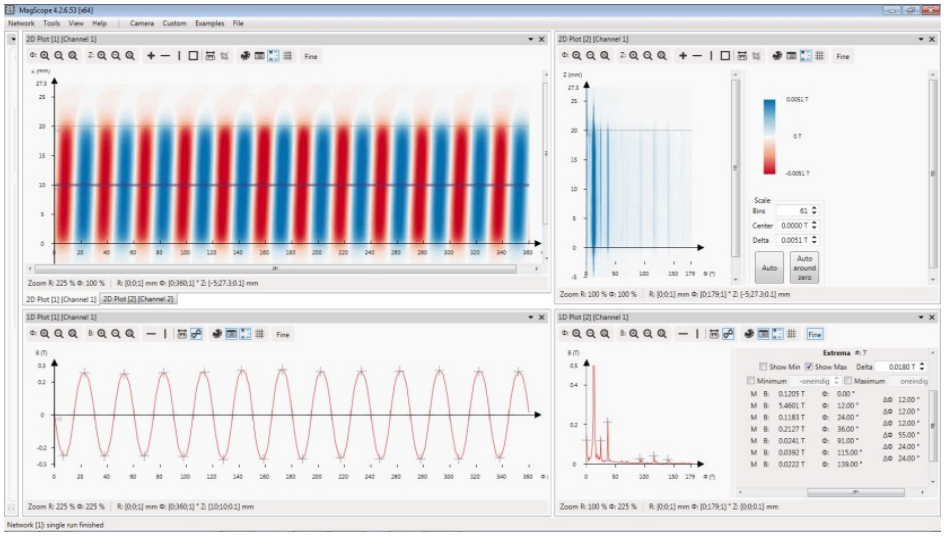
MAGCAM
advanced
magnet
inspection

Magcam Rotor Inspector

Magcam's high speed Rotor Inspector is a 3-axis motorized scan stage with an integrated MiniCube magnetic field camera for measuring the magnetic field distribution of permanent magnet rotors. The magnetic field distribution on the full rotor surface can be measured in seconds with high resolution. It features motorized axes for the radial, axial and angular directions.
The scan stage is controlled automatically by the MagScope Measurement & Analysis software.



Left: Magcam Rotor Inspector.
Right: Measured magnetic field map data of a 24-pole rotor (in cylindrical coordinates) and cross section graph.

Features:

Hardware:

- Rotor diameter range: 0 - 500mm
- Axial measurement range: 0 - 250mm
- Scan speed: up to 12.7mm of axial length in 2 seconds (with 0.1mm axial resolution, 1° angular resolution)
- Dimensions (LxDxH): 910mm x 400mm x 820mm
- Integrated MiniCube magnetic field camera
- Repeatability of radial and axial axes (unidirectional): 1.5µm
- Positioning accuracy of radial and axial axes: 24µm
- Repeatability of angular axis (unidirectional): 0.2 arc-min
- Mounting direction of rotor under test: vertical axis
- Motor type: synchronous servomotor on all axes
- Automatic collision detection
- PLC controller

Software:

- The scan stage is controlled automatically by the MagScope Measurement and Analysis software.
- Automated scanning and image stitching

The stitched large area images can be analyzed in the same way as individual camera images.

Data analysis possibilities include:

- Automatic zero crossing detection
- Automatic pole count
- Automatic pole size measurement
- Pole height uniformity
- North-South pole symmetry
- Local magnetization / material defects
- Fourier analysis of harmonics

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