

LEITZ PATHFINDER

Advanced Scanning Technology





LEITZ PATHFINDER

Technology from the inventor of the 3D-scanning probe head

With over 35 years experience in the development and production of coordinate measuring machines (CMMs) for tactile scanning, Hexagon Metrology continues to produce impressive and innovative technical solutions with extraordinary capabilities. The first unclamped 3D-scanning probe head originated from Leitz in Wetzlar, Germany (today Hexagon Metrology GmbH) and was followed by countless further developments in the area of coordinate measuring technology.

Leitz measuring machines achieve outstanding THP values, in other words: minimal form deviations during scanning. That proves our outstanding position in the field of scanning technology. With a data rate of up to 1000 points per second our scanning probe heads achieve extremely reliable measurement results. Our CMMs always provide non-manipulated measured deviations because the deviations from the specified values are passed unfiltered to the software. This even allows a Flick standard to be evaluated using Leitz Pathfinder Technology.

Engineering, quality assurance and production profit from Leitz Pathfinder Technology – all around the globe. The technology is based on the interaction between high accuracy CMMs, sensors and the measurement software QUINDOS. High-precision optical scanning is now also available.

Leitz Pathfinder Technology offers perfect solutions for standard applications and highly complex tasks. It comprises:

LEITZ PATHFINDER TECHNOLOGIE



Variable
High-Speed-Scanning



4-Axis Scan



Tag Scan



Scan Catch



3D Self-Centering



Optical
Scan

A detailed close-up photograph of a CNC machine's tool head and worktable. The machine features a white-painted metal frame and a black T-slot worktable. A silver-colored cylindrical tool holder is mounted on the table, with a long, thin metal rod (likely a probe or tool) extending from it. The background is a solid light blue. The image is oriented vertically, matching the page's layout.

MA
EF
throu

A detailed close-up photograph of a CNC machine's tool head and worktable. The tool head, in a light grey color, is positioned above a complex metal workpiece. The workpiece features various machined surfaces, including a prominent cylindrical section with a central hole. A black, ergonomic handle is visible on the side of the worktable. The machine's components are made of polished metal, reflecting light. The background is a plain, light grey. On the right side, there is a white vertical banner with text. At the bottom of the image, there is a blue diagonal graphic element.

MA
EF
throuA detailed close-up photograph of a CNC machine's tool head and worktable. The tool head, in a light grey color, is positioned above a complex metal workpiece. The workpiece features various machined surfaces, including a prominent cylindrical section with a central hole. A black, ergonomic handle is visible on the side of the worktable. The machine's components are made of polished metal, reflecting light. The background is a plain, light grey. On the right side, there is a white vertical banner with text. At the bottom of the image, there is a blue diagonal graphic element.

MA
EF
throuA detailed close-up photograph of a CNC machine's tool head and worktable. The machine is primarily white with grey and black components. A vertical spindle is visible on the left, and a complex arrangement of metal blocks and a cylindrical component is mounted on the table. A red laser line is projected onto the workpiece. The background is a solid light blue. The text 'MA', 'EF', and 'throu' are visible on the right side of the image.A detailed close-up photograph of a CNC machine's tool head and worktable. The machine is primarily white with grey and black components. A vertical spindle is visible on the left, and a complex arrangement of metal blocks and a cylindrical component is mounted on the table. A red laser line is projected onto the workpiece. The background is a solid light blue. The text 'MA', 'EF', and 'throu' are visible on the right side of the image.A detailed close-up photograph of a CNC machine's tool head and worktable. The machine is primarily white with grey and black components. A vertical spindle is visible on the left, and a complex arrangement of metal blocks and a cylindrical component is mounted on the table. A red laser line is projected onto the workpiece. The background is a solid light blue. The text 'MA', 'EF', and 'throu' are visible on the right side of the image.A detailed close-up photograph of a CNC machine's tool head and worktable. The machine is primarily white with grey and black components. A vertical spindle is visible on the left, and a complex arrangement of metal blocks and a cylindrical component is mounted on the table. A red laser line is projected onto the workpiece. The background is a solid light blue. The text 'MA', 'EF', and 'throu' are visible on the right side of the image.A detailed close-up photograph of a CNC machine's tool head and worktable. The machine is primarily white and grey, with a black handle on the worktable. A cylindrical metal component, possibly a part of the tool or workpiece, is visible in the foreground. The background is a solid light blue. The text 'MA', 'EF', and 'throu' is visible on the right side of the image.

SCANNING IN THE 4TH DIMENSION



Leitz 4-Axis Scan



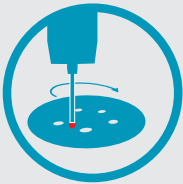
Parts such as crankshafts, blisks and impellers present a real challenge for CMMs: if a part is measured from all sides without a rotary table then numerous styli configurations and therefore a large measurement volume is necessary. Usually the rotary table is only used to position the part, which is then scanned section by section (3 axis scan) - neither an elegant nor a fast way of measuring. The Leitz 4-Axis Scan from Hexagon Metrology is the solution: the state of the art controller allows continuous scanning in all 4 axis, thus measuring in the optimum sequence with maximum throughput.

Features:

- Continuous 4-axis scan with an integrated rotary table
- Measuring of complex parts in small measurement volumes
- Due to a special technology the features of the rotary table adjust themselves automatically to the weight and moment of inertia of the workpiece
- Continuous and dense capture of the measured points for efficient quality control without compromise

PURE PERFORMANCE ON COMPLEX SURFACES

Leitz Tag Scan



With Leitz Tag Scan, parts with surfaces punctuated by recesses, holes or grooves can be scanned continuously.

Leitz Tag Scan controls the scanning automatically with the help of a safety distance so that the stylus does not enter the depth of the feature. The workpiece surface is reached again from a safety-optimised angle ($>35^\circ$). This prevents collisions in grooves and holes. The subsequent calculations take into account only the measured points relevant to the geometry.

Time is saved in two ways: the programming effort is reduced considerably and the measurement process runs quicker.





RELIABLE SCANNING MAXIMUM THROUGHPUT

Leitz Scan Catch



Scanning known shapes is done at high scanning speeds. Contact with the part can be lost if the deviations become too large or the part is defective.

With Leitz Scan Catch the measurement continues. After loss of contact the controller positions the stylus at the last correct measured point and continues measuring at reduced speed. When the problem area is passed, the system increases the scanning speed automatically.

Leitz Scan Catch ensures that measuring programs always run until the end, even at defective parts and without any action from the operator. This allows overnight measurement i.e. of pallets with turbine blades during unmanned shifts, without the measuring process being interrupted by defective blades.

A LEITZ MEASURING MACHINE FINDS EVERY CONTOUR - EVEN WITHOUT CAD



Leitz 3D Self-Centering



Measuring a non-linear groove is quite complex. With Leitz 3D Self-Centering, the measuring machine searches independently for the deepest point in the groove and follows it automatically. Control

curves on camera lenses can be captured just as efficiently and reliably. Leitz 3D Self-Centering is also available for measurements with a rotary table.



NON-CONTACT SCANNING TO THE HIGHEST PRECISION

Leitz Optical Scan



The latest innovation of Leitz Path-finder Technology is optical scanning using the Leitz Precitec LR and CMS 106 sensors on high-precision Leitz coordinate measuring machines. The

technology allows non-contact scanning of all kinds of surfaces at accuracies in the submicron range (Leitz Precitec LR) or with high throughputs (CMS 106).

Leitz Precitec LR:

- Extremely high axial resolution
- Small spot diameter
- Automatically interchangeable
- Unmatched non-contact precision

Applications:

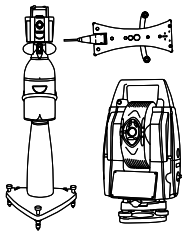
- Glass or plastic lenses
- Delicate, sloping, reflective, transparent, refractive, shiny, mat or coated surfaces
- Highly polished parts and profiles

CMS 106:

- Fully automatic, no parameters to worry about
- Selectable laser line lengths
- Real time automatic laser power control

Applications:

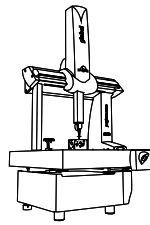
- Feature inspection to CAD (thin walled/sheet metal parts)
- Free form surface inspection to CAD and reverse engineering



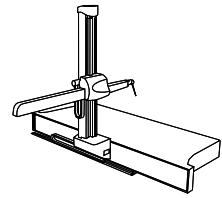
LASER TRACKERS
& STATIONS



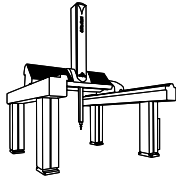
PORTABLE MEASURING ARMS



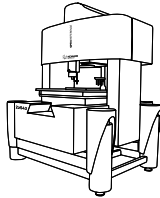
BRIDGE CMMS



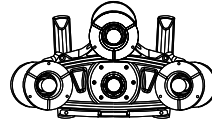
HORIZONTAL ARM CMMS



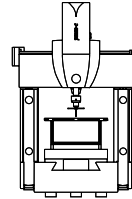
GANTRY CMMS



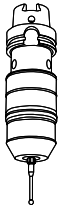
MULTISENSOR & OPTICAL SYSTEMS



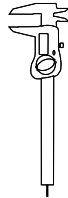
WHITE LIGHT SCANNERS



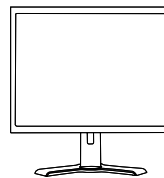
ULTRA HIGH ACCURACY CMMS



SENSORS



PRECISION MEASURING
INSTRUMENTS



SOFTWARE SOLUTIONS



Full Bright®

福宮通商股份有限公司

總公司: 新北市 235 中和區連城路 258 號 3F-3
(遠東世紀廣場 I 棟)

Tel: 02-82271200 Fax: 02-82271266

Http:// www.fullbright.com.tw

E-mail: sales@fullbright.com.tw

台北 Tel: 02-82271227 Fax: 02-82271191

台中 Tel: 04-24736300 Fax: 04-24734733

高雄 Tel: 07-3430270 Fax: 07-3430296

昆山 Tel: 512-57751291 Fax: 512-57751293

東莞 Tel: 769-85847220 Fax: 769-85847229

www.fullbright.com.tw