



US Cargo Systems

Job Description

Business Title: Mechanical Design Engineer, Military BU

Reports To: Military Mechanical Design Manager, Military BU

SUMMARY

The mechanical design engineer is responsible for interpreting customer, regulatory and internal process requirement and giving life to the mechanical and electro-mechanical design at US Cargo Systems. The mechanical design engineer will be the heart of an integrated product team that is tasked with generating new business on behalf of the organization. The mechanical design engineer is expected to provide the necessary leadership to the integrated product team members.

ESSENTIAL DUTIES AND RESPONSIBILITIES

- Understand the customer requirements and track the compliance level of the design in a compliance matrix during the development phase
- Responsible for the design validation and verification, which includes analyses and tests as required
 - Loads analysis
 - Stress analysis using hand calculations or finite element analysis
 - Part and assembly tolerance analysis per ANSI Y14.5.
 - Functional, environmental, static load, robustness testing
- Responsible for the creation of mechanical parts and assemblies to meet the need of the Business Unit customers
- Use the CAD tools to create 3D models of parts and assemblies
- Generate the 2D manufacturing drawings per ANSI Y14.100, including advancing the use of Model Based Definition
- Responsible for creating and maintaining status of the drawing list for the project
- Create Test Requests and design test setups as required
- Understand and comply with all internal process requirements
- Provide a regular and clear status of all pending work
- Review and address the following items:
 - Vendor Deviation Requests
 - Material Review Reports
 - Drawing Change Requests
 - Problem Reports
- Take ownership of mechanical design topics and issues at USCS.
- Design parts to Cost, Manufacturability, Assembly requirements
- Ensure that the mechanical design work is performed in accordance with Design to Cost (DTC), Design for Manufacture (DFM), Design for Assembly (DFA) process requirements.
- Participate and be “hands on” in the troubleshooting of mechanical issues.
- Provide leadership on design of mechanical components and respond to Root Cause Analysis and Corrective Action Requests (RCCA)
- Get behind and advance the use of the SolidWorks suite of design tools (SW Premium with Simulation, SW Composer, SW Inspection, EPDM, SolidCAM).
- Creation, review and approval of technical reports covering the following topics:

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- Detail and Assembly Drawings per ANSI Y14.100, including advancing the use of Model Based Definition
- Part and Assembly Tolerance Analysis per ANSI Y14.5.
- Thermal Analysis
- Stress Analysis
- Applied Loads Report and Interface Loads Report
- Root Cause Analysis and Corrective Action Requests (RCCA)

CORE COMPETENCIES

- Commitment to company values and ethics
- Dependability: personally responsible, completes work in a timely manner, and performs tasks accurately
- Motivation: must maintain a positive attitude and strong work energy
- Advanced computer proficiency
- Analytical skills: must be able to gather information and use data to determine cause and effect for complex problem solving
- Continuous learning: ability to learn new procedures and adapt to change
- Creativity: makes constructive suggestions and creates novel solutions to problems; evaluates new technology as potential solutions to existing problems
- Communication: excellent interpersonal and oral and written communication skills
- Independent: must have the ability to carry out and follow through on tasks with minimal supervision
- Initiative: plans work and carries out tasks without detailed instructions, prepares for problems or opportunities in advance, undertakes additional responsibilities
- Problem Solving: ability to develop and implement new ideas to improve processes
- Strong judgment and decision making
- Teamwork: works harmoniously with others to get a job done, responds positively to instructions/procedures, and works well with others
- Time management: ability to organize and manage multiple priorities and effectively deal with tight deadlines and pressure

QUALIFICATIONS

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.

The individual applying for this position must show a keen interest in mechanical and electro-mechanical design, materials science, stress analysis, state of the art manufacturing technologies, and going hands when necessary. In addition, the individual must show an interest in pushing beyond the envelope of current designs.

EDUCATION

- Minimum: Bachelor of Science degree (B.S.) in Mechanical or Aeronautical/Aerospace Engineering from an accredited four-year college or university;
- Preferred: Master of Science degree (M.S.) in Mechanical or Aeronautical/Aerospace Engineering or related field of study;

EXPERIENCE



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- Minimum:
 - Experience in the design of dynamic mechanical and electro-mechanical components and mechanisms.
 - Proficiency in any 3D CAD package
- Preferred:
 - Experience in the creation, publication and revision of engineering drawings in accordance with ANSY Y14.100 standards.
 - Experience in the troubleshooting of mechanisms in the context of the development cycle
 - Experience in the certification of mechanical and electro-mechanical components for civil or military aerospace applications
 - Experience in creating tolerance analysis for large assemblies and ensure compliance with aircraft interface requirements
 - Experience in stress analysis (including materials science), FEA and motion simulation
 - Advanced Experience with SolidWorks toolset or equivalent
 - Leadership experience with managing large groups of engineers, in the gated development process
 - Advanced experience with manufacturing processes and tools used in the industry

PHYSICAL DEMANDS/WORK ENVIRONMENT

The physical demands and work environment characteristics described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- Maneuvers in, around, under, and about factory and/or laboratory equipment on a regular and continuous basis
- Must be able to lift a minimum of 5 to 10 pounds
- Specific vision abilities required by this job include close vision, depth perception, and ability to adjust focus
- Travel required up to 15%
- Works at telephone answering equipment, design equipment, and at a PC for hours at a time

While performing the duties of this job, the employee may be regularly required to sit, stand, bend, reach and move about the facility.

The environment characteristic for this position is an office setting. Candidates should be able to adapt to a traditional business environment.