

# Job Description



**Role Title:** Mechanical Design Engineer

**Reporting to:** Chief Electrical and Electronics Engineer

## **Role Purpose:**

We require a Mechanical Design Engineer to design enclosures for electrical and electronic systems for a wide range of customer applications focussed on electrification, including battery management, power conversion and electric vehicle control systems.

The successful candidate will package custom and off-the-shelf electrical/electronic components, external connectors, low-voltage harnesses and high-voltage/current interconnect into custom or modified enclosures, dealing with cooling requirements and meeting relevant industry standards and produce cost-effective and manufacturable designs. They will liaise with suppliers and manufacturers and work with the wider multi-disciplinary engineering team to support the delivery of effective engineering solutions.

## **Key Responsibilities:**

- Work closely with the electronics and EDS team and other engineering disciplines, to develop modern, innovative, and practical electrical system solutions
- Design of enclosures with electro-mechanical component package modelling and associated mechanical fixings, etc. to support modules and harnesses.
- Design of solid components from folded sheet metal, machined solid or 3D printed plastic
- Production of 2D manufacturing drawings from 3D models and designs
- Develop 3D wiring harness models within the enclosure
- Management of thermal interfaces such as cooling fins, liquid flow-through cold plates and vapour chambers
- Support Design for Manufacture reviews and work with suppliers and manufacturing partners to optimise designs for manufacturability and cost
- Develop and manage component database for electrical components for 3D packaging
- Manage assembly structures and BOMs, adhering to company engineering change control processes
- Delivery of engineering tasks and reporting of progress and issues in line with project milestones

## **Qualifications, Experience and Skills Required:**

- Degree or similar in automotive, electrical/electronic or mechanical engineering
- Extensive experience (5 years+) relevant design experience of packaging and modelling of electrical assemblies and components and LV & HV wiring harnesses gained across multiple projects in a prototyping and production environment.
- Experience of creating 2D component drawings and manufacturing assembly drawings
- Experience of creating and maintaining 3D electrical component database/ catalogue.
- Experience of thermal management techniques including liquid cooling
- Advanced capabilities in ECAD software tool e.g., Catia V5/V6 or NX

## **Preferred:**

- Experience of working in a relevant industry (such as automotive, rail, marine, energy storage aerospace)
- Experience of high voltage busbar/PDU design and required creepage/clearance rules
- Understanding of structural / stress / finite element analysis

## **System or Knowledge:**

- Knowledge of GT&D and the correct application into component manufacturing drawings.
- Knowledge of relevant material science including thermal properties, corrosion resistance (including galvanic corrosion), strength and durability.
- Understanding of mechanical manufacturing processes and Design for Manufacture/Assembly
- Understanding of tolerance analysis

## **Personal Attributes:**

- Quality-focussed with an attention to detail
- Flexible and enthusiastic
- Good problem solving and analytical skills
- Strong communication skills – including report writing and presentation
- Self-motivated and enjoys working within a team environment
- Willingness to accept responsibility and challenges required to achieve objectives
- Commitment to professional development and continuous learning

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## Location and Travel:

- You must be eligible to work in the **UK** and have no restrictions for world-wide travel.
- This role is based at our Head Office in the **UK**, with flexibility for remote working.
- Working hours are 0900 to 1700, including 30-minute paid break, 5 days a week, however some travel is expected, and flexible working patterns are essential to the role.