

Job Description for Design Engineer

Background
<p>Why is it that humans suffer from hip and knee arthritis but do not suffer as much ankle arthritis, despite the fact that the ankle joint is carrying substantially more weight than either of the other joints? Answering this question led to the development of the MaltaHip, a tri-mobility hip made of 3 separate rotating cylinders allowing movement on a single plane each, mimicking the ankle. Tested in a recognised facility, this hip showed drastically less wear, indicating the possibility of a prosthesis with a greatly increased lifespan of possibly over 50 years. Flexion and extension are also greatly increased in the prosthesis possibly allowing squatting and cross-legged sitting. Despite the multiple surfaces, dislocation risk is decreased by an innovative interlocking mechanism. This prosthesis is currently made from metals and polymers already clinically approved and in widespread use in the market. It may be the optimal solution for young active people needing a hip replacement at an early age, opening up the possibility of “A Hip for Life.”</p>
Summary of Role
<p>The Design Engineer will have a primary focus on product form, fit, function and patient safety, whilst ensuring that ease of use and of manufacture are met during the product design process. Clearly and accurately identifying and communicating all required specifications to manufacture the product in a cost-effective way is a fundamental and core responsibility. The accurate capture and translation of stakeholder needs into innovative, novel and robust design solutions that have been verified and validated appropriately is also a central activity for ensuring the quality of product designs. The project will involve development of a novel hip replacement.</p>
Main Duties / Responsibilities
<p>Creative Skills:</p> <ul style="list-style-type: none"> • Familiar with common problem-solving methodologies • Possesses a good understanding of mechanisms • The ability to effectively turn customer requirements into design solutions • Transposes own knowledge of manufacturing methods and limitations into cost effective design solutions • Converts ideas into filed intellectual property <p>Design Skills:</p> <ul style="list-style-type: none"> • 3D-CAD modelling (Solidworks preferred), with an appreciation of Geometrical Dimensioning and Tolerancing • Participate in Design FMEA’s with a thorough understanding of Design Controls in a highly regulated industry. Ensuring that engineering designs are safe, effective and appropriately verified and validated. <p>Engineering Skills:</p> <ul style="list-style-type: none"> • Ability to design, perform and verify engineering calculations and computational simulations that verify detail design and minimise physical testing • Possesses a good understanding of materials (preferably surgical instrument and implant materials) with the ability to rationalise appropriate selection criteria • Understands the applications of common manufacturing processes and inspection techniques • Contributes to publications • Capability to transform data (e.g. from clinical papers) into engineering analysis for design verification purposes.

Personal Management duties:

- Capability to lead and manage complex product development, technological and companywide business critical projects
- Proactively reviews companywide systems and procedures and initiates action to improve same.
- Identifies opportunities for improvement projects, estimating costs and ensuring budgeted spend is to plan
- Responsible for ensuring work of design engineering contractors meets quality system requirements
- Ensures relationships with all external parties meets the company financial and quality standards, including ISO 13485: 2016
- Demonstrates written skills that are on par with professional journals

Customer and Supplier facing & Healthcare Compliance:

- Foster, develop and co-ordinate external links, relationships, partnerships and strategic alliances with academic institutions, technical specialists and associated industry
- Participate in qualitative research, often face-to-face with customers and users, to develop the company's understanding of the customer's view of our product and service offerings

Key Interactions

- Reporting to the Chief Technology Officer
- CEO
- Development Engineering peers
- Quality & Regulatory Manager
- Regulatory Advisor
- Manufacturing Advisor
- Key Opinion Leaders
- Academic partners and engineering suppliers

Person Specification

Required

- Possess a minimum BEng Degree (Masters and PhD preferred)
- Possess a valid Engineering Warrant or be in the process of obtaining one
- 2+ years of appropriate design/engineering experience
- Self-Starter capable of working alone and within multi-disciplinary teams
- Exhibits superior time management and decision making skills
- Is proactive, demonstrating a high level of initiative
- Strong interpersonal and teamworking skills
- Well-developed project management skills
- Confident and effective communicator with internal and external customers
- Approaches problem solving in a controlled and logical manner
- Thrives under pressure and in situations of technical complexity
- Practical experience of applying the relevant skills and techniques
- Ability to analyse information and communicate effectively
- Ability to access and organise resources successfully

Preferred Experience

- Understanding of the anatomy and biomechanics of the hip joint and the various surgical approaches to hip replacement

- Leverages own understanding of advanced engineering methods and design and process excellence methodologies
- Possesses a thorough understanding of the product development process for medical devices
- Preferred experience with polymer selection
- Preferred experience with Joint Replacements and Joint Kinematics
- Knowledge of Bio-medical Engineering preferred

This is an exciting opportunity to take a role as a key member of staff within a fast paced start up environment further developing IP rich innovative uses of Garland Surgical Ltd
The above information will form the Further Particulars for the role.

Please submit your CV with covering introductory letter to
John Shapland CTO – johnshapland@garlandsurgical.health
by 4 February 2026.