
INDUSTRIAL METROLOGY

FOR REPRODUCIBLE MEASUREMENT ACCURACIES IN SPACES SMALLER THAN 1 μm

Hexagon Manufacturing Intelligence: our wide range of solutions for ultra-high accuracy measuring instruments



The Leitz Infinity is the most accurate 3D coordinate measuring machine (CMM) in its class and also enables the combination of optical and tactile sensors in a highly accurate measuring system.

CUSTOMER

[Hexagon Manufacturing Intelligence](#)

KEYFACTS

- Reproducibility of measuring results in the micrometre area
- Level reset accuracies +/- 0,01 mm

BACKGROUND

Hexagon Manufacturing Intelligence is a leading provider of automation solutions. The company develops and produces ultra-high precision coordinate measuring machines that are used in almost all industries, such as automotive, aerospace, mechanical and plant engineering, medical technology and renewable energies. CMMs are used for quality assurance of products according to DIN ISO 9001 and for high-precision dimensional measurement of special geometries.

TASK

Hexagon is one of our longstanding OEM (original equipment manufacturer) customers, who relies on our expertise for vibration-technical decoupling of highly accurate measuring devices such as the Leitz PMM-F and the Leitz Infinity.

For manufacturers of coordinate measuring machines, quality assurance means 4.0: ensuring reproducible measuring results of measuring machines directly in a manufacturing environment - right on time, 100% and in any location. The highly accurate tactile and optical measuring machines must be protected from structural movement in particular due to ground vibration, in order to guarantee measuring accuracy in areas smaller than 1 μm . By comparison, a human hair has a diameter of 60 μm ! Vibration-free decoupling from ambient ground vibrations of the measuring devices is therefore of the highest importance.

Leitz Infinity 3D coordinate measuring machine

The most accurate 3D coordinate measuring machine in its class is the Leitz Infinity, which is equipped with tactile and optical sensors and active pneumatic damping. It is characterised by its closed-frame design with a massive granite foundation bed and a fixed gantry with cast iron stands and a granite truss. This construction with its inherently rigid machine concept, makes accuracy in the sub-micrometre area possible and makes the Leitz Infinity a proven solution for renowned measuring institutes, metrological state institutions, calibration laboratories and many production companies.

HIGHLIGHT

Ensuring reproducible measuring results from CCMs directly in the manufacturing environment - right on time, 100% and in any location.

SOLUTION

Bilz Vibration Technology AG offers a broad spectrum of solutions in the area of coordinate measuring machines that have been used at Hexagon for more than 30 years:

- BiAir® membrane air spring isolator: for highly effective vibration isolation
- EPPC™ electro-pneumatic level control: for highly dynamic and tremor-sensitive machines
- AIS™ active vibration isolation: for the highest requirements in isolation effectiveness, decay time and level constancy

Our Bilz level control systems adapt automatically to different work item weights and process dynamics and convince through the level reset accuracy of more than $\pm 0,01$ mm. This also makes controlled loading and unloading by fully automated robots possible.

OUR SERVICES - ALL FROM ONE SOURCE:

- ON-SITE CONSULTATION
- PLANNING AND DESIGN
- MANUFACTURING
- INSTALLATION AND COMMISSIONING
- AFTER-SALES SUPPORT