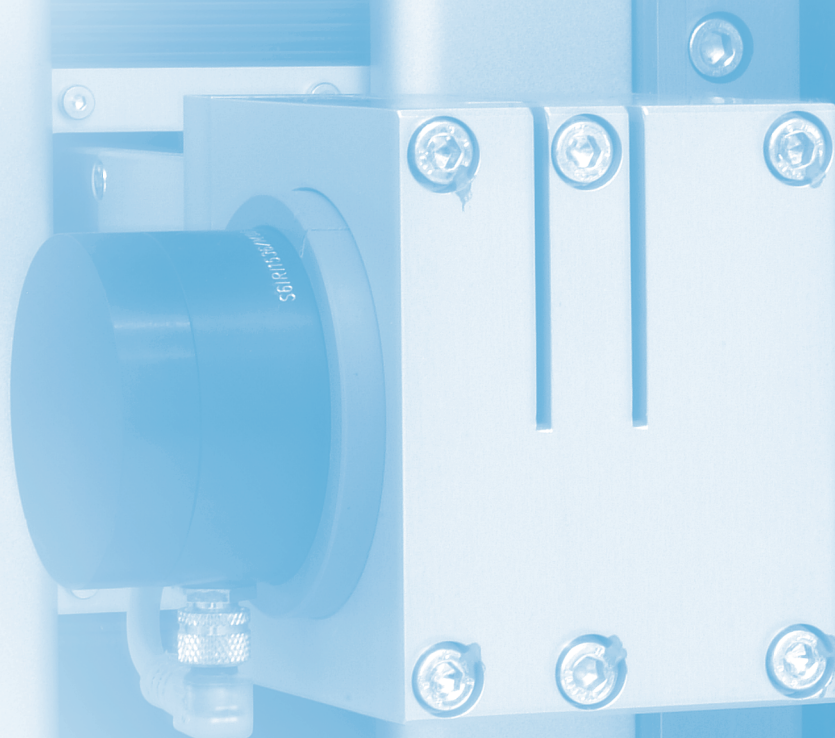


MAXIMUM PRECISION OF SHAFT-SHAPED PARTS ON THE SHOP FLOOR.

SHAFT METROLOGY FROM MAHR



The latest information on MARSHAFT products can be found on our website:
www.mahr.com, WebCode 11935



► I In order to be able to produce the growing variety of parts cost-effectively, manufacturers now require not only flexible production facilities, but also equally flexible measuring equipment. This is particularly true of the automotive industry and its suppliers. Given that customized vehicles with different engines and transmission systems are now the norm, items such as shaft-shaped parts need to be manufactured in a number of different designs, then measured and tested for quality assurance purposes. To measure the different parts produced in small lots, it is not cost-effective to purchase and maintain the individual multi-gaging units that were used in the past for these customized designs. A better option is to use a universal measuring machine. Such a machine should be able to adapt very quickly and flexibly to a number of different designs while also allowing fast quality assurance thanks to short measuring times. Mahr has a number of appropriate solutions.

► | MarShaft. Shaft Measuring Systems

MarShaft. Measurement of Shaft-Shaped Parts on the Shop Floor

19- 2

MarShaft MAN

Manual Tactile Shaft Measuring Machine

19- 3

MarShaft SCOPE plus

Optical Shaft Measuring Machine

19- 3

MarShaft CNC

Automatic Tactile Shaft Measuring Center

19- 4

MarShaft

Data Overview

19- 5

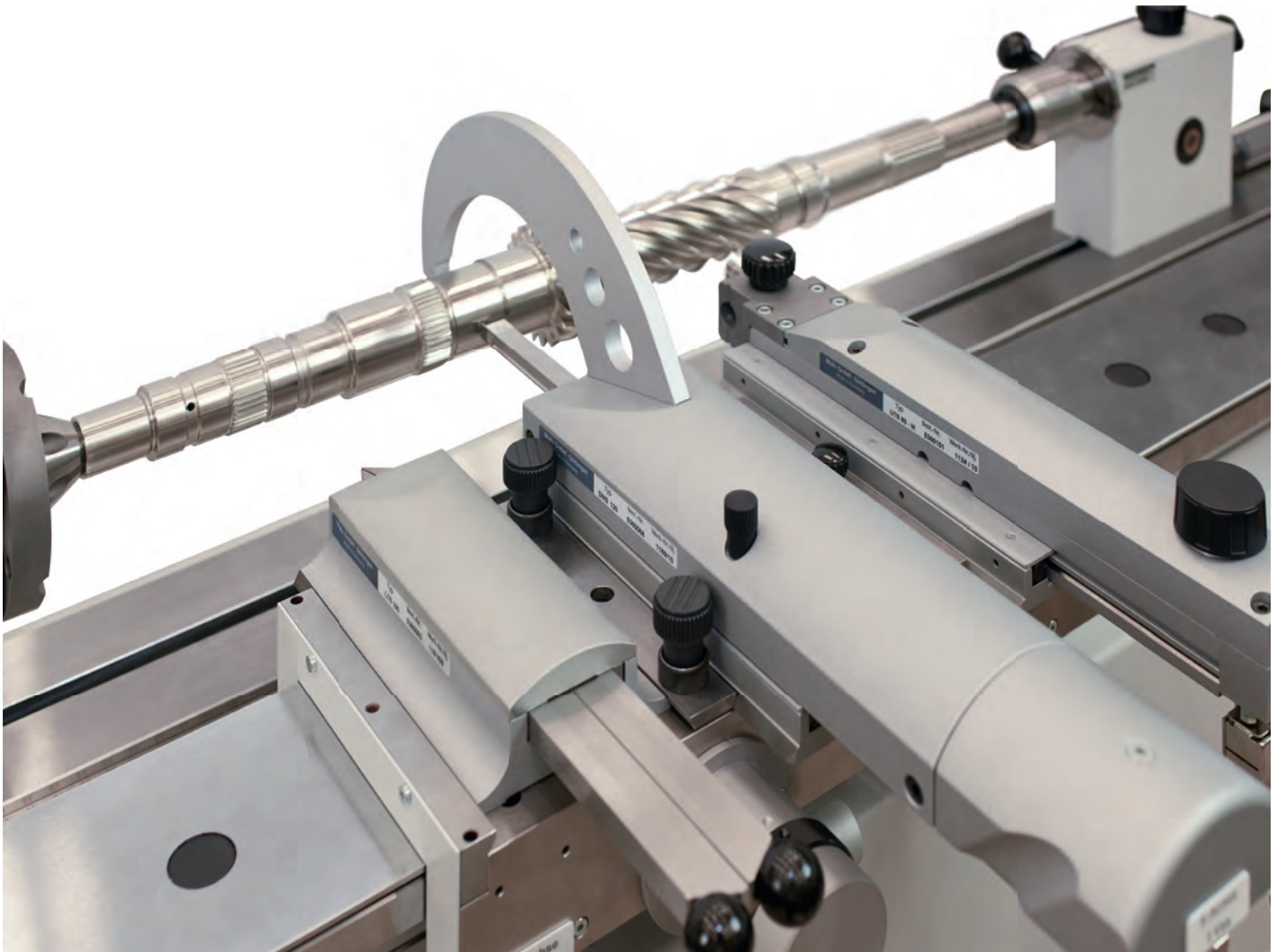
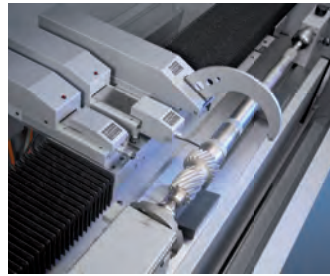


Request a brochure.

MarShaft.

MEASUREMENT OF SHAFT-SHAPED PARTS ON THE SHOP FLOOR

► I MarShaft shaft measuring machines are primarily used on the shop floor but their excellent measuring accuracy means they can also be used in measurement laboratories. The machines come in various sizes and, thanks to their modular design, can be optimized to suit the relevant measuring tasks. Measuring directly on the shop floor during production saves you having to perform time-consuming measurements in the inspection room and improves product reliability. I ◀



MarShaft MAN

Description

The modular design of the **MarShaft MAN** shaft measuring machine allows rotationally symmetrical parts to be measured quickly and flexibly.

- No operator influence
- Highly accurate measuring results
- Excellent repeatability
- Measuring system for all typical measuring tasks such as length, diameter, radial run-out, axial run-out, groove width, taper angle, roundness, coaxiality, concentricity and many others besides

Features

- Measuring force regulator to avoid operator influences
- Ideal for use on the shop floor so can be used directly in production environments
- **MarCheck** display unit which is easy to operate (2 models)

Application

Measurement of round parts such as:

- Gear shafts, camshafts, crankshafts, drive shafts, toothed racks, hollow shafts, etc.

Manually operated shaft measuring machine



Request brochure or see WebCode 12098.

MarShaft SCOPE plus

Description

Optical measuring instrument for turned parts with matrix camera for direct use on the shop floor.

- Flexible optical measuring system for round parts
- Maximum precision directly on the shop floor
- Reliable measuring results without operator influence

Features

- Matrix camera, camera picture approx. 8 mm x 8 mm (0.31 x 0.31 in)
- Easy operation thanks to touchscreen monitor
- Record generator

Application

Measurement of round parts such as:

- Precision turned parts, camshafts, drive shafts, gear shafts, toothed racks, hollow shafts, etc.
- Tactile measuring unit for radial and axial run-outs (optional)
- Temperature compensation (optional)
- Thread software (optional)

Optical shaft measuring machine



Request brochure or see WebCode 12106.

MarShaft CNC

Automatic shaft measuring system



Request brochure or see WebCode 12107.

Description

The flexible **MarShaft CNC** shaft measuring system automatically inspects shaft-shaped parts with maximum precision during production.

- Automatic measuring process
- Maximum flexibility as virtually no changeover time required
- Simple operation

Features

- No operator influence on the measuring results
- Short measuring times
- Ideal for use on the shop floor

Application

Measurement of shaft-shaped parts with all kinds of different geometries

- Gear shafts
- Drive shafts
- Toothed racks
- Hollow shafts
- Camshafts

Measuring and Evaluation Unit MarCheck



Description

- The measuring and evaluation computer MarCheck serves to calculate, process and display measuring and form deviations.
- The operation of the unit can be quickly learned. The operator is guided through the menus and can specifically conduct the measurements using the operation keys.
- Retrofit package for numerous shaft and length measuring units

Features

- 3 measuring channels, can be freely configured
- Large display
- All 3 measuring channels can be displayed at once
- Possibility to create records
- Modern interface USB e.g. data export to external PC
- Learning programming
- Increased measuring accuracy due to correction data
- Resolution: switchable in increments from 0.0001 to 0.1 mm

MarShaft. Data Overview



	MarShaft MAN	MarShaft SCOPE	MarShaft CNC
Measuring Range			
Length (Z) (mm)	400 / 800 / 1600/ 2000 / 2400	350 / 750 / 1000	700 / 1100 / 1600
Diameter (X) (mm)	120 or 220	80 or 120	120 or 220
Workpiece			
Weight (max.) (kg)	20/60	15	30 or 80
Resolution (settable)			
Lengths/Diameter (mm)	0.0001	0.01 to 0.0001	0.001 / 0.0001
Angle (Degree)	0.001	0.01 to 0.0001	0.01
Error Limits*			
Lengths (μm), L (length) in mm	(3+L/100)	(2+L/125) SCOPE 1000: (3+L/125)	(2+L/100)
Diameter (μm) L (lengths) in mm	(0.8+L/100)	(1.5+L/125) SCOPE 1000: (2+L/125)	(0.5+L/100)
Drive	Manual	Servo motors	Servo motors
Optics	Camera or measuring microscope possible	Telecentric precision lens system, high-resolution CCD array	-

* (2 σ at 20 °C ± 1 °C relative to reference standard)

MarCheck. Technical Data

Dimensions (L x W x H)	260 mm x 180 mm x 50 mm
Weight	Electronics with plug-in power supply: 2 kg (without unit base)
Display	LCD monochrome, 240 x 160 pixels with background illumination Digit size measuring axes ca. 13 mm
Resolution per measuring channel can be independently set	0.0001 mm; 0.001 mm; 0.01 mm 0.00001 inch; 0.0001 inch; 0.001 inch 0.001°decimal; ° min, sec
Incremental inputs	T1; T2; T3 sin/cos 1Vss 15 pol. sub D
Data interfaces	1x RS 232, 1x USB slave connection to PC for data exchange and software installation, 1 x USB master 16FAT max. 3 GB USB stick; connection to USB printer, preferably Mahr no. 4429015 Only the print record HP PCL5 is supported
Unit of measure	mm / inch can be set in the MENU