

**HOFMANN
ENGINEERING**

METROLOGY
INSPECTION
DESIGN
METALLURGY
SPECTROANALYSIS
ULTRASONICS

Since 1969 Hofmann Engineering has provided specialist engineering services to Australia's industry leaders.

Quality Assurance certification by Lloyds complements our total quality culture.

Our commitment to continuous quality-improvement touches every aspect of our products, services and customer support.

HOFMANN ENGINEERING PTY LTD

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PCMM ON A MILL PINION

ONSITE INSITU INSPECTION

Hofmann Engineering continually improve quality and expand their library of product improved parts by pushing the frontline of inspection technology.

The two 6-axis **Portable Co-ordinate Measuring Machines (PCMM)** run a number of different softwares for general inspection and also a unique gear inspection software and achieve an accuracy of 20µm (≈0.001").

A state-of-the-art **Laser Scanner** attaches to the head of our PCMM's, and produces a laser scanned point cloud from which a model can be created.

The two **Laser Trackers** have up to a 320m radial measuring volume producing micron accuracy on large parts such as mill heads, gearbox casings and slew gears.



PCMM GEAR PLOT



LASER TRACKER ON A MILL HEAD

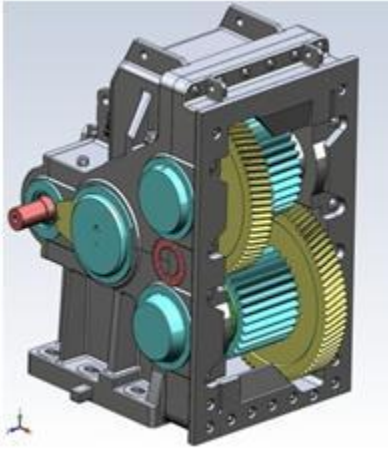
LASER SCANNER



**LASER TRACKER ON A
GEAR BOX CASING**

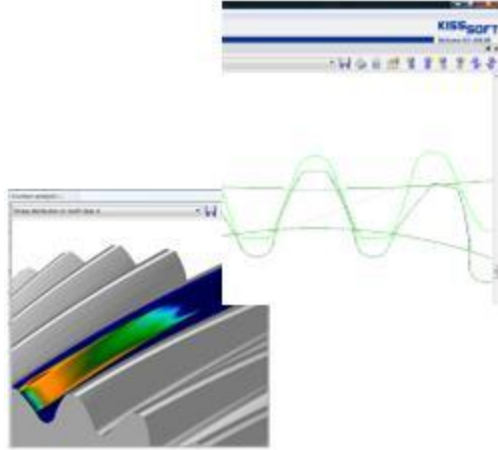


PCMM ON TRACKPADS



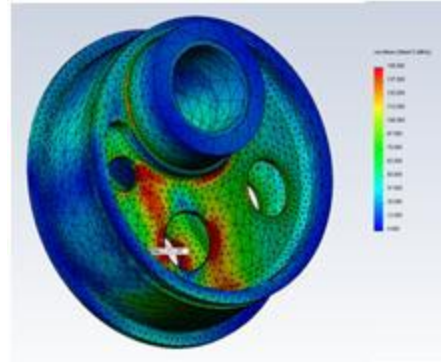
ENGINEERING DESIGN

- 2D and 3D CAD to produce manufacturing drawings.
 - 5-axis CAM to program machining.
- We design all types of components including:
- Aerospace tooling
 - HPGR's
 - Trackpads
- Programs: AutoCAD, Solidworks, Unigraphics NX CAD/CAM, PEPS, Catia v5, CADDs, and Pro_E.



GEAR DESIGN & ANALYSIS

Programs: KISSsoft and TBK.
 Gear tooth optimisation; contact pattern and modification analysis to produce quiet running gearing.
 Shaft and bearing calculations.
 Typical design components: spur, helical and double helical gears and splines; planetary gear trains; straight, skew, spiral, zerol and hypoid bevel gearing; worm gearing; special tooling; and flexible couplings.



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.



METALLURGY

Complete metallurgical lab for:

- quality control of heat treatment processes;
- metallurgical failure analysis.

Our speciality is failure analysis of gearing to AGMA and DIN standards.



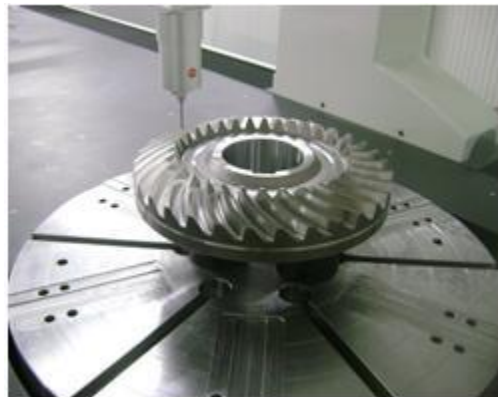
SPECTROGRAPHICS ANALYSIS

Full chemical composition analysis of carbon and alloy steels; stainless steel; aluminium; copper; and nickel alloys.
 Ideal for material identification and Weld Procedure Specification.



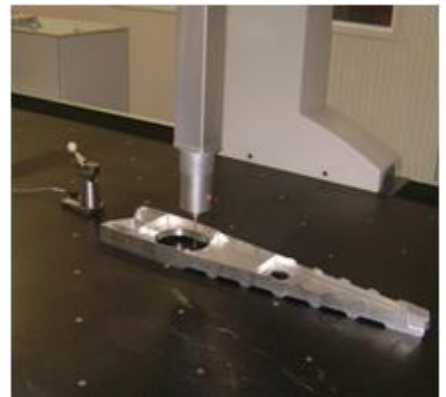
ULTRASONIC NDT INSPECTION

For quality control and defect identification.
 NATA certified operators.
 In-house and external Quality Assurance.



CMM LABORATORY INSPECTION

A state-of-the-art, climate controlled and vibrationally isolated inspection laboratory houses the fixed CMM. With accuracy to 2µm, the CMM has the capability, software and is accredited to inspect gears to 6m diameter, pinions from small to large mill pinions, aerospace parts, worm gearing, bevel gears and many other components.



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