

SERVING
INDUSTRY for
50
years
SINCE 1969

METROLOGY, METALLURGY & DESIGN SERVICES

- QUALITY CONTROL • INSPECTION • METAL TESTING
- SPECTROGRAPHY • N.D.T. • DESIGN • FEA

ON-SITE IN SITU INSPECTION

Hofmann Engineering is committed to the highest quality and has a focus on pushing the boundaries of existing technology.

Quality can only be achieved if it can be measured accurately. On-site, in situ metrology methods are a cost effective and efficient option to measure wear, problem solve and measure up for a new replacement part.

Hofmann Engineering have invested in a variety of equipment including Portable Coordinate Measuring Machines (PCMMs), laser scanners and laser trackers.

The PCMMs achieve an accuracy of 20µm (0.001") and run a number of different software applications for general inspection and a unique gear inspection software.

The laser scanner attaches to the head of the PCMMs and produces a laser scanned point cloud from which a model can be created.

The laser trackers have a 320m radial measuring envelope producing micron accuracy on large parts such as mill heads, gearbox casing and slew gears.

With such a range of metrology equipment, Hofmann Engineering has an accurate metrology solution for each situation.



PCMM
GEAR
PLOT

PCMM ON A MILL PINION



LASER TRACKER ON A MILL HEAD



PCMM ON TRACK PADS

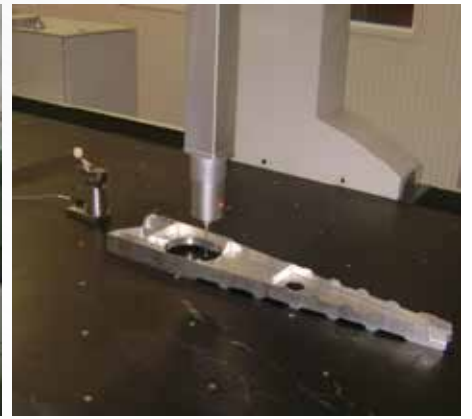
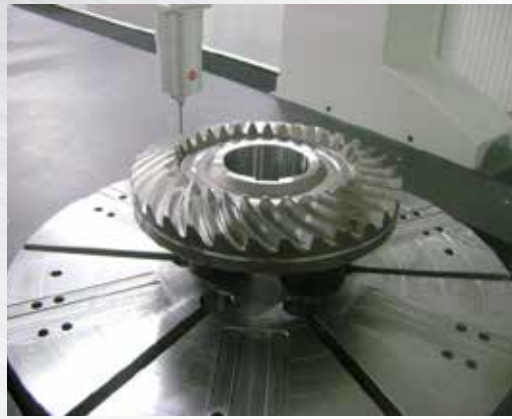


LASER TRACKER ON A GEARBOX CASING



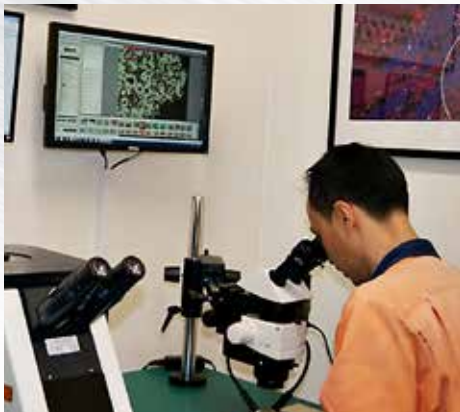
LASER
SCANNER

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CMM LABORATORY INSPECTION

A state-of-the-art, climate controlled and vibrationally isolated inspection laboratory houses the fixed CMM. With accuracy to $2\mu\text{m}$, the CMM has the capability, software and accreditation to inspect gears to 6m diameter, small to large mill pinions, aerospace parts, worm gearing, bevel gears and many other components.



METALLURGY

Complete metallurgical lab for:

- Quality control of heat treatment processes;
- Metallurgical failure analysis.

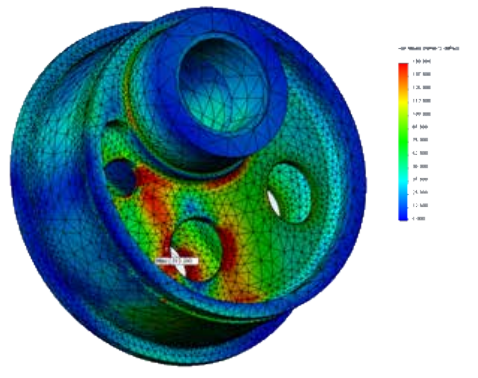
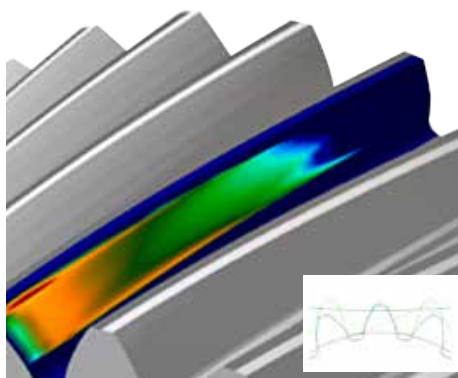
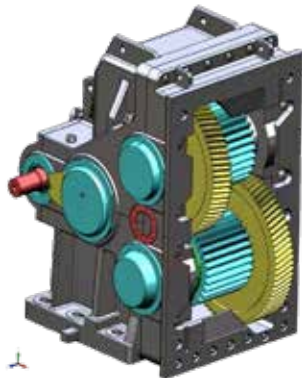
Specialising in failure analysis of gearing to AGMA and DIN standards.

SPECTROGRAPHIC ANALYSIS

Full chemical composition analysis of carbon and alloy steels; stainless steel; copper; and nickel alloys. Ideal for material identification and weld procedure specification.

NDT INSPECTION

- In-House NDT capabilities for defect identification and quality control.
- ISO 9712 Certified Technicians.



ENGINEERING DESIGN

- 2D and 3D CAD to produce manufacturing drawings.
- 5-axis CAM to program machining.

Designs for a wide variety of components are completed, including complex gearing, aerospace tooling, HPGR's, and track pads.

Programs: AutoCAD, Solidworks, Unigraphics NX CAD/CAM, PEPS, Catia v5, CADD5, and Pro_E.

GEAR DESIGN & ANALYSIS

Gear tooth optimisation; contact pattern and modification analysis to produce quiet and efficient running gearing.

- Shaft and bearing calculations.
- Typical design components: spur, helical and double helical gears and splines; planetary gear trains; straight, skew, spiral, zero and hypoid bevel gearing; worm gearing; special tooling; and flexible couplings.

Programs: KISSsoft and TBK.

FINITE ELEMENT ANALYSIS (FEA)

- Static and dynamic FEA simulations can be performed.
- Special gear tooth FEA programs to analyse cracks in cast gearing.

Typical applications: gearbox casings; Hofmann re-designed components; cast gearing; rope drums; and eccentrics

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