

Job Description

Job Title:	Principal Mechanical Engineer	Job Holder:	TBC
Division:	N/A	Grade:	PC
Discipline Area:	Mechanical Engineering	Last Updated:	05/03/2026

Job Purpose:

The Principal Mechanical Engineer will lead the delivery of fully compliant mechanical engineering solutions across the entire engineering lifecycle, ensuring all activities meet rigorous standards for quality, safety, performance, and reliability. This role is responsible for the completion and over-sight of detailed mechanical design activities—including the creation and review of technical documentation, numerical analysis, tolerance studies, and fault investigations—while providing technical guidance and mentorship to junior engineers.

The successful candidate will bring deep expertise in the design, analysis, testing, manufacture, and in-service support of mechanical hardware for both commercial and defence applications. They will collaborate closely with customers, suppliers, project teams, and subject matter experts to resolve complex system design challenges and ensure project requirements are met.

Working both independently and within multidisciplinary teams, the Principal Mechanical Engineer will drive programme outcomes, delivering engineering outputs accurately, efficiently, and on schedule. They will also support the development of early-career engineers, including apprentices and graduates.

Key responsibilities include producing high-quality technical documentation to company standards—such as calculations, 3D CAD models and assemblies, manufacturing drawings, and technical reports. Proficiency with MS Office, project management tools, and 3D CAD platforms (SolidWorks preferred, including FEA and simulation capabilities) is essential.

Responsibilities:

Your typical responsibilities as a Principal Mechanical Engineer will include:

- Ensure clear communication and collaboration within the Mechanical Engineering project team, other engineering functions and project stakeholders.
- Regular reporting into Project Management and Engineering Leadership teams to provide accurate status updates and identify risks, opportunities and dependencies as they emerge.
- Provide technical guidance and mentorship to junior engineers
- Provide leadership and technical direction / task management to ensure delivery of mechanical engineering solutions on-time, on-cost and on-quality.
- Share technical knowledge and best practice.
- Contribute to continuous improvement in design and manufacturability.

Job Description

- Conduct mechanical engineering detailed design, analysis, tolerance studies (including GD&T) and generation of technical documentation (design specifications, test specifications etc) and manufacturing data packs (MDP) to relevant standards including BS8888.
- Preliminary (sizing) structural analyses (hand calculations and SolidWorks Simulate).
- Supporting and facilitating reviews and sign off release of mechanical designs in accordance with company and industry standards.
- Support problem investigations and deliver effective solutions.
- Supporting visits and meetings at UK sites and suppliers when required.

Key Result Areas:

The jobholder will be expected to:

Mechanical Design & Development:

- Strong ability to problem solve with concurrent engineering practices – structured, logical approach to investigate issues and solve problems in an effective cross-functional manner.
- Awareness of other SEA tools and functional inputs that support Mechanical content delivery (e.g. Electrical and PCB design software).
- Promote knowledge sharing and understanding of material selection, machining and manufacturing techniques and employment of them to achieve optimal DfX approaches.
- Demonstrate a high level of competence in the use of CAD tools (preferably SolidWorks).
- Maintain awareness of Mechanical Engineering industry trends - knowledge of new and advancing tools, techniques and technologies.

Mechanical Team Leadership:

- As the product area grows there may be a need to Line manage and hold development discussion 1:1s with assigned team members.
- Work with project managers and / or Head of Discipline to effectively manage time and resources to ensure correct input is given in relation to the mechanical activities.
- Effectively manage time and resources within the assigned mechanical team, seeking to maximise team productivity
- Understand and implement the company environmental, health & safety policy by accepting individual responsibility and responsibility for those personnel under their authority, including others who may be affected by the company's activities.
- Ensure personnel are aware of their responsibility towards H&S and are equipped accordingly.
- Always set a strong personal example regarding all health and safety matters.

Technical Governance:

- Review and release mechanical design work and related technical documentation.
- Understanding of Project life cycle management (PLM) and Project Data Management (PDM) systems (ARAS Innovator experience would be beneficial).
- Manage the Mechanical input into the MDP and ensure compliance with the company's internal standards and processes.

Bid & Project Management:

Job Description

- Define and agree mechanical work packages (scope, estimates, costs).
- Define mechanical elements of solutions to support bids and enquiries.
- Identification and mitigation of technical risks.

Values:

- **Safety First** – We operate safely and responsibly, protecting each other and the environment.
- **One SEA Team** – We are in this together. One team, working ethically, respectfully & professionally. We take responsibility and challenge each other constructively
- **People Focussed** – We all contribute to making our culture one that is supportive and empowering; where everyone can grow and develop, feel valued and rewarded. We prioritise a healthy work-life balance
- **Delivery Excellence** – We exceed our commitments by delivering timely, quality outputs whether that's for each other or our clients and partners. We are always looking for ways to innovate and continuously improve
- **Trusted Partners** - We partner strategically, collaboratively and always with integrity, whether that is between us inside SEA or externally

Qualifications, Skills and Training:

The role holder would be expected to have the following skills, experience and attributes:

- Chartered Engineer — or working towards chartered status is preferable.
- Member of a relevant professional institution (e.g. IMechE or IET).
- In-depth knowledge of the design, test, manufacture and in service support of Mechanical hardware in both commercial and military environments.
- Detailed understanding of best practice Mechanical design process and metrics.
- Working knowledge Of Mechanical Design Tool Sets
- Thorough knowledge Of Military and Commercial Mechanical & Environmental design standards including Def Stans, Mil Specs, CE/UKCA marking.
- 4-5 years of experience in the detailed and system level design of hardware.
- Specific knowledge of the following aspects of Mechanical Design:
 - Principles of physics, and materials science
 - Stress Analysis & Failure Mechanics
 - Aerospace, Marine and Subsea Technologies (preferable)
 - Design for Manufacture, Maintenance and Reliability
 - Dimensioning & Tolerancing
 - Joining Technologies
 - Machine Element Design
 - Technical Product Documentation
 - Coatings and Surface Preparation
 - Sealing Technologies

Reporting Line

The jobholder will report to the Mechanical Engineering Team Lead or Mechanical



A COHORT PLC COMPANY

Job Description

Engineering Head of Discipline (HOD).

Job Location

The role holder can be based at our Barnstaple, Bristol or Beckington sites however given the nature of the role regular travel to the Barnstaple site may be required.

Elements of the job will be office based, but a portion of the work can be conducted at home. This will therefore entail hybrid working.

Job Holder Declaration:

I accept the purpose and key result areas of my role with SEA are as outlined above.

Signature: _____ Date: _____

Line Manager Declaration:

I confirm that the purpose and key result areas of this role are as outlined above have been agreed with me as line manager.

Signature: _____ Date: _____