

**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 25%**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 help enable qualified individuals with disabilities to perform the essential functions.

**Essential Functions Statement(s)**

- Lead design and sizing of Powertrain Systems based on powertrain loading, impact loading, wheel slip, road load & work duty cycles, etc.
- Analyze system dynamics, energy efficiency, heat transfer, NVH, quality and cost to ensure design meets customer requirements.
- Researches, studies, and proposes use of new technologies to be used in the development of new and improved powertrain components/systems in products
- Perform system development, component selection, engineering analysis, system modeling, and problem diagnosing in the vehicle powertrain areas.
- Maintain effective communication with suppliers, internal and external customers, and outside resources concerning powertrain related technical issues
- Communicate project objectives to team members and maintain close contact to coordinate activities with other groups within the product Engineering Departments
- Enforce the proper use of engineering criteria and drawing standards. Ensure that technical issues are conducted within the framework of company policies and procedures.
- Evaluate designs for performance, safety, and reliability
- Direct preparation of layouts, drawings, specifications, and bills of material
- Create and maintain project documentation for analysis, research, and historical records
- Perform engineering analysis and testing to support the selection of parts, components, and materials that meet requirements
- Work with suppliers to validate product designs to meet specifications
- Prepare technical proposals, quotations, reports, and presentations

- Provide technical assistance for prototype, pilot, and production support

## **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.

**Other Requirements:** Ability to learn new technologies and systems through proof of concepts and prototyping  
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)

<b>Physical Demands</b>		<b>Lift/Carry</b>	
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	<b>Push/Pull</b>	
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.

---

---

Prepared by: Deb Lauenstein, HR Director Date: 8/24/2017  
Approval  
Signature: Jack Wang, President/General Manager Date: 8/28/2017

The company has reviewed this job description to ensure that essential functions and basic duties have been included. It is intended to provide guidelines for job expectations and the employee's ability to perform the position described. It is not intended to be construed as an exhaustive list of all functions, responsibilities, skills and abilities. Additional functions and requirements may be assigned by supervisors as deemed appropriate. This document does not represent a contract of employment, and the company reserves the right to change this job description and/or assign tasks for the employee to perform, as the company may deem appropriate.