



## Mechanical Engineer – Job Description

**Location:** Nottingham

**Salary:** £28k – £38k per annum DOE

**Contract:** Full time, Permanent

**Hours:** 40 hours per week (Flexible hours and remote working are possible)

**Package:** Competitive holidays, performance-based (non-contractual) bonus scheme, pension scheme

**Cerca Magnetics Limited** is a joint venture between The University of Nottingham (UoN) and Magnetic Shields Limited (MSL). Cerca's team of experienced business leaders and world-leading scientists have commercialised the world's most advanced functional brain scanner – a lightweight wearable device that uses Optically-Pumped Magnetometers (OPMs). Following initial sales in the research market, Cerca's vision is to offer the system to healthcare providers around the world to revolutionise functional brain imaging.

Cerca's product is an integrated neuroimaging system which is made up of a magnetically shielded room, an array of OPM sensors, and the necessary hardware and software to control the system, capture the imaging data and display it to the user.

Due to ongoing and exciting growth plans, Cerca are now currently recruiting for a Mechanical Engineer to join their dynamic and forward thinking team. The opportunity is to not only join the Company in a very interesting role but also to influence the direction of the position and department, helping Cerca provide revolutionary products that will transform the neuroimaging landscape.

As a Mechanical Engineer, you will be tasked with taking new products from concept to finished product. This will include concept development, conducting design evaluation, analysis and simulation, DFMA, detailed manufacturing drawings, material specification/selection, material/process testing and writing detailed reports.

As the Company expands, there will be opportunities for career development for the right candidate.

### Key Tasks/Duties of this role:

- Produce mechanical designs and solutions for bespoke components and products, meeting the requirements of our worldwide customers
- Responsible for the full lifecycle design – concept design, 2D/3D CAD modelling, analysis and simulation, engineering drawings and designing for manufacture, as well as maintenance and design improvement considerations
- Completing analysis of designs, including finalising load and boundary conditions, pass criteria, details of the design, presentation of results and recommendations and other related issues
- Representing the company during face to face meetings with customers to ensure their requirements are being adhered to
- Sales team liaison to capture product requirements and create design specifications
- Liaising with colleagues to produce standard operating procedures to detail manufacturing and assembly methods
- Working as part of a multi-disciplinary team to build and deliver the products within budget and timescales
- Contribute to the overall Cerca team to assist the Company with its period of expansion

### Essential skills:

- A degree in Mechanical Engineering or similar discipline
- 5 years previous experience in relevant mechanical engineering role that includes lifecycle design experience – concept design, 2D/3D modelling, engineering drawings and designing for manufacture as well as maintenance and design improvement considerations
- Experience using 3D CAD software (Ideally Siemens NX)
- Experience using FEA and other analytical software packages e.g. Nastran



- Strong understanding of Design for Manufacture & Assembly (DFMA)
- Experience designing with a wide range of materials and manufacturing processes with the ability to optimise for performance, mass, strength/durability and cost.
- Analytical skills, including structural and tolerance analysis and use of FEA, mathematical analysis and modelling tools.
- Capable of producing detailed drawings with all relevant information required to manufacture/assemble/purchase
- Experience of tolerance analysis and assembly tolerance stack up
- Be familiar with Low Volume manufacturing techniques
- Able to communicate with external suppliers on the manufacturing feasibility & technical requirements of designs at all stages of development
- Creating test programs / procedures for new and existing products.
- Team player – willing to fully engage and contribute to a small expanding team
- Good communication skills at all levels in the organisation
- Self motivated, self starter in attitude and approach

#### **Desirable Skills:**

- Experience with advanced manufacturing techniques and materials
- Experience of developing and implementing creative solutions utilising a wide range of technologies, ideally meeting the requirements of ISO 13485 and IEC 60601.
- Be comfortable creating engineering documentation (Drawings, Calculations, Test Reports etc.) in line with a QMS, ideally ISO 13485.
- Experience with use of ERP and/or MRP systems ie SAGE, Oracle, Progress Plus

**In line with the Equality Act 2010, Cerca understand and appreciate the importance of equality, diversity and inclusion, both in work and in life. We therefore actively encourage applications from all backgrounds, as we believe a more diverse team is a more successful team!**