Zoomlion Heavy Industry N.A., Inc.

Sr. Mechanical Engineer – Powertrain/Engine Installation

Department: Engineering
FLSA Status: Exempt
Grade/Level:
Job Type: Regular
Work Schedule:
Weekdays Monday through Friday. Hours flexible to meet project needs.

Job Status: Full Time
Reports To: Engineering Manager - Power Systems
Amount of Travel Required: up to 15%
Positions Supervised: None

POSITION SUMMARY

The Sr. Mechanical Engineer position is a non-supervisory Engineering technical leadership role. Provide specialty research and development, engineering analysis, system simulation, and performance enhancement in strategic powertrain technology areas. Solve performance and durability analysis problems; provide design insights and leadership to the Power Systems team on a project basis.

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 enable qualified individuals with disabilities to perform the essential functions.

Essential Functions Statement(s)

- Design / Develop the integration of Engines, Cooling system and Aftertreatment devices for applications in the Ag or Construction Equipment industry.
- Develop Power and Torque curves, in conjunction with Engine Supplier, for both Ag and Construction Industry applications.
- Simultaneously support multiple projects in different phases of development.
- Conduct and/or participate in FEA and CFD analysis of the Engine Installation, Cooling Systems, Aftertreatment Systems and any auxiliary systems.
- Work with suppliers to validate product designs to meet specifications.
- Lead design reviews for Engine and related systems during the development process to ensure designs meet requirements, are cost effective, manufacturable and meet quality targets.
- Participate in prototype builds, vehicle validation, and field testing both domestically and abroad.
- Orchestrate and participate in Quality driven initiatives such as APQP or Six Sigma for: Engine, Cooling and Aftertreatment systems.
- Author performance specs, test procedures, and design standards in the following areas of: Engine Installation, Cooling System, Aftertreatment devices.

POSITION QUALIFICATIONS

Competency Statement(s)

- Communication, Oral - Ability to communicate effectively with others using the spoken word.
- Communication, Written - Ability to communicate in writing clearly and concisely.
- Goal Oriented - Ability to focus on a goal and obtain a pre-determined result.
- Accountability - Ability to accept responsibility and account for his/her actions.
- Creative - Ability to think in such a way as to produce a new concept or idea.
- Interpersonal - Ability to get along well with a variety of personalities and individuals.
- Systems Analysis - Ability to determine how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
- Detail Oriented - Ability to pay attention to the minute details of a project or task.
- Analytical Skills - Ability to use thinking and reasoning to solve a problem.
- Problem Solving - Ability to find a solution for, or to deal proactively with, work-related problems.
- Judgment - The ability to formulate a sound decision using the available information.
- Ethical - Ability to demonstrate conduct conforming to a set of values and accepted standards.
- Technical Aptitude - Ability to comprehend complex technical topics and specialized information.
- Initiative - Ability to make decisions or take actions to solve a problem or reach a goal.
- Innovative - Ability to look beyond the standard solutions.

SKILLS & ABILITIES

Education: Bachelor's Degree (four-year college or technical school) Required, Field of Study: Mechanical, Industrial, Ag Engineering or related study

Master's Degree Preferred, Field of Study: Engineering or Business

Experience:

- 5 plus years of experience in design & manufacturing of driveline systems, such as engines, transmissions, drive shafts, differentials and the final drive of off-highway vehicles (including agriculture, construction, mining machinery)
- Powertrain and controls system experience related to the design and development of mobile equipment
- Ability to establish and maintain effective communication with internal and external customers and outside resources
- Possess a strong mechanical knowledge of vehicles, trucks, mobile equipment, and related systems
- Working knowledge of hydraulic systems and designs
- Excellent time management and organizational skills
- Knowledgeable in the design of the engine systems, including chassis integration
- Preferred skills with FEA (ANSYS), and CFD is a plus
- Multi-Body Dynamic tools (Adams and/or MatLab Simulink) which incorporate FEA flex bodies for loads generation and durability analysis is a plus
- Experience in systems engineering, DOE, and optimization. Durability attribute and advanced fatigue theory knowledge is required, including experience with engine and vehicle validation and durability processes
- Excellent communication, interpersonal, and negotiating skills.
- Team player- ability to work with many design teams concurrently and globally

Computer Skills: Competent in CAD software, i.e. CREO, Pro-E, AutoCAD, NX required; CFD and FEA, a plus.
Microsoft Office Suite, including Outlook, Word, Excel, PowerPoint, Visio, Project required.

	Ability to learn new technologies and systems through proof of concepts and prototyping
Other Requirements:	Able and willing to travel outside the US as required
	Ability to understand the technical and practical aspects of the product and to explain them in a clear, understandable manner to various audiences

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		**Lift/Carry**	
Stand	O	10 lbs or less	O
Walk	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		
Crawl	N	**Push/Pull**	
Squat or Kneel	N	12 lbs or less	O
Bend	O	13-25 lbs	O
Grasp	O	26-40 lbs	N
Speak	F	41-100 lbs	N

WORK ENVIRONMENT

Office environment in a controlled atmosphere building.