



ABN: 59 087 445 654

Position Description

Position Title:	Mechanical Design Engineer
Position Type:	Full-time
Award & Classification:	Manufacturing & Associated Industries & Occupations Award 2020 – C2 Professional Employees Award 2020 – Professional Level 4
Location:	de Bruin Engineering Pty Ltd, 255 – 261 Commercial Street West, Mount Gambier SA 5290
Supervisor/Manager:	Engineering Manager
Position last updated:	August 2021
Status:	UNDER RECRUITMENT

MAIN DUTIES/RESPONSIBILITIES

Mechanical engineers develop, design, build, test, and inspect mechanical devices and systems, such as machines, tools, and engines.

Since mechanical engineering is a very broad field, they work in a variety of different industries designing a wide range of products. Most mechanical engineers work in manufacturing, research and development, or at companies that offer engineering services. Typically, mechanical engineers have a Bachelors' degree in mechanical engineering or in a related field such as mechanical engineering technology.

They need advanced mathematical skills to perform calculations and they need to be able to think creatively. Mechanical engineers research, design, develop, build, and test mechanical and thermal devices, including tools, engines, and machines.

In our work environment this role is required to design, develop and improve de Bruin Engineering (DBE) products and projects, including flagship Harrington Seed Destructor (www.ihsd.com) products, by applying engineering rules, product lifecycle manufacturing (PLM) principles and techniques, supporting production processes and achieving productivity, quality, output, WHS deliverables and targets as set by the business; whilst creating a collaborative, cohesive and supportive environment for the Engineering / Manufacturing team.

This role will be required to work collaboratively with the Engineering Manager while striving for continuous improvement in product, safety, and quality.

The incumbent will be skilled in computer technology and hands-on mechanical engineering skills equally and extremely well versed on the product developed and the market it services, whilst understanding consumer requirements and limitations.

Common Tasks

Operating within the guidelines of the de Bruin Group policies and procedures, relevant Australian Standards, quality, environmental and WHS legislative requirements:

- Create design changes to improve product lines and retrofit changes into previous models.

- Scope and develop project plans.
- Estimate project costings and task completion times.
- Constructively analyse and critique designs, submit designs for peer review.
- Create and finalise designs to meet project requirements.
- Present project plans and designs to colleagues and managers.
- Create accurate project costings and Bill of Materials.
- Using Solidworks 3D CAD Software to design mechanical components applying Design for Manufacture (DFM) methods.
- Using Solidworks Simulation to perform Finite Element Analysis (FEA) to test systems design and Failure Mode Element Analysis (FMEA) to identify and reduce the risk and occurrence of failure.
- Assess in-field performance and operational reports of agricultural machinery with a view to improve product durability, effectiveness, usability, and efficiency.
- Collect and research data. Using intuition and experience to complement data.
- Design workflows and procedures.
- Research, evaluate and develop design of agricultural machinery, integrated components and tools based on current engineering principles and practices.
- Identify customer requirements and translate into work requirements.
- Identify technical requirements and translate into quality plans and special instructions.
- Ensure all facets of design control are met.
- Ensure products are designed safely, are reliable and innovative.

While performing the duties of this role, the employee may be required to travel and work at sites other than the regular place of employment. Such travel can include staying away from home and / or working through weekends.

The scope of this role may include travel within regional Australia, and may include international travel.

SKILLS & EXPERIENCE

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Qualifications

- Mechanical Engineering Degree.
- Forklift licence (not essential)

Experience

- At least five (5) years previous experience in a similar role/industry.
- General Engineering skills essential including applied mechanical engineering design experience.
- Dassault Systems Software SOLIDWORKS CAD and Enterprise Product Data Management (EPDM) software skills essential.

- Competency in CNC Manufacturing requirements with a minimum of 5yrs experience including but not limited to:
 - wide variety of programming languages;
 - CNC controllers;
 - CAM Process design in these areas.
- Experience using AS1100 Standards is essential.
- Efficiencies in Microsoft Office applications to an intermediate level including, but not limited to, the ability to enter and maintain accurate data using MS Word and Excel.
- Previous employment involving safety and quality assurance programmes.
- A documented history of manufacturing processes including but not limited to trade roles.
 - Engineering Mechanical stream including understanding:
 - Turning;
 - 3axis Milling;
 - 4axis Milling with multi-pallet machining centres.

will be an advantage to the role.
- Engineering Sheetmetal/fabrication stream including understanding:
 - the use of sheet metal forming tools;
 - sheet metal manufacturing;
 - mechanical engineering processes is an advantage to this role.

Skills & Abilities

- Identify customer requirements and translate into work requirements.
- Identify technical requirements and translate into quality plans and special instructions.
- Ability to ensure all facets of design control are met.
- Ability to work under pressure within tight time scales.
- Ensure products are designed safely, are reliable and innovative.
- Enjoy technical activities and have an interest in machinery.
- Able to work accurately applying manual, technical and practical skills.
- Able to trouble shoot and solve problems
- Strong computer skills in Microsoft Office applications in particular Word and Excel, including good report writing abilities.
- Able to work well within a team environment.
- Self-starters and able to work unsupervised.
- Agreeable to reasonable overtime.
- Patient and courteous.
- Organised and able to meet deadlines.
- Physically fit with the strength to handle materials, tools and machines.
- Apply sound WHS knowledge and practices.
- High attention to detail across all aspects of the role
- Treats people with respect regardless of their status or position by keeping commitments and inspiring trust of others.
- Works with integrity and ethically.
- Reacts well under pressure.
- Takes responsibility for own actions.
- Uncompromising attitude to Safety.
- Proven comprehension of design principles and their application to manufacturing engineering within a production environment.
- Proficiency in the appropriate selection and use of Cutting Tool gear and Hand Tools that will be used within the manufacturing process is an advantage.
- Electrical and Hydraulics experience and understanding of electrical schematics is an advantage.

- Practical experience within agricultural equipment and combine harvesters would be highly advantageous.
- Previous employment involving safety and quality assurance programmes.
- Willing to comply with regulatory and de Bruin Group policies and procedures.

Information Technology:

Computer literate - proficient in the use of Microsoft Office and design packages such as AutoCAD and SolidWorks.

Analytical:

Collects and researches data. Uses intuition and experience to complement data. Designs work flows and procedures.

Mathematical:

Ability to calculate and interpret detailed and complex mathematical information. Ability to calculate figures and amounts such as proportions, percentages, area, circumference, and volume. Ability to apply concepts of algebra, and engineering-based calculations and formulas. Ability to calculate, create and interpret machining drawings and the use of Geometric Dimensioning and Tolerancing.

Language:

Ability to communicate clearly and listen attentively. Ability to read, analyse, and interpret advanced business periodicals, professional journals, technical procedures, or governmental regulations. Ability to write reports, business correspondence, and procedure manuals. Ability to effectively present information and respond to questions from groups of managers, clients, customers, and the general public. Speak clearly and persuasively in positive or negative situations. Listens and gets clarification. Demonstrates group presentation skills. Participates in meetings.

Reasoning ability:

Ability to solve complex problems and deal with a variety of concrete variables in situations where only limited standardisation exists. Ability to interpret a variety of instructions furnished in written, oral, diagram, or schedule form. Develops alternative solutions. Works well in group problem solving situations.

Strategic thinking:

Develops strategies to achieve organisational goals. Understands organisations strengths and weaknesses. Analyses market and competition. Identifies external threats and opportunities. Adapts strategy to changing conditions.

Planning / organisation:

Prioritizes and plans work activities. Uses time efficiently. Plans for additional resources. Sets goals and objectives. Organises or schedules other people and their tasks. Develops realistic action plans whilst remaining adaptable and willing to change.

Initiative:

Volunteers readily. Undertakes self-development activities. Seeks increased responsibilities. Takes independent actions and calculated risks. Looks for and takes advantage of opportunities. Asks for help when needed.

Physical Demands:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is regularly required to talk or hear. The employee frequently is required to walk. The employee is required to stand and almost constantly required to sit. The employee is regularly exposed to moving mechanical parts. The noise level in the work environment is consistent with both an administration office and a manufacturing workshop environment. Specific vision abilities required by this job include close vision, distance vision, peripheral vision, depth perception, and ability to adjust focus.

People Skills:

Works collaboratively in planning, decision making, facilitating and process improvement. Solicits and applies customer feedback (internal and external). Fosters quality focus in self and others. Improves processes, products and services.

Strategic Thinking Ability:

Develops strategies to achieve organisational goals. Understands organisations strengths and weaknesses. Collects and researches data. Uses intuition and experience to complement data. Designs workflows and procedures.

PERFORMANCE GOALS

- Support the continual improvement and production efficiency gains through design outcomes that are fit for purpose.
- Deliver projects on-time, on-budget with quality outcomes.
- Provide technical and process related advice, information, documentation to Machining / Fabrication & Assembly, that includes Safe Operation Procedures, fixturing, tooling, manufacturing processes and ancillary equipment.
- Educate new and existing workers in accordance with documented procedures to maintain the complement of skills and knowledge.
- Proactively regularly meet with the Engineering Manager to address any compliance issues and/or concerns encountered within the workplace.
- Design for Manufacture (DFM) - Machining Process Design:
 - Select appropriate tooling for applications with optimal efficiency and safety in mind – safe productivity.
 - Design Jigs, Fixtures + Gauging to optimise safe productivity and meet business process requirements.
 - Develop Manufacturing Process methods with setup + cycle reduction, high quality process control plans, reliability, repeatability, and safety as priorities.
- Demonstrated compliance to all Legislative, Regulatory, Codes of Practice, Australian Standards, WHS requirements and de Bruin Group Policies and Procedures.

SUPERVISORY RESPONSIBILITIES

This role currently has no direct supervisory responsibilities.

WORK HEALTH & SAFETY*Team Member Level 3:*

Team Members at this level must possess an understanding of basic WHS principles together with awareness of the relevant legislative requirements of the WHS Legislation. Responsible for the completion of Incident Report Forms as well as facilitating corrective action on Incident Report Forms. Required to undertake thorough investigation of incidents/hazards. Required to attend and complete Plant Risk Assessment and Risk Score calculator's for implementation of cost justifications for changes/repair. Team Members at this level must have an understanding of the requirements for Work Health Safety throughout the lower levels of the organisation.

AUSTRALIAN CONSUMER LAW – *Competition & Consumer Act 2010 (Cth)**Team Member Level 3:*

Team Members at this level must possess a working knowledge of all areas of the *Competition & Consumer Act 2010 (Cth)*, and be fully aware of their obligations and responsibilities when representing the Group in the market place. Team Members at this level are responsible for the completion of all documentation pertaining to Competition & Consumer Act Compliance. Team Members must familiarise themselves with the Group's Competition & Consumer Act Policy, and ensure compliance to the Policy at all times by themselves and their subordinates, as well as ensuring that their subordinates remain trained and fully informed concerning all areas of the Act.

REVIEW

This document is subject to continual review and improvements and may also be subject to amendments during the term of your employment.

If you identify the scope of your tasks moving away from this document without consultation, refer the matter to your supervisor for discussion. In addition, this document is reviewed as part of the formal performance review process.