

Robert M^cKinnon

B.Eng (Hons) - Mechanical

Brisbane, QLD

hello@robertmckinnon.au

ABOUT ME

Mechanical Engineer with end-to-end product development experience spanning R&D, testing, manufacturing, and commissioning. Proven track record delivering commercially viable products from concept through to production, with a strong focus on performance validation, manufacturability, and cost-effectiveness.

Experienced in leading innovation projects, developing test methods and equipment, and translating data into actionable engineering and commercial outcomes. Recognised for pragmatic problem solving, ownership of complex systems, and delivering results under real-world constraints.

CORE STRENGTHS

Mechanical design & CAD (SolidWorks) · Prototyping & validation · Experimental design & data analysis · Test method development · Manufacturability & product development · Cross-functional collaboration

KEY ACHIEVEMENTS

- Led end-to-end development of a new luxury spring technology from concept to full-scale production
- Commissioned and calibrated new test equipment to align with QUT research outcomes, ensuring consistency and reliability of results
- Designed and delivered custom single-use mattresses for spinal surgery applications in collaboration with QUT researchers
- Significantly reduced weekly mattress waste by validating alternative test standards through structured testing and data analysis
- Developed a scheduling system that enabled the product test facility to consistently operate at full capacity

PROFESSIONAL EXPERIENCE

Sealy of Australia

Development Engineer | Feb 2024 – Jan 2026

- Led and supported innovation projects from ideation through design, development, and delivery
- Developed proprietary products and technologies to improve quality, durability, and cost-effectiveness
- Designed, built, and validated prototypes using lab testing and data-driven iteration
- Conducted intellectual property reviews and supported protection of new technologies
- Created technical drawings and specifications, ensuring designs were manufacturable and within tolerance
- Collaborated closely with manufacturing teams to transition designs into reliable production
- Analysed NATA-accredited laboratory data to identify performance improvements and design opportunities
- Produced Marketing Claims Documents translating technical results into commercial insights
- Provided technical support and guidance to international joint venture partners
- Developed new test methods and equipment, expanding internal R&D capability

Product Test Supervisor | Sept 2020 – Jan 2024

- Managed product testing programs for durability, performance, and compliance
- Led lab technicians and junior engineers, ensuring efficient and accurate testing operations
- Developed and implemented test procedures, documentation, and data analysis methods
- Delivered prototyping, manufacturing assessments, and equipment analysis
- Ensured ongoing compliance with NATA accreditation standards
- Generated detailed reports with recommendations to guide product development decisions
- Identified and validated alternative testing approaches, significantly reducing material waste
- Designed modular attachment systems to improve interoperability between test equipment
- Standardised reporting through development of a claims document template, improving efficiency and consistency

Nordon Cylinders

Mechanical Engineer | July 2019 – July 2020

- Designed and validated hydraulic cylinder components in SolidWorks, ensuring structural integrity through stress analysis and FOS calculations
- Interpreted client specifications and translated them into manufacturable engineering designs
- Produced detailed technical drawings for client approval and production
- Collaborated with manufacturing teams to optimise designs for cost, efficiency, and buildability
- Prepared production workflows, including materials, assemblies, and time estimates using ITMS database systems

ENGINEERING PROJECTS

Lavender oil distillation system

- Designed, fabricated, installed, and commissioned a complete steam distillation system on a working farm
- Built an 80kW steam boiler and integrated site water infrastructure
- Developed an Arduino-based control and monitoring system for process automation

Sustainable 3D printer filament

- Developed a novel process for producing natural fibre-reinforced filament using recycled polypropylene
- Designed and executed material processing, extrusion, and testing workflows
- Evaluated mechanical properties across varying fibre compositions to assess performance