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MarSurf. Surface Metrology Systems

MarSurf XP 20. Elements of the modular system

Components

XP 20 R	automated roughness measuring station
XP 20 C	automated contour measuring station
XP 20 R + C	automated roughness + contour measuring station

Connection Facilities

Drive Units	PZK PGK 20 PGK 120 PCV GD 25 GD 120 CNC *(except for PZK, all drive units feature motorized lifting / lowering and zero setting)*
Please note:	*GD 120 CNC can be positioned in X-direction*
Pick-ups	all R and MFW pick-ups MFW 1250 in combination with GD 120 CNC
Controllable axes	Z-axis (measuring stand MarSurf ST 750 CNC) Rotary axis for swiveling of drive unit X, Y table axes in the required dimensions Further rotary axes
Please note:	*Maximum quantity of controllable positioning axes = 8*

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Mahr GmbH Göttingen
P.O. Box 1853, 37008 Göttingen, Germany
Brauweg 38, 37073 Göttingen
Phone +49-551-7073800, Fax +49-551-7073888, E-mail: info@mahr.de

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MarSurf

MarSurf XP 20
Automation in Surface Metrology

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MarSurf XP 20 provides professional access to automated Surface Metrology.

- **Benefit from the MarSurf XP 20 advantages in your production line, as automated measuring amortizes quickly.**
- **Eliminate sources of error and play safe with MarSurf XP 20**
- **Thanks to MarSurf XP 20 you are number 1**

MarSurf XP 20. Description

Considering automated roughness measuring stations for gear shafts as one representative example.

Metrology becomes more and more an integrated part in the manufacturing line. Process supervision in or at least close to the production is very important to detect and correct soonest possible deviation trends or at the worst stop manufacturing.

The automated supervision of roughness and surface texture quality on function-relevant components steadily increases.

MarSurf XP 20 facilitates professional access to automated Surface Metrology. By means of the Mahr-specific **"MarWin"software platform** a **modular system** is applied which provides considerable advantages.

A professionally built software structure finally permits continuous safety, reproducibility and documentation (MarTalk for the interface the between software and machine, MarScript for the measuring language).

The MarSurf XP 20 modular software principle is strengthened by mechanical and electrical measuring components that can be selected according to the measuring task.

The **MarSurf ST 750 CNC** measuring stand serves to mount the drive unit and can be positioned in height.

The angle adjustment device enables the drive unit to be rotated in the required angle position.

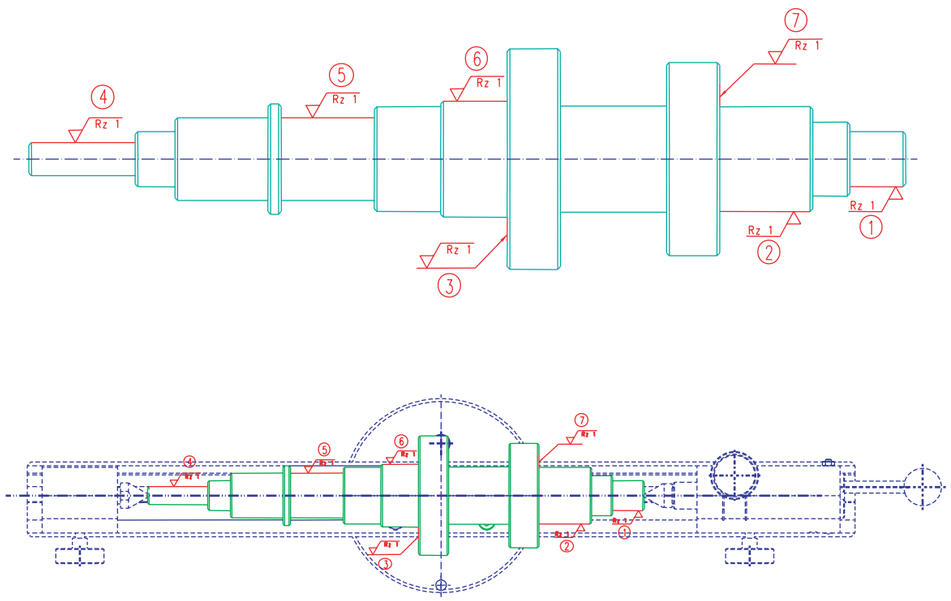
Drive units PGK, GD 25 and GD 120 CNC can be connected. Due to of an integrated rotary encoder, the GD 120 CNC drive unit can also be positioned horizontally.

In combination with the MFW 1250 pick-up system, roughness and contour up to ± 2000 µm *(.079 in)* can be determined.
The example presents the following measuring task:

Roughness measurement of R_a and R_z at the marked positions of a gear shaft.

Measuring Strategy:
Measurement sequence as per scheme below:

Position 1, 2	- 90° position
Position 3	0° position
Position 4, 5, 6	+ 90° position
Position 7	+180° position



MarSurf XP 20. Description

Measuring station Set-Up

The measuring station consists of:

Measuring and evaluation system	MarSurf XP 20
with drive unit	MarSurf GD 25
and pick-up	MarSurf MFW 1250
	with 90° 2 µm tip

The testpiece is fixed between centers. For the vertical and horizontal axis two measuring stand columns MarSurf ST 500 CNC are used. The angle adjustment of the horizontal axis forms the rotary axis.

A cover-including security system makes sure that measuring processes can only be performed with closed doors. After measurement, an indicator displays "acceptance" or "rejection" (green/red light).