



**Zoomlion Heavy Industry N.A., Inc.**

## **Sr. Mechanical Engineer – FEA Structure**

**Department:** Engineering

**FLSA Status:** Exempt

**Grade/Level:**

**Job Type:** Regular

**Work Schedule:**

Monday through Friday unless travelling.

**Job Status:** Full Time

**Reports To:** Engineering Manager - Structural Systems

**Amount of Travel Required:** up to 10%

**Positions Supervised:** None

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### **POSITION SUMMARY**

Perform engineering duties in planning, designing and analyses, for structural design and other mechanically functioning equipment for the Earth-moving, MEWP and Agricultural divisions. This includes direct involvement in all related design activities and engagement with cross-functional support staff to ensure project goals are met. Evaluate products, parts or processes for cost efficiency and reliability and work with other members of the engineering staff in a team environment to ensure that production is completed per project plan and timely.

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### **ESSENTIAL FUNCTIONS**

#### **Reasonable Accommodations Statement**

To accomplish this job successfully, an individual must be able to perform, with or without reasonable accommodation, each essential function satisfactorily. Reasonable accommodations may be made to help enable qualified individuals with disabilities to perform the essential functions.

#### **Essential Functions Statement(s)**

- Perform complicated static, non-linear, modal, fatigue, and multi-body analyses.
- Read and interpret blueprints, technical drawings, schematics, or computer-generated reports.
- Research, design, evaluate, install, operate, and maintain mechanical products, equipment, systems and processes to meet requirements, applying knowledge of engineering principles.
- Collaborate with engineers or other personnel as appropriate regarding any essential engineering functions and to implement operating procedures, resolve system malfunctions, or provide technical information and/or assistance.
- Recommend design modifications to eliminate machine or system malfunctions.
- Conduct research that tests or analyzes the feasibility, design, operation, or performance of equipment, components, or systems.
- Investigate equipment failures and difficulties to diagnose faulty operation, and to make recommendations to maintenance crew.
- Develop and test models of alternate designs and processing methods to assess feasibility, operating condition effects, possible new applications and necessity of modification.
- Develop, coordinate, or monitor all aspects of production, including selection of manufacturing methods, fabrication, or operation of product designs.

- Specify system components or direct modification of products to ensure conformance with engineering design and performance specifications.
- Research and analyze customer design proposals, specifications, manuals, or other data to evaluate the feasibility, cost, or maintenance requirements of designs or applications.
- Write performance requirements for product development or engineering projects.
- Provide feedback and guidance to design engineers on customer problems or needs.
- Apply engineering principles or practices to emerging fields, new technologies and engineering concepts and practices.
- Study industrial processes to determine where and how application of equipment can be made.
- Design test control apparatus or equipment or develop procedures for testing products.
- Evaluate mechanical designs or prototypes for energy performance or environmental impact.
- Develop the design of products using computer-assisted design (CAD) in conformance to all appropriate industry standards.
- Assist designers in developing the design of products using computer-assisted design (CAD) or drafting equipment and software.
- Engage and participate in all relevant engineering activities including, DFMEA's, design reviews, tolerance stack-ups and engineering notifications.
- Create excel and python-based programs to assist with design verification
- Perform hand calculations to support design decisions and verify the analyses results.
- Confer with engineers or other personnel as appropriate regarding any essential engineering functions.

## **POSITION QUALIFICATIONS**

### **Competency Statement(s)**

- Detail Oriented - Ability to pay attention to the minute details of a project or task.
- Accuracy - Ability to perform work accurately and thoroughly.
- Accountability - Ability to accept responsibility and account for his/her actions.
- Analytical Skills - Ability to use thinking and reasoning to solve a problem.
- Project Management - Ability to organize and direct a project to completion.
- Conceptual Thinking - Ability to think in terms of abstract ideas.
- Goal Oriented - Ability to focus on a goal and obtain a pre-determined result.
- Problem Solving - Ability to find a solution for or to deal proactively with work-related problems.
- Communication, Oral - Ability to communicate effectively with others using the spoken word.
- Communication, Written - Ability to communicate in writing clearly and concisely.
- Decision Making - Ability to make critical decisions while following company procedures.
- Innovative - Ability to look beyond the standard solutions.
- Systems Analysis - Ability to determine how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
- Technical Aptitude - Ability to comprehend complex technical topics and specialized information.

## **SKILLS & ABILITIES**

**Education:** Bachelor's Degree (four-year college or technical school) Required, Field of Study:

Mechanical Engineering or related field

**Experience:** 5 plus years of experience in Mechanical or Agricultural Engineering or related field  
Previous experience in Construction, Heavy Industrial, AG equipment are a plus.  
Previous experience in Root Cause Analysis and 6 Sigma Tools.

Office Suite (Outlook, Word, Excel, PowerPoint, SharePoint, etc.)

**Computer Skills:** ANSYS (Preferred), Altair products, MATLAB or Python (desired)  
CAD software: Pro-E/Creo and/or Siemens NX  
Root Cause Analysis and 6 Sigma Tools

**Certifications & Licenses:**

Familiar with: Industrial engineering standards (ISO, ASME, SAE, ASABE, etc.) and Complex manufacturing processes

**Other Requirements:**

Critical decision-making skills

**PHYSICAL DEMANDS**

- N (Not Applicable)** Activity is not applicable to this position.
- O (Occasionally)** Position requires this activity up to 33% of the time (0 - 2.5+ hrs./day)
- F (Frequently)** Position requires this activity from 33% - 66% of the time (2.5 - 5.5+ hrs./day)
- C (Constantly)** Position requires this activity more than 66% of the time (5.5+ hrs./day)

**Physical Demands**

Stand	F	<b>Lift/Carry</b>	
Walk	F	10 lbs. or less	O
Sit	F	11-20 lbs.	O
Manually Manipulate	O	21-50 lbs.	O
Reach Outward	O	51-100 lbs.	N
Reach Above Shoulder	O	Over 100 lbs.	N
Climb	O	<b>Push/Pull</b>	
Crawl	N	12 lbs. or less	O
Squat or Kneel	N	13-25 lbs.	O
Bend	O	26-40 lbs.	N
Grasp	O	41-100 lbs.	N
Speak	F		

**Other Physical Requirements**

**WORK ENVIRONMENT**

Office environment in a controlled atmosphere building.