



# آزما صنعت گراد



نماینده انحصاری کمپانی **Mahr** آلمان



EXACTLY

# MarForm



## **NEW.** MarForm MMQ 100 with EasyForm Form measurement made easy!

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► | **Test the quality of your products in the production environment.** Despite the fact that the benefits of monitoring quality in the manufacturing environment have been recognized by many companies, a large number of businesses have until now been reluctant to implement form testing at the production machine. The instruments required for this are too expensive, too sensitive and too complicated to operate. Simpler devices do not offer the required evaluation and documentation options. Therefore, either the slow process of sending products to the precision inspection room must be accepted or, to be on the safe side, production is made more accurate and thus more expensive. The high-precision, robust and easy-to-use MMQ 100 represents the solution to this problem. | ◀

## MarForm MMQ 100

The easy-to-use measuring instrument.



### Features

The MarForm MMQ 100 offers outstanding accuracy in a robust package designed for use in production environments.

Used in combination with the EasyForm software, it represents the perfect solution for simple, yet powerful measuring tasks.

- Precise and fast measurement results
- Reliable thanks to mechanical bearings
- Large measuring volume
- Mobile due to low weight and convenient size
- Fast workpiece alignment thanks to computer support
- Centering and tilting screws for rough and fine adjustment
- Universal and reliable
- Suitable for use in workshops since no compressed air connection is required
- No keyboard or mouse required
- Digital transmitters in Z and X transmit the measuring position directly to the software

The MMQ 100 can also be operated from a laptop, thus enabling mobile use. All you need is a power outlet!

#### Optimized for frequent form measuring tasks

- Roundness (also in a section)
- Flatness (from one circle)
- Concentricity
- Coaxiality
- Radial run-out
- Axial run-out
- Plane parallelism from two opposite circles
- Fourier/waviness analysis

(1) from a polar trace

## EasyForm Touchscreen Software

If you want to use a form measuring instrument in a production environment, you don't want to have the hassle of a keyboard and a mouse.

The **touchscreen operation** makes measurement child's play. All the necessary functions are available at the touch of your fingertip. The number of steps required to produce a record is minimized, enabling you to reduce your personnel and operating costs. You can perform a roundness measurement in two simple steps. What is more, the software guides you through each setting you want to make.

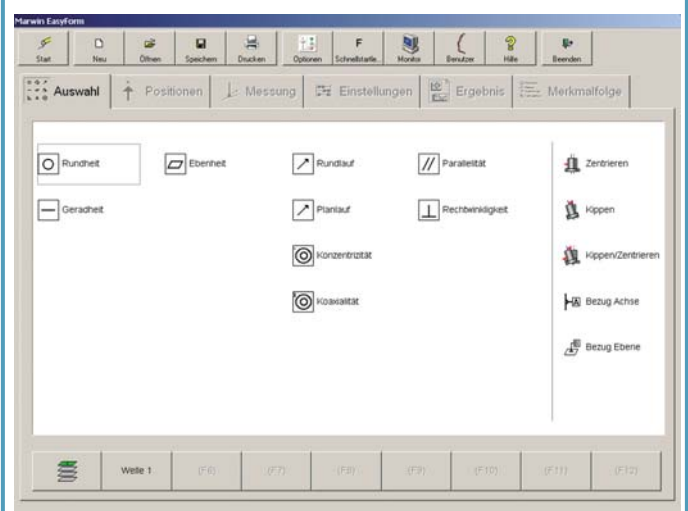
The **EasyForm software** records each step of your measurements. No matter whether you want to repeat the most recent measurements or decide to combine various measurements and evaluations of a workpiece in a feature sequence, programs can be created interactively in the **EasyForm teach-in mode**.

You can save your measuring tasks under one of the programmable function keys.

**EasyForm** is based on highly optimized **MarWin** measurement and evaluation routines and can be combined with other **MarWin** modules. EasyForm operates under the Windows® operating system and features functions for user administration, network support and for electronic storage of records, and can be expanded for future options.

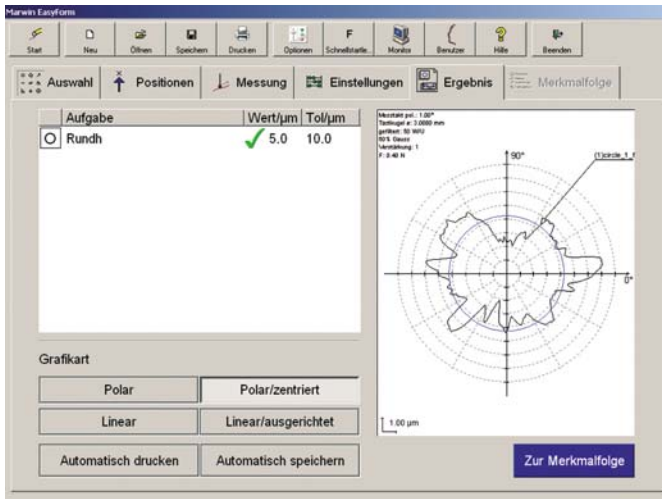
### The easiest way of operating a measuring instrument.

- Intuitive user interface for immediate measurements
- Interactive, automatic program creation
- 3D representation of flatness - in color or also with grid lines and interactive graphic preview
- Immediate display of measuring results on the screen
- Concise measuring records on the screen, as a file (also in the network) or on paper (any Windows printer)
- Operating system: Windows® 2000 or Windows® XP

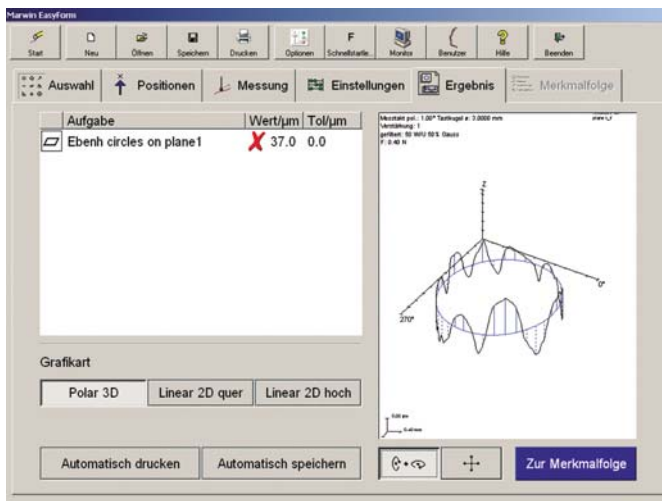


## EasyForm Touchscreen Software

In order to be able to identify production errors immediately and eliminate them as quickly as possible, metrology is more important than ever for testing form and positional deviations. It helps you to minimize time-consuming and costly reworking and rejection rates. But these measurements must not put undue stress on your workforce. It must be possible to perform them quickly, easily and without the possibility of operator error. Clear icons and logical defaults minimize the need for data entry.

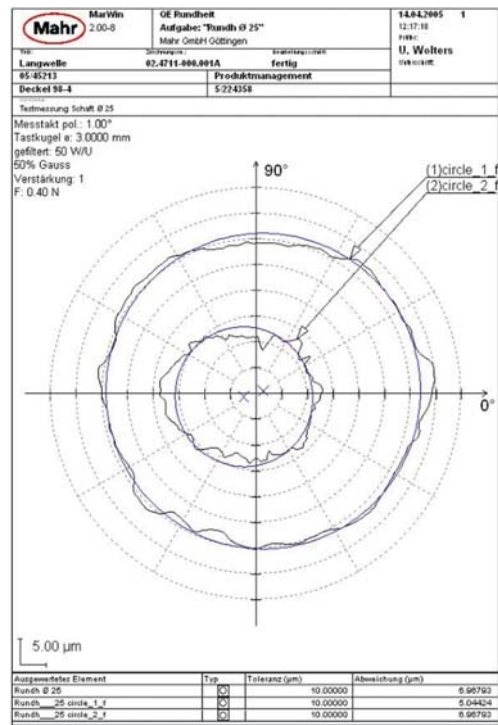


Workpiece alignment is supported by the computer. The measuring position is automatically recorded by the software. Detailed 3D graphics increase the informativeness of your measurement results. Moreover, you can also interactively rotate the graphic as desired for optimum presentation of the measurement result.

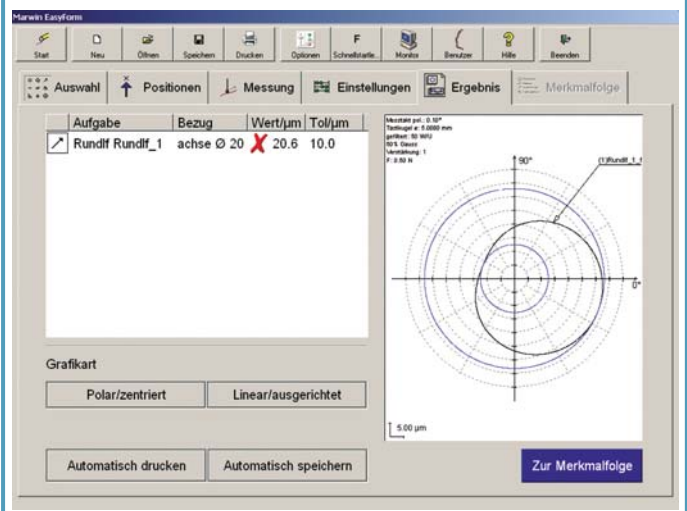


The 32 function keys of the touchscreen can be identified with images or drawings of your workpieces and assigned to the relevant measuring programs. This means that only one touch is required to carry out the relevant measurement. It is also possible to create a measuring run without any programming knowledge. Furthermore, the closed system is protected by user administration from unintentional changes.

## EasyForm Touchscreen Software



This means that you can not only measure the quality of your products in compliance with standards, but also depict it in a clear and informative manner. Naturally, the measuring records can be stored electronically, documented in paperless form and sent electronically, e.g. by e-mail. The versatile Windows® PC peripherals with their high-resolution printers also enable perfect documentation of your measurement results in color or black and white.





## Probe T2W



The inductive **T2W** probe is a universal device. The fact that the probe arm can be moved in a range of 180° and that there are a variety of clamping possibilities for the probe means that measurements can also be performed on difficult to access areas. You can combine easily exchangeable probe arms with a variety of styli in order to adapt the probe to the relevant measuring tasks or work-pieces.

### T2W probe with probe arm moveable around 180°

- Measuring range  $\pm 1,000 \mu\text{m}$  (.039 in)
- Measuring force adjustable from 0.05 to 0.5 N (.01 to .1 lbf)
- Measuring direction switchable
- Exchangeable probe arm
- Mechanical overload protection
- Free travel limitation can be adjusted in contacting direction
- Clamping shaft dia. 8 mm (.31 in)

## Formtester MMQ 100. Technical Data

**Measuring station MMQ 100**  
**Measuring station MMQ 100 Advanced**  
**Optional touchscreen monitor**

**Order no. 9999115**  
**Order no. 9999116**  
**Order no. 9999540**

### Roundness measuring device, C-axis

Roundness deviation ( $\mu\text{m} + \mu\text{m}/\text{mm}$  measuring height)\*\*  
 Roundness deviation ( $\mu\text{m} + \mu\text{m}/\text{mm}$  measuring height)\*  
 Axial run-out deviation ( $\mu\text{m} + \mu\text{m}/\text{mm}$  measuring radius)\*\*  
 Axial run-out deviation ( $\mu\text{m} + \mu\text{m}/\text{mm}$  measuring radius)\*

0.05 + 0.0006  
 0.025 + 0.0003  
 0.04 + 0.0006  
 0.020 + 0.0003

### Centering and tilting table

Table diameter  
 Table load capacity, centric  
 Rotational speed (rpm) 50 Hz / 60 Hz

Manual rough and fine adjustment  
 160 mm (6.30 in)  
 200 N (44.96 lbf)  
 5 / 6

### Vertical unit, Z-axis

Positioning path  
 Positioning

300 mm (11.81 in)  
 manual

### Horizontal unit, X-axis

Positioning path  
 Positioning

180 mm (7.09 in)  
 manual

### Measuring volume

Test diameter up to  
 Measuring height up to  
 Distance C-/Z-axis

375 mm (14.76 in)  
 470 mm (18.50 in)  
 190 mm (7.48 in)

### Dimensions, weight

Length  
 Width  
 Height  
 Weight approx.

470 mm (18.50 in)  
 300 mm (11.81 in)  
 545 mm (21.46 in)  
 28 kg (61.73 lbs)

### Connection data

Mains voltage (V/Hz-VA)

230 (115) / 50 (60)-20

\* Values as max. deviation from reference circle LSC at 20 °C  $\pm$  1 °C (68 °F  $\pm$  1 K) in anti-vibration environment, filter 15 upr, 5 rpm and standard probe arm with ball dia. 3 mm.

\*\*All values to DIN ISO 1101 at 20 °C  $\pm$  1 °C (68 °F  $\pm$  1 K) in anti-vibration environment, filter 15 upr LSC, 5 rpm and standard probe arm with ball dia. 3 mm. Tested on standard, using error separation methods.

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