

DATRON Accuracy Part

The DATRON Accuracy Part represents the high standard of production accuracy that distinguishes DATRON milling machines. The geometrical elements included in this test workpiece serve as a reference for the evaluation, inspection, acceptance and comparison of the machine with regard to its accuracy.

We are glad to provide you with detailed information:
+49 6154 63766-0

by E-Mail:
info@datron.de

or online at:
www.datron.de

DATRON AG
Am Innovationsfeld 1
64372 Ober-Ramstadt, Germany

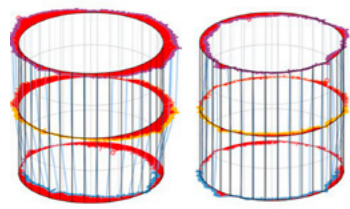
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Take a closer look now: DATRON MXCube
www.datron.de/mxcube-en

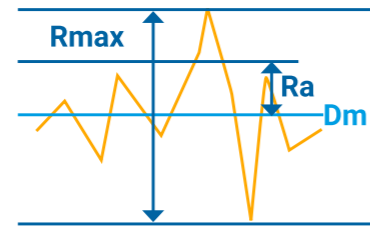


Test and Measurement Procedure



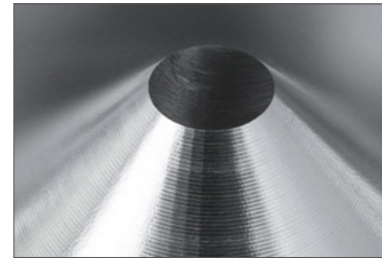
Coordinate measuring machine for checking deviations in dimensions, shape and orientation

The Zeiss Prismo Verity tactile coordinate measuring machine scans the test part with a diamond calibration ball for precision measurements of dimensions and shapes. The resulting measurements are used to demonstrate and confirm the dimensional accuracy, correct shape and conformity with the specified tolerances of the component.



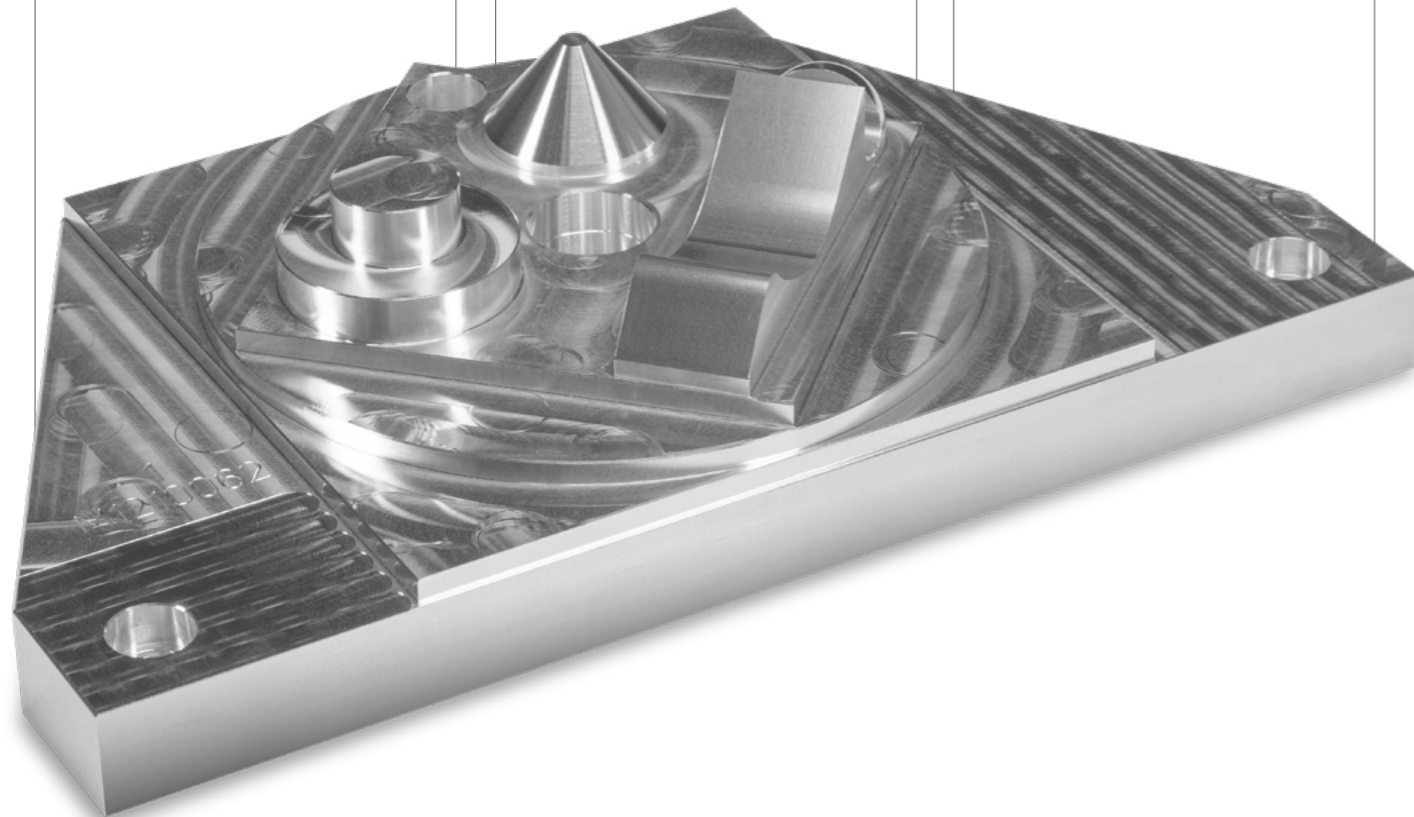
Perthometer surface measurement system

The roughness measurement with the Mahr MarSurf PS 10 measures the roughness of the milled surface finish. It measures a two-dimensional profile of the surface in the profile method and evaluates the Ra, Rz and Rmax characteristics in accordance with ISO 16610-21.



3D microscopy for assessing surface quality

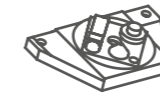
Use of the Keyence VHX7000 measuring microscope for detailed inspection of the surface.



Your Advantages

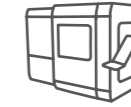
Precision-milled component

You receive the original workpiece that was milled with your new DATRON MXCube.



Demonstration of the production accuracy of your milling machine

Example of the production accuracy of new and existing machines.



Versatile application

Suitable for machine evaluation, optimization and error analysis.



Standardised geometrical elements

Includes standardised geometrical elements for a broad comparability of milling machines.

DIN

Identify optimization potential

Assists with improving production accuracy and optimizing the entire production process.



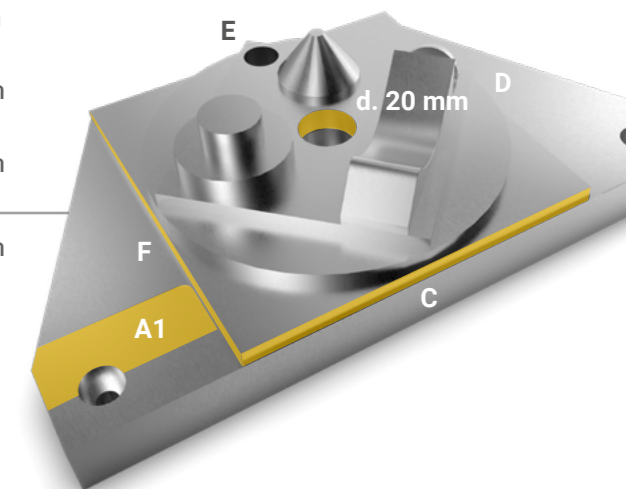
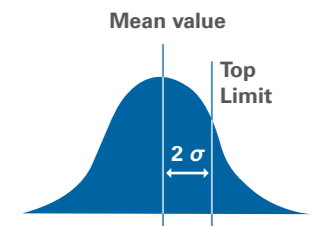
Guidelines for users

Users benefit from orientation for analysis of milling machines and milling processes.



Example of Results Using the DATRON MXCube

		Mean value	Top limit at +2 σ
Area A1	Flat surfaces	2 μm	3 μm
Square 128 x 128 x 4 mm	Straightness Area C	1 μm	1 μm
	Perpendicularity Area C to D	3 μm	5 μm
	Parallelism Area C to E	2 μm	2 μm
Drilled hole d. 20 mm	Cylindrical	3 μm	4 μm



Extract from Zeiss SPC log for the DATRON MXCube series. Assuming a standard distribution, with ± 2 Sigma in 97.7% of cases the value for the deviation is less than the value given here.