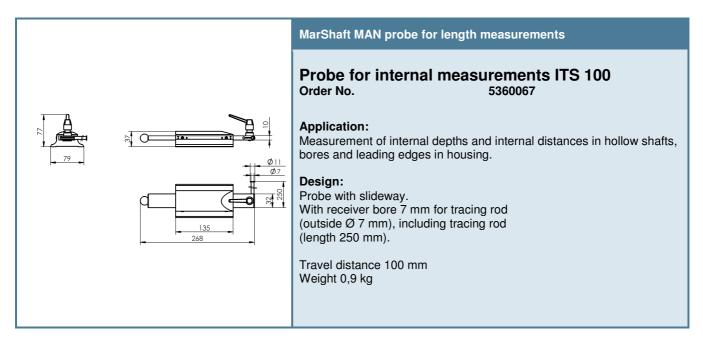
MarShaft MAN Accessories

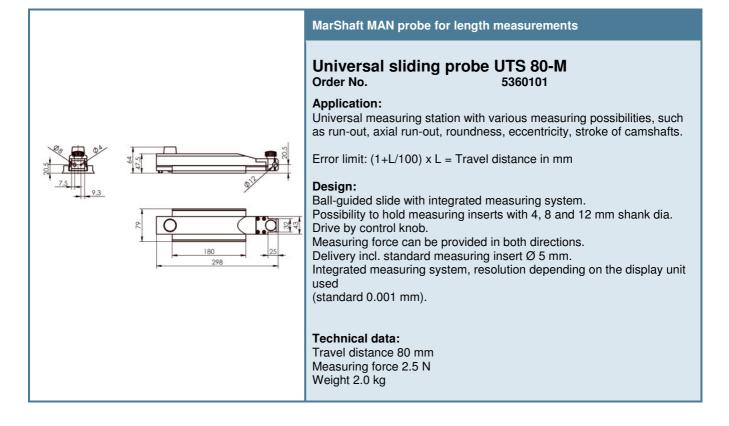




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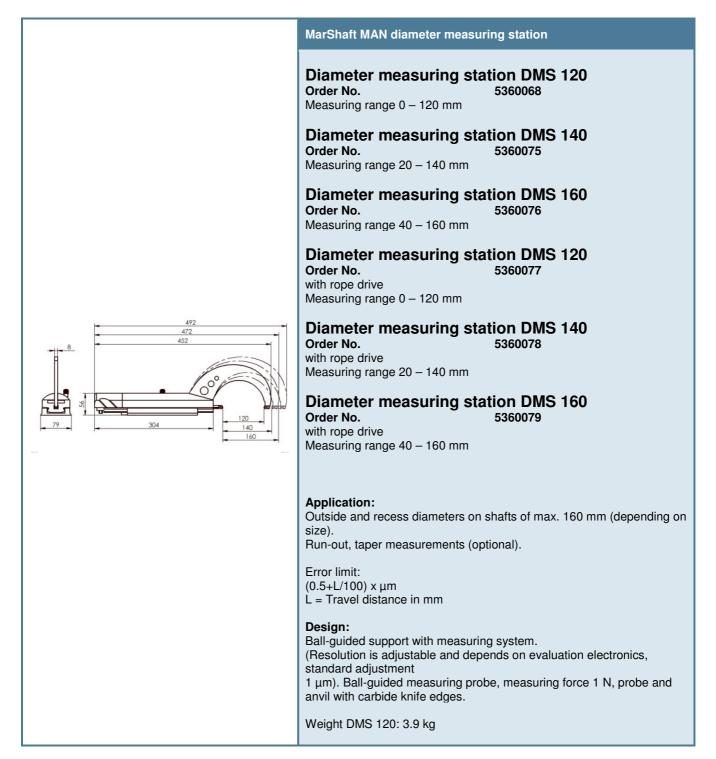
MarShaft MAN Accessories





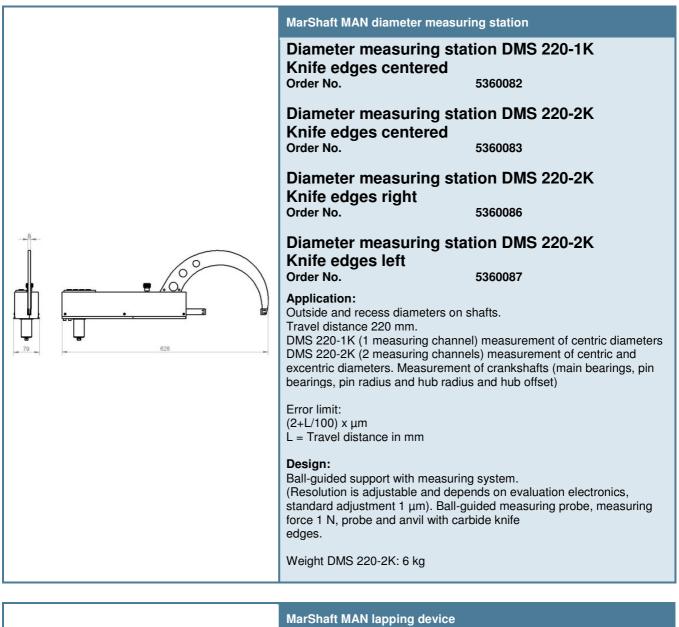


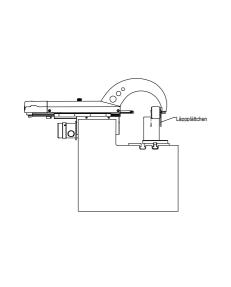
MarShaft MAN Accessories





MarShaft MAN Accessories





Lapping device for DMS SH 100 Order No. 5360090

Lapping device for DMS SH 150 Order No. 5360100

Application:

Parallel lapping of new inserted DMS-knife edges as well as for relapping of worn knife edges.

Design:

The lapping device consists of a basic body, which can be clamped in the clamping nut of the MarShaft MAN and a lapping rail. The lapping rail is mounted perpendicular to the measuring axis of the DMS and enables straight guidance when lapping. The parallelism of both opposite measuring surfaces is checked with a measuring pin. The dimension in the display unit shows the parallelism.

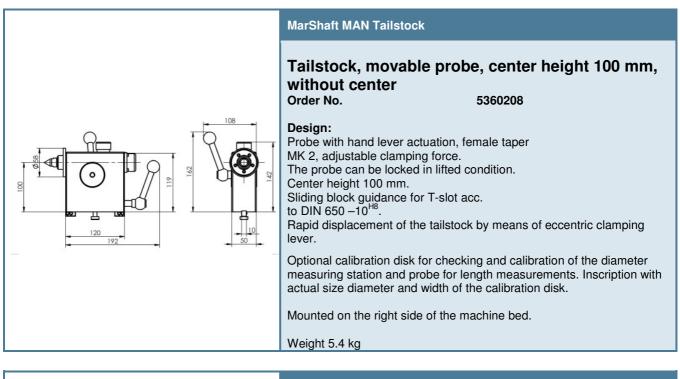


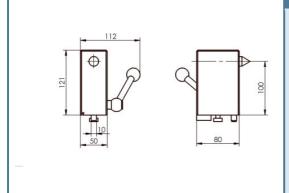
MarShaft MAN Accessories

	MarShaft MAN precision measuring	ng spindle
		5360200
	Precision measuring spir Center height 150 mm Order No.	5360201
	Application: For holding various workpiece seats	s, angle measurements
	Design: Connecting flange with pivot bearing. Center height 100 mm or 150 mm. Accuracy of run-out < 0.002 mm. Shaft encoder (resolution 0.01°/ 0.001°). Motor drive, disconnectable by notch lever. Basic body with sliding block guidance for T-slot DIN 650-10 ^{H8} (center height 100), 14 ^{H8} (center height 150). Weight 11 kg (center height 100), 15 kg (center height 150)Optional extensions:	
Y P P P P P P P P P P	Center point 60°Ø 2-45 m Order No.	nm 5360202
	Retaining bolt for PMS Order No. For reliable fixation of the specimen	5360203 for angle measurements
	Self-centering chuck Ø 10 Order No. Outside diameter 100 mm Clamping width 100 mm Weight 5,0 kg Run-out adjustable	00 mm ⁵³⁶⁰²⁰⁴
	Permanent magnet Ø 100 Order No. Receiver bore Ø 10 ^{H7} , depth 12 mm Weight 2,7 kg	5360206
	Holding adapter MK 2 Order No. For holding centers with location tap	5360207 ber MK 2

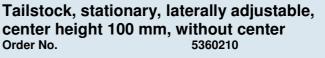
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MarShaft MAN – Accessories





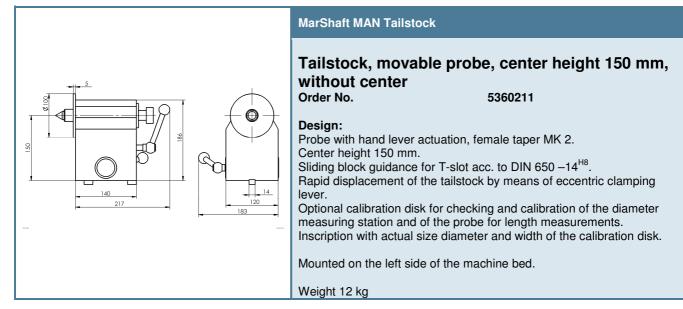
MarShaft MAN Tailstock



Design: Female taper MK 2. Center height 100 mm. Sliding block guidance for T-slot acc. to DIN 650-10^{H8}.

Mounted on the left side of the machine bed.

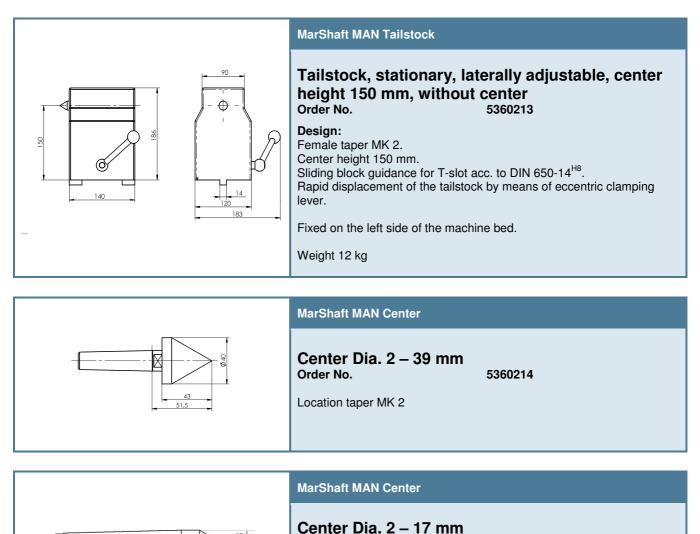




MarShaft MAN Accessories

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Order No.

Order No.

rotating

Location taper MK 2

MarShaft MAN Center

Location taper MK 2

Center angle 60°

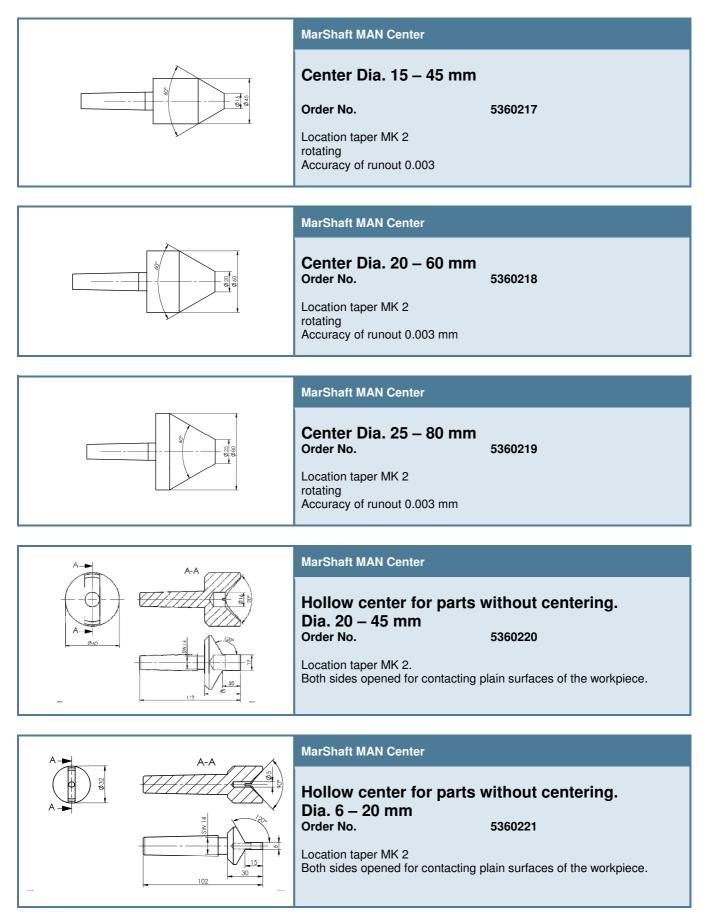
Center Dia. 2 – 18 mm

Accuracy of runout 0.002 mm

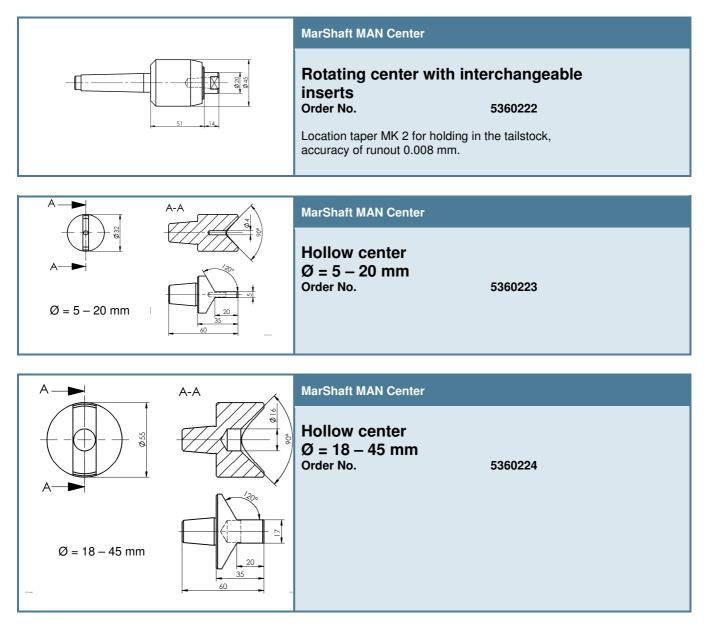
5360215

5360216

MarShaft MAN Accessories

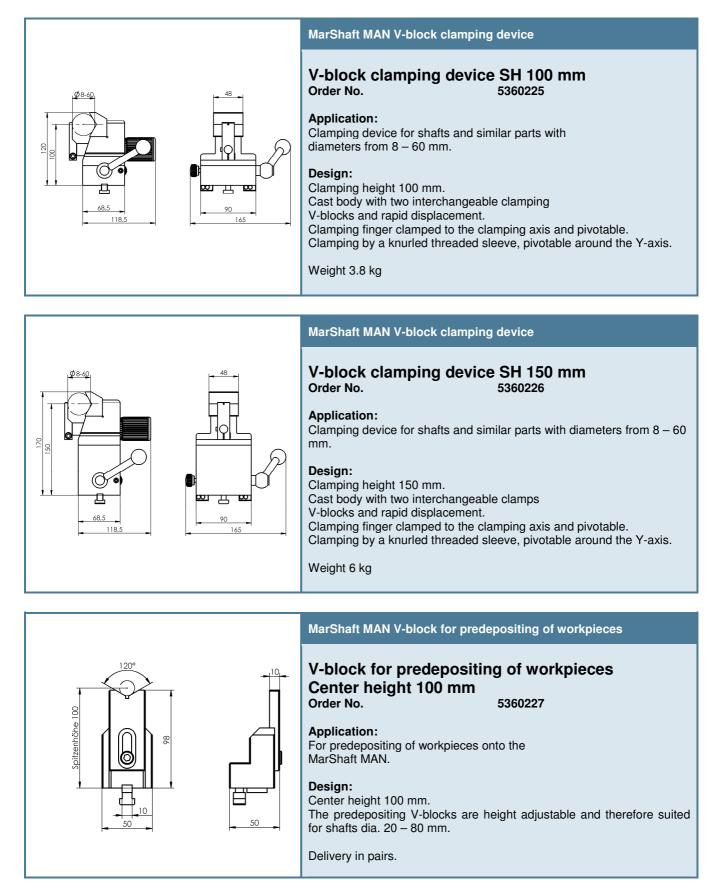


MarShaft MAN Accessories



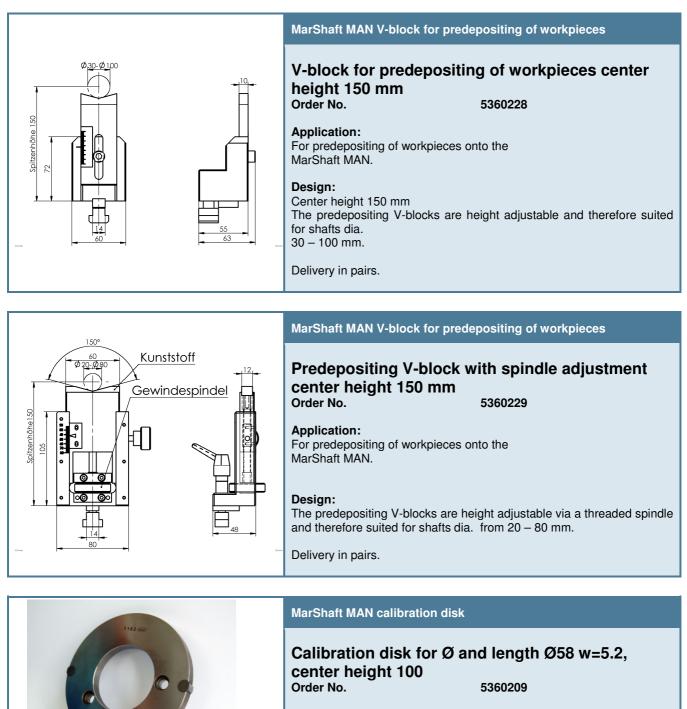
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MarShaft MAN Accessories



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MarShaft MAN Accessories



Calibration disk for Ø and length Ø99 w=8.2, center height 150 Order No. 5360212

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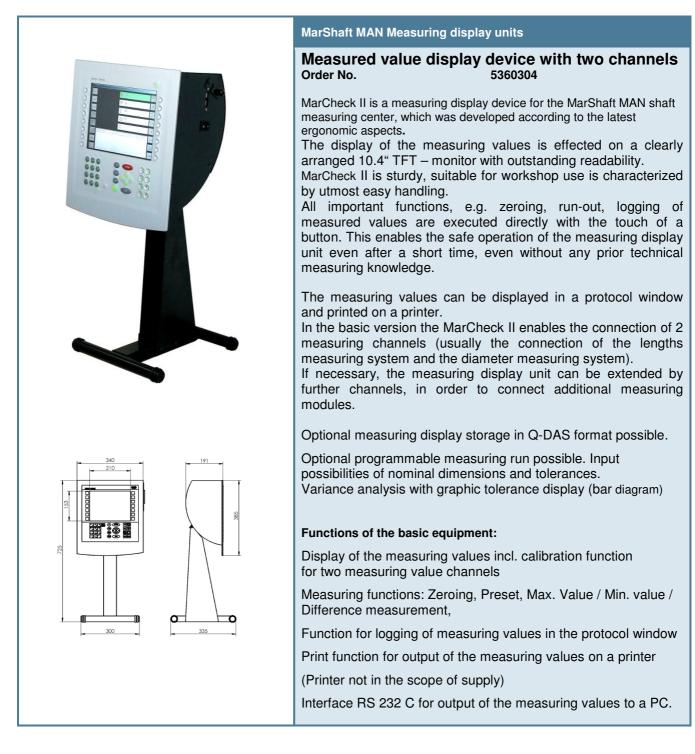
MarShaft MAN Measuring Display Units

	MarShaft MAN Measuring display units
	UNITRON 2 CHA Measuring display unit Order No. 5360300
	Description: Low cost 2 channel display unit including connecting cable to the MarShaft MAN shaft measuring center. 10 digit display, digit height 13 mm.
Unitron 2 CHA	Resolution: 0.0001 / 0.001 / 0.005 mm resp. 0.00005" / 0.000010" / 0.000005"
	Interface: V24 (RS 232 C)
	Dialog display: 16-digit display, for convenient operator guidance with password protection.
	Accessories:
259 - 180 -	Cable for PC connection, 2 m Order No. 5360301
	Cable for PC connection, 3 m Order No. 5360318
	Footswitch for Unitron Order No. 5360302
	Stand for UnitronOrder No.5360303

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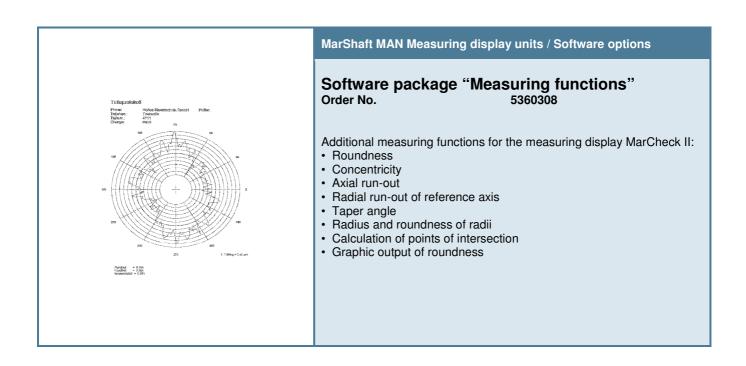


MarShaft MAN Measuring Display Units



MarShaft MAN Measuring Display Units / Software options

	MarShaft MAN Measuring display units
Start X P 0.0000 C Prog R = 0.0000 C Teach Z = 0.0000 UNX	Accessories for MarCheck II: Cable for PC connection, 2 m
Zp 0.0000 IIII C 0.0000	Order No. 5360316 Cable for PC connection, 3 m
Nr Bezeichnung Nenmaß OT/UT[Istmaß Balkendiagramm	Order No. 5360317 Remote switch for MarCheck II Order No. 5360307
Vieter	External keyboard and mouse Order No. 5360310
	Extension for 3 rd and 4 th measuring value channel Order No. 5360305
	Extension for 5 th and 6 th measuring value channel Order No. 5360306



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MarShaft MAN Software options

Para Teaching: X I= 0.0000	MarShaft MAN Measuring display units / Software options
Bezug inks Bezug i setzen Plant12 Ptotokollieren Länge1 Protokollieren Länge2 Protokollieren Länge3 Protokollieren Länge3 Protokollieren Länge3 Protokollieren Länge3	Software package "Programmable measuring sequence" Order No. 5360309
Nr/Bezeichnung Nenmaß OT/UT/Istmaß Balkendiagramm	The software package "Programmable measuring sequence" enables the creation of user-guided measuring programs.
I Länge1 21.000 0.100 21.026 UT TM OT 2 Länge2 30.000 0.100 29.967 UT TM OT 3 Länge3 58.000 0.100 58.069 UT TM OT	The program generation is conducted using the so-called Teach-In procedure:
	A specimen is measured step by step. After each checking inspection criterion, the nominal sizes and the tolerances for the corresponding feature will be asked for and entered by the operator. For each inspection criterion, any additional text can be entered, which enormously supports the operator during the programmed measuring sequence. The checking steps, nominal sizes and tolerances will then be stored under a program no. in the measuring display unit.
Helios Bachwiesenstr. 6 07940 / 1308-0 74575 Niedemhall www.helios-messtechnik.de	The external storage of the measuring programs is also possible with the help of a USB Memory Stick.
Messanitad: HELIO PAN II Teileprotokali Firm a: Helios-Messlechnik, GmbH Prügr-Nr. 10 Teileprotokali Teilen: 2001 Teilepez: Kalbmeinik GmbH Teilen: 2001 Teilepez: Kalbrierweile Teilen: 2001 Nr Bezeichnung Nenn a.0 OT/UT Mr OD 2000 Nr Bezeichnung Nenn a.0 OT/UT Mr OT 0.002 Nr Bezeichnung Nenn a.0 OT/UT Mr OT 0.002 2 X2 50.000 6000 2002 T Mr Mr 07 0.002 3 Zp1 260.000 6000 2002 T Mr Mr 07 0.002 T Mr Mr 07 0.002 T Mr Mr 07 6 Rundhauf 1 0.000 6000 0.001 UT T Mr 07 6 Rundhauf 2 0.000 6000	 After selection of the program no. the programmed measuring sequence can be repeated as desired. During measuring program, the operator will be guided from inspection criterion to inspection criterion feature to by a dialog window on the screen, until the entire workpiece is completely measured. After each measuring step the determined actual size and a bar chart appear in the protocol window, which show the position of the measuring value in regard to the tolerance. The measuring protocol can be printed on a commercially used printer. (Printer not included in the scope of supply.) In connection with the software package "Programmable measuring sequence", measuring protocols can be printed on printers, which in addition to the actual dimensions also include the nominal dimensions, upper and lower tolerance and a bar chart.



MarShaft MAN Software options

MarShaft MAN Measuring displa	y units / Software options
Software package "Q – I Order No.	DAS Interface" 5360311
Software "Taper position Order No.	า" 5360312
Software "Crankshaft" Order No.	5360313
Software "Run-out intern Order No.	rupted" 5360314
Software "Gearing tip cit Order No.	r cle" 5360315

MarShaft MAN Software options

MarShaft MAN Other
Country version German Order No. 5362350
MarCheck II software, keyboard and operation manual in German
Country version English Order No. 5362351
MarCheck II software, keyboard and operation manual in English
Included in delivery
Additional country versions upon request



Note:

