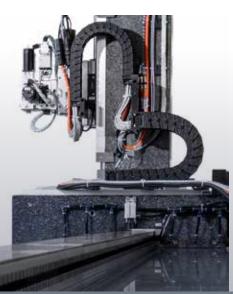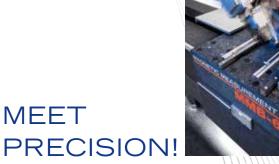## Key features

- Advanced, ultra-fast control
- Customized travel lengths
- Highly dynamic drive technology with utmost positioning accuracy
- Reliable, low-maintenance operation and virtually unlimited useful life
- Elaborate shielding, grounding, filtering, and drive system design to minimize electro-magnetic interference (EMI)
- Solid monolithic design ensuring long-term running stability and guiding accuracy of the air bearing
- Granite base made of natural sealed granite
- Earthquake protection available for earthquakeprone regions
- Enhanced safety by the attachment of translucent plexiglass protection and rope switch
- Decoupled cable track to eliminate interference effects and ensure utmost measuring accuracy
- Wide range of accessories and customer-specific upgrades available

MEET PRECISION!

MEET EXPERTISE, KNOW-HOW, EXPERIENCE!

GET IN TOUCH WITH KUGLER!

30 YEARS — PRECISION IN A NEW DIMENSION

LEADING IN ULTRA PRECISION MICRO MACHINING — PRECISION FOR SUCCESS

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Magnetic Measurement Benches MMB

- **PRECISION**
- **DYNAMICS**
- **STABILITY**

Application: Measurement of magnetic fields in undulators or wigglers used in free electron lasers

Main specifications

Standard axis setup
- Z-Axis: air-bearing main axis, up to 7000 mm travel
- X-Axis: mechanical, horizontal, 300 mm travel
- Y-Axis: mechanical, vertical, 300 mm travel
- Z'-Axis: cable drag auxiliary axis to decouple cable chain forces from main axis

Optional additional axes
- A-Axis: 1-Circle goniometer, ± 180° travel
- V- and W-Axis: translative goniometer axes, ± 12 mm travel
- B- and C-Axis: rotative goniometer axes, ± 10° travel
- All axes motorized

Ultra-fast and accurate trigger and capture options
We can provide position-synchronized trigger signals for Hall probe triggering, or alternatively capture and store axis positions based on a user trigger signal.

Main axis (Z-Axis) properties
- Guiding beam made from monolithic granite
- Magnetic permeability of granite $\mu \leq 1.05$
- Non-friction precision air bearing
- Straightness $\leq \pm 10\ \mu m$
- Pitch and yaw $\leq \pm 1.5$ arc sec
- Ironless linear motor with elaborate μ-metal shielding

Orthogonality of the axes Z, X and Y (alignment accuracy)
$\leq \pm 10\ \mu rad \leq \pm 2$ arc sec

X- and Y-Axis properties
Straightness in pitch and yaw direction $\leq \pm 4\ \mu m$

CNC control system
- Powerful Delta Tau UMAC control system with high-speed PID-loop execution for smooth and precise motion control. Built-in PLC function.
- Expandable for customized solutions, e.g. with additional motors, sensors, or touch probe.

CHOOSE EUROPE's Nº 1

KUGLER MMB-Benches –
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www.kugler-precision.com

KUGLER GMBH | Heiligenberger Str. 100 | 88682 Salem, Germany
Tel. +49 7553 9200-0 • Fax +49 7553 9200-45 | info@kugler-precision.com